सत्यमेव जयते

INDIAN PETROLEUM & NATURAL GAS STATISTICS 2023-24



Government of India

Ministry of Petroleum and Natural Gas

Economic & statistics Division



Economic & Statistics Division

Ministry of Petroleum and Natural Gas

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MESSAGE

India's oil and gas sector has undergone significant reforms under the visionary leadership of our Hon'ble Prime Minister. These reforms prioritize energy security while fostering a balanced energy mix that includes alternative fuels, supporting the nation's commitment to net-zero emissions by 2070.

Substantial investment and progress in exploration, refinery operations, gas pipelines, biofuels, and compressed biogas (CBG) have reshaped India's energy landscape, stimulating a rise in deep-tech startups and investor confidence.

The significant expansion of India's energy infrastructure, marked by a more than doubling of LPG connections from 14.52 crore in 2014 to 32.42 crore in 2024, the distribution of over 10.32 crore LPG connections under the Pradhan Mantri Ujwala Yojana (PMUY), a fivefold increase in PNG connections from 25.40 lakh to 1.29 crore and a dramatic increase in CNG stations from 938 to 6861 and ethanol blending in petrol rise from 1.53% in 2014 to 12.80% in March 2024 including 2 gas discoveries in an earlier classified "No Go" area represents a significant step towards energy independence. These figures underscore India's unwavering commitment and progress in securing its energy future.

This annual publication offers a comprehensive overview of the sector's infrastructure and performance, detailing the entire hydrocarbon chain from production and consumption to economic analysis. I am confident that this document will serve as a valuable resource for policymakers, industry professionals and all stakeholders involved in the oil and gas sector.

(Hardeep S Puri)

New Delhi
31 January 2025

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MESSAGE

India is the world's third largest energy consumer and demand of energy in India is growing progressively over the years. India's role in global oil and gas markets is set to grow significantly with energy demand expected to more than double by 2040. Towards ensuring our commitment to energy security, energy transition, affordable and reliable access to energy, Government has undertaken landmark reforms in the upstream, midstream, and downstream sectors of Hydrocarbon industry in India.

In spite of multiple global headwinds, arising from economic and geo-political uncertainties, India registered a 8.2% economic growth in FY 2023-24 indicating resilience in India's economy.

This annual Publication 'Indian Petroleum &Natural Gas Statistics 2023-24, present an integrated database on Oil & Gas Sector at a Glance. The Publication encapsulates a comprehensive and accurate data of Crude Oil & Natural Gas Production, Refining, Transportation & Marketing Infrastructure, Prices and Taxes & Duties, Production and consumption of petroleum products, Trade (Import & Exports), Biofuels and Infrastructure Projects in oil and Gas sectors. It is a valuable database, referred widely, both within and outside the country.

I am confident that this publication provides enough evidence to the policy makers,administrators, researchers and academicians across the world in the field of Oil and Gas sectors for key approaches.

(Suresh Gopi)

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पंकज जैन
सचिव
Pankaj Jain
Secretary

सत्यमेव जयते



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Within the country's diverse energy landscape, the Oil & Gas sector remains vital, fulfilling approximately one-third of India's energy needs and playing a crucial role in its rapidly expanding economy. Recognizing its significance, the Government of India has implemented transformative reforms across the upstream, midstream and downstream segments of the hydrocarbon industry such as Mission Anveshan, Extended Continental Shelf Survey, SATAT initiatives for promoting CBG, PM JI-VAN Yojana for setting up of 1G & 2G ethanol plant, Ethanol Blended Petrol (EBP) Programme, Pradhan Mantri Ujjwala Yojana (PMUY), increasing Refining Capacity, Electric Vehicle Charging Stations (EVCS) at ROs etc. The aim of these initiatives is to strengthen energy security, enhance accessibility, and promote sustainability nationwide.

This edition of publication of 'Indian Petroleum & Natural Gas Statistics 2023-24' marks a significant achievement in offering a comprehensive, up-to-date, and reliable database of India's Oil & Gas sector. This valuable resource is designed to inform policies and decision-making, encompassing a wide range of hydrocarbon-related data, including reserves, production, capacity, trade, pricing, taxation, consumption, workforce, and more. It serves as an essential data hub for Crude Oil, Natural Gas, LNG, Petroleum Products, and Biofuels etc.

I extend my sincere appreciation to the dedicated officers and officials of the Economics & Statistics Division, Ministry of Petroleum & Natural Gas, for their commendable efforts in compiling and publishing this crucial document. I am confident that this publication will serve as an invaluable resource for policymakers, administrators, industry professionals, academics, and researchers, contributing to the continued growth and evolution of India's Oil & Gas sector on both national and global fronts.

[Pankaj Jain]

Praveen M. Khanooja
Additional Secretary



सत्यमेव जयते

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MESSAGE

The Oil and Gas sector plays a vital role in powering India's economic growth, and we are committed to ensure a sustainable, secure and responsible energy future. As we reflect on another year of growth and progress in the Oil and Gas sector we remain focused on addressing the evolving energy landscape, leveraging new technologies and fostering a culture of excellence and sustainability. Various dedicated efforts have been made in enhancing domestic oil & gas production, improving operational efficiencies and promoting innovation.

This "Indian Petroleum & Natural Gas Statistics" is a testament to our sector's resilience, adaptability and commitment to excellence. This publication provides overall glance of Oil & Gas sector and covers various aspects like refining, exploration, transportation & marketing infrastructure, Prices, Taxes & Duties, Imports & Exports, biofuels, infrastructure projects etc, which is very helpful in decision making and policy formulation for future energy landscape.

I would like to express my deep appreciation to the dedicated officers and staff of the Economic & Statistics Division under this Ministry for their efforts in bringing this publication. I hope that all the stakeholders would find this publication informative and insightful.

29.01.2025

(Praveen M. Khanooja)

29th January, 2025

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PREFACE

The Ministry of Petroleum and Natural Gas is pleased to present the Indian Petroleum and Natural Gas Statistics 2023-24, an annual report aimed at providing a comprehensive, integrated, and updated database of the oil and gas sector in India, encompassing the entire hydrocarbon value chain.

This publication offers a holistic overview of the key developments across India's hydrocarbon sector, including exploration, production, refining, transportation, marketing, and the import and export of crude oil and petroleum products. It also includes insights into taxes and duties, as well as workforce data for Oil & Gas CPSEs. Enhanced by user-friendly graphics, charts, and tables, this edition provides an accessible yet detailed perspective on India's energy landscape. A dedicated section offers a global outlook on the petroleum sector, and the report concludes with definitions, appendices, and conversion factors for better usability.

I take this opportunity to express my sincere gratitude to the various Ministries, Departments, Oil & Gas CPSEs, and attached offices under the Ministry of Petroleum and Natural Gas for their invaluable cooperation and support in furnishing the necessary information and data.

This publication owes its completion to the dedicated efforts of the Economics & Statistics Division. I extend my heartfelt appreciation to the entire team of EnS Division for their instrumental roles in data collection, analysis, reporting, and graphic design. I would also like to acknowledge the support provided by the technical officers of the Division, including Shri Kishor Kumar Sahu, Shri Amit Duhan, Shri B.K. Tripathi, Shri Ramit Kalia, Shri Prashant Rajput, Ms. Ayushi Jain, and Shri Mozam Singla, whose expertise and valuable insights have significantly enriched the quality of this publication.

I welcome suggestions and feedback to enhance future editions of this report, ensuring it remains a vital resource for all stakeholders in the oil and gas sector.

(D. K. Ojha)

New Delhi
06th February, 2025

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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, alternate fuels, 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 information, 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/loss.

   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:

   (a) 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.

   (b) Based on BP statistics a new table on the World Imports of LNG (Country-wise) included in the Chapter- XI (International Petroleum Statistics)

10. **Abbreviations:** Details of abbreviations used have been provided in Appendix.

11. **Conversion factor:** The conversion factors generally used in the Oil & Gas sector are also given in the Appendix.

    Errors or Omissions and Commissions, if any, detected may kindly be brought to the notice of the Deputy Director General, Economic & Statistics Division, Ministry of Petroleum & Natural Gas at email **d.k.ojha@gov.in** for rectification in the subsequent issue.

CHAPTER-I



Oil & Gas Sector - At a Glance

Introduction of Oil & Gas Sector:

Securing a stable and clean energy supply is of utmost significance for India's sustainable progress and economic advancement. Energy is the mainstay of socio-economic growth and development for a nation like India, which is currently the third largest primary energy consumer while its per-capita energy consumption is only one-third of the global average. India is the world's third-largest consumer of oil, the fourth-largest oil refiner and a net exporter of refined products. India's situation stands out on the worldwide energy stage, while global energy demand is anticipated to increase at a moderate rate of approximately 0.5% annually over the long term, India's energy demand is projected to surge at a rate of 2.6% per year, potentially doubling by 2050 (as per BP's New Momentum Scenario). As one of the world's rapidly growing, India continues to experience a rise in its energy requirements. Hence, the availability of affordable energy has turned into a fundamental necessity for the nation.

India is striving towards ensuring energy justice through accessibility and affordability which will be the key driver towards increasing per-capita energy demand in near future. The Hon'ble PM has envisaged four pillars of India's energy future – energy access, energy efficiency, energy sustainability and energy security. These four pillars are crucial for India as it marches ahead in its ambition to become an economic powerhouse in the world. The transformation of our energy system towards a more reliable, eco-friendly, and cost-effective one is a central goal of today's energy policy. The focus towards emerging fuels and alternate energy will act as key driver and lever in designing the futuristic energy systems and formulating an effective national energy policy. The issue of energy transition, diversification of energy basket, energy independence and energy security shall be affecting the energy mix of India in the years ahead. Through a meticulously designed strategy, major Oil and gas CPSEs plans to achieve net zero operations by 2046, which aligns with India's net zero pledge for 2070 and resonates with the unifying principle of "One Earth, One Family, One Future."

India is the world's third-largest energy consumer, and with its growing economy, energy demand is expected to rise further. As per the report of Energy Institute Statistical Review of World Energy, 2024, around 90% of India's primary energy comes from fossil fuels, with coal accounting for about 56.84%, oil and gas combined accounts for ~32.88% and other sources making up the remainder. This heavy reliance on fossil fuels underscores the importance of the energy sector in India's economic growth. India relies on a diverse mix of energy sources, including coal, oil, natural gas, renewables, Hydrogen and nuclear energy. Coal still accounts for a significant portion of electricity generation, but there is a strong push to reduce dependence on fossil fuels and increase the share of renewable energy.

The global shift towards a low-carbon economy, driven by the dominant climate narrative, has significant implications for India's energy sector and other sectors. This transition aims to mitigate climate change by reducing greenhouse gas emissions and promoting sustainable energy practices.

The adoption of renewable energy sources, such as solar, wind, and hydro, is crucial for reducing carbon emissions. This transition requires substantial investments in renewable energy infrastructure and technology. Reducing reliance on coal, oil and other fossil fuels will have economic and social implications, including job losses in traditional energy sectors and the need for retraining workers.

Present State: India's primary energy mix

	Oil	Natural Gas	Coal	Nuclear energy	Hydro electric	Renewables	Total
Total Energy (in Exajoules)	10.57	2.25	21.98	0.43	1.39	2.38	39.02
%	27.1	5.8	56.3	1.1	3.6	6.1	100

Source: Energy Institute Statistical Review of World Energy 2023

The current oil and gas production is not sufficient to fulfill the country's energy demand and leads to the import of crude oil and natural gas. The import dependency on crude oil and natural gas based on consumption of petroleum products in 2023-24 was about ~87.7 % and 46.4 % respectively.

I.1 Glance of Crude Oil:

Crude oil is a naturally occurring, unrefined petroleum product composed of hydrocarbon deposits and other organic materials. It is a vital natural resource and serves as a primary source to produce various petroleum products, including Petrol, Diesel, LPG, Naphtha, Jet Fuel, and Lubricants, among others. India's estimated balanced recoverable crude oil reserves in the country was 671.4 MMT as of 1st April, 2024. Geographically, the Western Offshore region holds the largest share of these reserves at 31.8%, with significant contributions from Assam (21.7%), Rajasthan (19.6%) and Gujarat (17.7%). Oil contributes to 27.1 percent share in the total primary energy supply and plays a crucial role in meeting the nation's increasing demand of energy.

Crude Oil Production: In 2023-24, the domestic produce of oil in the country was 29.36 MMT, decreasing significantly from 37.46 MMT in 2014-15, declining at the annual rate of 2.7 percent. This decline in production can be attributed to several factors, including the natural depletion of older and marginal fields, accessibility and technical challenges in certain reservoirs, disruptions in field activities, etc. The Government implemented several long-term and short-term initiatives, to address the declining domestic crude oil production. These initiatives include reforms in the Hydrocarbon Exploration and Licensing Policy (HELP) 2019, Policy Framework for Exploration and Exploitation of Unconventional Hydrocarbons 2018, induction of suitable technologies on selective fields,monetisation of small and marginal discoveries in onshore through service contract and outsourcing National companies such as Oil and Natural Gas Corporation (ONGC) and Oil India Limited (OIL) are the leading producers of domestic crude oil production, contributing approximately 65.4% and 11.4% respectively in 2023-24. The remaining 23.2% of crude oil is being produced by the Production Sharing Contracts (PSC) or Revenue Sharing Contracts (RSC) regime.

Crude Oil Processed (Consumption): As of April 2024, India's oil refining capacity stood at 256.82 metric tonnes per annum (MMTPA). India is the second-largest refiner in Asia & fourth largest in the world. India has 22 Nos. of refineries presently Installed where Private companies owned about 38.7% of the total refining capacity. As per the Centre for High Technology (CHT), a technical wing of Ministry of Petroleum and Natural Gas, the refining capacity of Indian refineries is projected to increase by about 56 MMTPA by the year 2028.Cauvery Basin Refinery (CBR) – Nagapattinam is under Capacity Augmentation from 1.0 MMTPA to 9 MMTPA. HPCL Rajasthan Refinery Ltd. (HRRL) a Joint Venture between Hindustan Petroleum Corporation Limited (HPCL) and Government of Rajasthan (GoR) with an equity participation of 74% and 26% respectively with 9.0 MMTPA capacity is under progress. Numaligarh Refinery is under capacity augmentation from 3.0 MMTPA to 9.0 MMTPA. During FY 2023-24 crude oil processed was 261.55MMT which is an increase of 2.5% in comparison to FY 2022-23 (253.92 MMT). As regards capacity utilisation it is 103% against capacity of 253.92 MMTPA during FY 2022-23.

Crude Oil Imports: India ranks third globally in crude oil imports after China and United States, having imported 234.26 MMT of crude oil in 2023-24. The country's imports accounted for 87.8% of crude oil supply in 2023-24. India imports its crude oil from diverse regions including the Middle East, North America, South America, Africa, Europe etc. Historically, India relied on the Middle East for its crude oil supply. The price of crude oil in international markets is based on the demand supply scenario, geopolitical issues and various other market conditions. It is difficult to make accurate predictions about crude oil prices, specially amid ongoing volatility. India is majorly dependent on crude oil imports to meet its domestic requirements. Public Sector Oil Companies finalize their crude oil requirements annually based on techno-economic analysis of the petroleum products' demand and evaluation of various crude oil supply sources through annual term contracts as well as short term spot contracts. During this procurement of crude oil through Term and Spot contracts by the OMCs and standalone refineries, various compatible grades of crude oil available in the international market (including crude oils benchmarked to Brent/ WTI) are contracted out.

Import of crude oil during 2023-24 was 234.26 MMT valued at ₹ 11,05,176 crore as against import of 232.70 MMT valued at ₹ 12,60,372 crore in 2022-23 which is higher by 0.7% in quantity terms and lower by 12.3% in value terms vis-a-vis 2022-23.

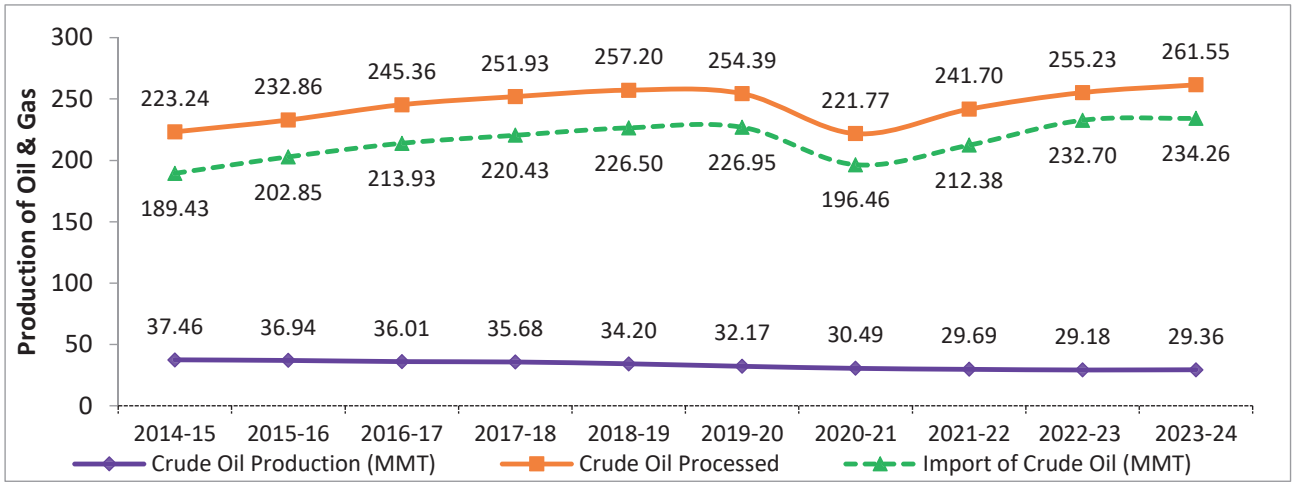
The trends in the Crude Oil production, import and consumption of crude oil in term of crude process have been depicted as follows: -

Table-I.1: Trends of Crude Oil Production, Consumption and Imports

Year	Crude Oil Production (MMT)	% Growth in Crude Oil Production	Crude Oil Processed	% Growth in Crude Oil Processed	Import of Crude Oil (MMT)	% Growth in Imports of Crude Oil
2014-15	37.46	-0.87	223.24	0.33	189.43	0.10
2015-16	36.94	-1.39	232.86	4.31	202.85	7.08
2016-17	36.01	-2.53	245.36	5.37	213.93	5.46
2017-18	35.68	-0.90	251.93	2.68	220.43	3.04
2018-19	34.20	-4.15	257.20	2.09	226.50	2.75
2019-20	32.17	-5.95	254.39	-1.10	226.95	0.20
2020-21	30.49	-5.21	221.77	-12.82	196.46	-13.44
2021-22	29.69	-2.63	241.70	8.99	212.38	8.10
2022-23	29.18	-1.72	255.23	5.60	232.70	9.57
2023-24	**29.36**	**0.61**	**261.55**	**2.47**	**234.26**	**0.67**
CAGR 2014-15 to 2023-24 (%)		-2.67		1.78		2.39

Note: % Growth based on the previous Financial Year P: Provisional MMT: Million Metric Tonne

Figure I.1: Production, consumption and imports of Crude Oil



The Government has implemented a comprehensive, multi-pronged strategy to reduce import dependency on crude oil. This approach includes, among other measures, the substitution of demand by promoting the use of natural gas as fuel and feedstock across the country to increase its share in the economy and transition towards a gas-based economy. Additionally, the strategy emphasizes the promotion of renewable and alternative fuels such as ethanol, compressed biogas (CBG), and biodiesel, alongside the establishment of electric vehicle charging infrastructure. Notably, to encourage the adoption of CBG as an automotive fuel, the Government has launched the Sustainable Alternative Towards Affordable Transportation (SATAT) initiative.

I.2 Glance of Petroleum Products:

India, with a capacity of 256.8 Million Metric Tonne per annum (MMTPA), as of April 1st , 2024, stands as the second-largest refiner in Asia and fourth-largest refiner in the world, after United States, China, and Russia. The significant growth in India's refining sector is leading the nation to achieve self-sufficiency in refining.

Moreover, India has emerged as a major exporter of high-quality petroleum products. The country has a total of 22 refineries. Public Sector Undertaking (PSU) companies namely, Indian Oil Corporation Limited along with subsidiaries, Hindustan Petroleum Corporation Limited and Bharat Petroleum Corporation Limited, Mangalore Refineries and Petrochemicals Limited, and Numaligarh Refinery Limited are involved in refining. Private sector companies in refining are Reliance Industries Limited and Nayara Energy Limited. There is one refinery in Joint Venture of PSU and Private by the name of HMEL. These geographically dispersed refineries are interconnected through cross-country pipelines. Production of petroleum products increased from 221.14 MMT in 2014-15 to 276.09 MMT in 2023-24, with a 2.5% annual increase Over the last 10 years, imports of petroleum products increased annually by 9.6% while exports declined by 0.2% due to rising domestic demand of petroleum products 3.9% annually.

The consumption of petroleum products increase during FY 2023-24 with a volume of about 234.026 MMT reported a growth of 5% compared to the volume of about 223.02 MMT during FY 2022-23. The country has experienced sustained economic growth over the past few years resulting in increased industrialization, urbanization and infrastructure development along with the rise in total sales of vehicles. These are the major factors, which have contributed to overall higher demand for transportation, energy, and fuel, consequently driving up fuel consumption. Oil consumption and imports have grown rapidly on account of rising vehicle ownership and road transport use. The Pradhan Mantri Ujjawala Yojna (PMUY) scheme provides LPG connections to households living below the poverty line. Alongside the increasing use of LPG in rural areas, there has also been growth in the use of piped natural gas (PNG) in urban areas. The transportation sector has experienced remarkable growth in recent years, emerging as the fastest-growing end-use segment. India is led for a significant expansion of its transportation infrastructure – from highways, railways and metro lines to airports and ports.

The import of petroleum products during 2023-24 was 48.69 MMT valued at ₹1,90,069 crore against the import of 44.60 MMT valued at ₹2,15,854 crore in 2022-23 which was higher by 9.2% in quantity terms and lower by 11.9% in value terms vis-a-vis 2022-23. Further, while the exports of petroleum products during 2023-24 was 62.59 MMT valued at ₹ 3,94,723 crore showing a increase of 2.6% in quantity terms but lower by 14% in value terms against the export of 61.02 MMT valued at ₹ 4,58,729 crore during 2022-23.

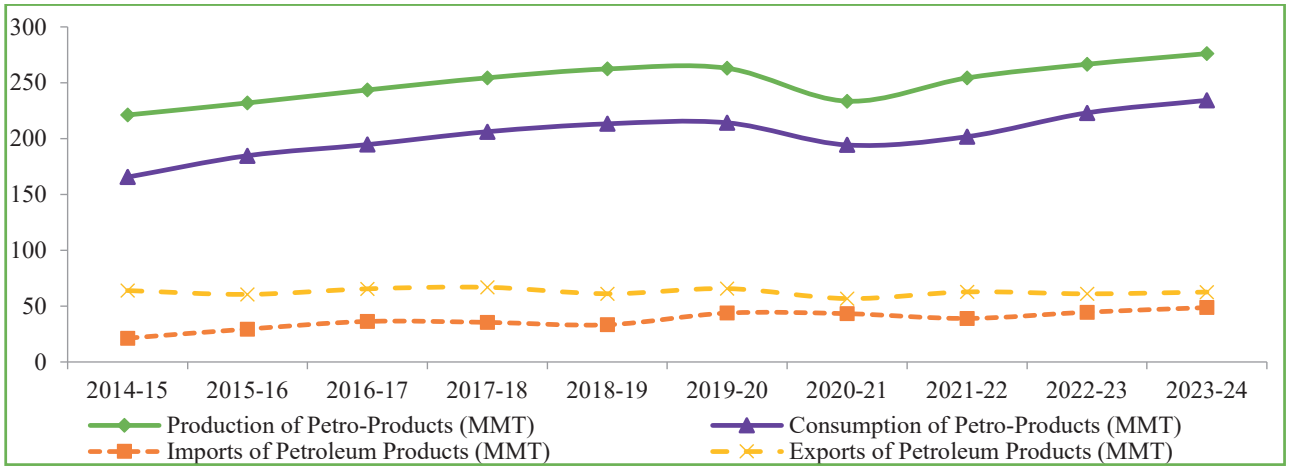
The trend in production, consumption and Import of natural gas from the year 2013-14 to 2022-23 have been depicted as follows: -

Table I.2: Trends of Petroleum Products Production, Consumption and Imports

Year	Production of Petro-Products (MMT)	% Growth in Production of Petro-Products	Consumption of Petro-Products (MMT)	% Growth in Consumption of Petro-Products	Imports of Petroleum Products (MMT)	% Growth in Imports of Petroleum Products	Exports of Petroleum Products (MMT)	% Growth in Export of Petroleum Products
2014-15	221.14	0.17	165.52	4.49	21.30	27.57	63.93	-5.79
2015-16	231.92	4.88	184.67	11.57	29.46	38.28	60.54	-5.31
2016-17	243.55	5.01	194.60	5.37	36.29	23.19	65.51	8.22
2017-18	254.40	4.46	206.17	5.94	35.46	-2.28	66.83	2.01
2018-19	262.36	3.13	213.22	3.42	33.35	-5.96	61.10	-8.58
2019-20	262.94	0.22	214.13	0.43	43.79	31.30	65.69	7.51
2020-21	233.51	-11.19	194.30	-9.26	43.25	-1.23	56.77	-13.57
2021-22	254.31	8.90	201.70	3.81	39.02	-9.78	62.75	10.54
2022-23	266.54	4.81	223.02	10.57	44.60	14.30	61.01	-2.77
2023-24	**276.09**	**3.58**	**234.26**	**5.04**	**48.69**	**9.18**	**62.59**	**2.59**
CAGR 2014-15 to 2023-24 (%)		2.50		3.93		9.62		-0.23

Note: % Growth based on the previous Financial Year P: Provisional MMT: Million Metric Tonne

Figure I.2: Production, consumption and imports of Petroleum Products



Liquefied Petroleum Gas: Liquefied Petroleum Gas (LPG) known for its high heating value, making it a preferred option for various heating applications. LPG is most commonly used among domestic consumers for meeting their cooking and heating requirements. Beyond domestic use, LPG plays an essential role, as a vital raw material in chemical and metallurgical plants, facilitating diverse industrial processes. Furthermore, its application is also found in the transport sector, highlighting its versatility and widespread utility.

The production of domestic LPG was 12.78 MMT in 2023-24. India's LPG import increased from 8.31 MMT in 2014-15 to 18.51 MMT in 2023-24, exhibiting an9.3% increase annually. This escalation in import is driven by the growing demand for LPG leading to an increase in import dependency. The increasing dependency on imported LPG significantly influences the pricing dynamics of LPG in the country. The Government launched PAHAL (PratyakshHanstantritLabh) or Direct Benefit Transfer of LPG (DBTL) scheme in 2014 to address the rising price of domestic LPG. Under this scheme, LPG cylinders (14.2 kg) for domestic consumers are sold at non-subsidised prices, and the applicable subsidy is directly transferred into the bank accounts of consumers. This approach ensures that consumers receive the financial benefit without distorting the market price of LPG.

Naphtha: It is typically used in industries such as petrochemicals, solvents, fuel blending. It is also used as a raw material to produce gasoline, plastics, and chemicals.The production of domestic Naphtha was 18.74 MMT in 2023-24. Additionally, India's export in naphtha was at 7.01 MMT in 2014-15 which reduced to 5.28 MMT in 2023-24.

Kerosene: It, a flammable hydrocarbon liquid, serves as fuel for lamps, heaters, and jet engines, as well as a solvent for greases and insecticides. The households consume about 80 percent of the total kerosene. In the last seven years, there is a substantial drop in the production of kerosene in the country. This is because of the alternative choice for sources of energy by individuals. The PM UJJWALA Scheme was a catalyst in reducing the production of kerosene by substituting its usage with LPG in the domestic sector.The production of domestic Kerosene was 0.98 MMT in 2023-24.

Aviation Turbine Fuel: Aviation Turbine Fuel (ATF) are petroleum-based fuels, or petroleum and synthetic fuel blends, also known as jet fuel, is used to power aircraft. It is also utilised as a hydraulic fluid in engine control systems and for cooling specific fuel system components. ATF production surged to 17 MMT in 2023-24, showcasing the rapid growth in nation's air travel sector. It marked a 6.2% increase from the previous year. The advent of COVID-19, resulted in border closure and travel restrictions till 2021-22. The nation experienced a significant decrease of 53.4% in domestic production and 48.7% in exports in 2020-21(as compared to the previous years), Moreover, India became self-sufficient in ATF production and achieved zero percent dependence on ATF imports starting from 2020-21. In 2023-24, India was a key player in the global export market with ATF exports reaching to 8.58 MMT. The aviation sector aims to produce Sustainable Aviation Fuel (SAF) using sugarcane molasses as one of the indigenous feedstocks and technologies. India plans to use 1 percent blending of SAF for its international commercial flights by 2027, which would require around 140 million litres of SAF per year, with an aim to increase this to 2 percent blending by 2028 (PIB, Nov, 2023).

Diesel: Diesel is commonly used to power diesel engines, which are more prevalent in machinery and vehicles. The high energy density makes diesel an efficient choice to power various machinery, demanding heavyduty

performance such as trucks, buses, trains, ships, and some types of generators. This section covers both High-Speed Diesel (HSD) and Light Speed Diesel (LSD).

India's demand for diesel is predominantly met through domestic production, indicating the increased capacity of oilrefineries and self-sufficiency in refined fuel. From 2019-20 onwards, diesel imports have experienced a sharp decline by 65 percent annually, signaling reduced reliance on imported diesel. Diesel production predominantly peaked during the winter season as compared to other months. During winter, the performance of diesel engines diminishes as operating and igniting the cold machinery in low temperatures becomes a challenge, impacting the transportation, agriculture, and industrial sectors.

Petroleum Lubricant: Petroleum-based lubricants are used to reduce the friction between the surfaces. It comes in various forms, including motor oils, gear oils, hydraulic fluids, and greases, and are widely used in automotive, industrial and commercial applications to maintain the efficiency and longevity of the machinery. Domestic production was 1.35 in FY 2023-24. However, Imports of petroleum lubricants were twice the output of domestically produced lubricants, reflecting a heavy reliance on imports to meet the demand. The exports on the other hand remained constant for all the years.

Petroleum Coke: Petroleum coke, also known as pet coke, is used as a carbon source or feedstock in various industrial applications, including cement, iron & steel, power generation, and metal smelting. In 2023-24, 58 percent of the total pet coke available was produced domestically from 2016-17 to 2023-24, imports of pet coke gradually dropped by 3.8 percent each year. Exports in pet coke declined by 37 percent during the same period due to rising demand from industrial sectors and a relatively higher focus on domestic consumption.

Bitumen: Bitumen is primarily used in the construction industry, as a binding agent in the production of asphalt concrete forroad construction and maintenance. It is also utilised in waterproofing products and roofing materials. Increasing import quantity of Bitumenshows a significant reliance on imports to meet the country's bitumen demand over the 10 years. India is the third largest importer of bitumen worldwide, reaching 3.24 MMT in 2023-24 from 0.52 MMT in 2014-15. This surge reflects a notable 22.6% CAGR. However, domestic production has remained similar throughout 2023-24

Petrol: Petrol or gasoline, is widely used as a transportation fuel, though also used in other applications, such as powering small engines, generators, and lawn mowers. Domestic petrol production has increased by continuously over the previous several years. The imports grew by 7.6% CAGR, while the exports declined by 1.9% CAGR at the same time. The decline in exports and increase in both domestic production & imports of petrol shows the urge of the country to fulfil its internal demand.

I.3 Natural Gas:

Natural Gas, plays a significant role in India's energy landscape. Known for its cleaner attributes as compared to coal and petroleum, it has gained prominence in recent times as a possible bridging fuel to minimise Greenhouse Gas Emissions from the Energy Sector. In 2023-24, the gas share in India's primary energy mix was 5.8%. The Government of India (GoI) aims to increase the share of Natural Gas to 15 percent by 2030 as part of the nation's energy transition. In order to achieve this objective, the Government has implemented several measures. These include providing support for compressed biogas, expanding the National Gas Grid pipeline infrastructure, expanding the city gas distribution network, and allocating Liquefied Natural Gas (LNG) regasification terminals. . Total consumption of natural gas in 2023-24 stands at 67.51 BCM which is 12.6% higher than the consumption during the 2022-23 (59.97 BCM). Consumption of Natural gas for energy purpose as fuel stand at 63.8% against 36.2% for non-energy purpose as feedstock. The Fertilizer industry consumes the largest share of natural gas (30.6%) followed by the CGD sector (19.6%), power generation (13.2%), refinery (8.5%), and Miscellaneous (15.9%). In terms of production, India relies on both domestic sources and imports to meet its growing demand. Domestic production primarily occurs in gas fields located across various regions, including the Krishna-Godavari Basin, Mumbai High, and Assam. The estimated balance recoverable reserves of Natural Gas in India as of 1stApril 2024, stood at 1094.2 Billion Cubic Metres (BCM). Natural gas domestic production has grown by 1% every year in the last 10 years. In order to increase domestic production, natural gas infrastructure encompasses a network of pipelines, LNG terminals, and storage facilities. The country has been steadily expanding its pipeline network to transport gas from production sites to consumption centres, facilitating efficient distribution across the nation. Additionally, LNG terminals, located mainly on the western and eastern coasts, serve as crucial entry points for imported natural gas, supporting India's energy needs.

However, despite efforts to enhance domestic production, India still imports a considerable amount of natural gas (47.1% of the total gas supply in FY 2023-24), primarily through LNG terminals. Globally, India is the 4thlargest importer of LNG. Import of natural gas (LNG) during 2023-24 was 31.80 BCM valued at ₹1,10,994 crore against import of 26.30 BCM valued at ₹ 1,37,210 crore in 2022-23 which is higher by 20.9% in quantity terms but lower by 19.1% in value terms vis-a-vis 2022-23.

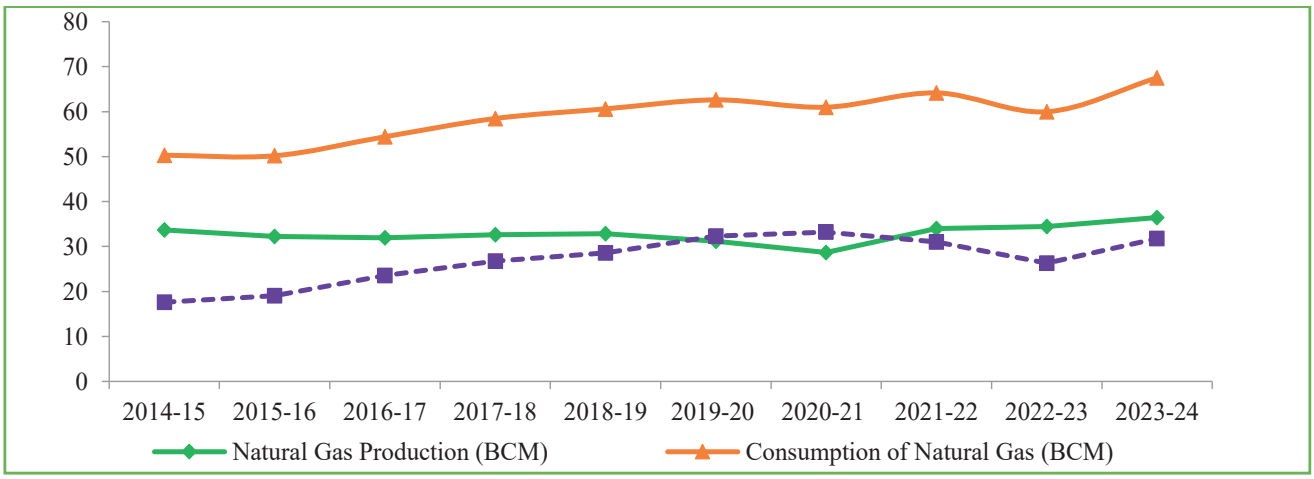
The trend in production, consumption and Import of natural gas from the year 2014-15 to 2023-24 have been depicted as follows: -

Table-I.3: Trends of Natural Gas Production, Consumption and Imports

Year	Natural Gas Production (BCM)	% Growth in Natural Gas Production	Consumption of Natural Gas (BCM)	% Growth in Consumption of Natural Gas	Imports of LNG (BCM)	% Growth in Imports of LNG
2014-15	33.66	-4.94	50.30	-2.94	17.61	2.06
2015-16	32.25	-4.18	50.18	-0.24	19.05	8.19
2016-17	31.90	-1.09	54.41	8.43	23.56	23.69
2017-18	32.65	2.36	58.47	7.45	26.73	13.46
2018-19	32.87	0.69	60.60	3.66	28.55	6.78
2019-20	31.18	-5.14	62.61	3.31	32.35	13.33
2020-21	28.67	-8.05	60.98	-2.60	33.20	2.61
2021-22	34.02	18.66	64.16	5.21	31.03	-6.54
2022-23	34.45	1.25	59.97	-6.53	26.30	-15.22
2023-24	**36.44**	**5.77**	**67.51**	**12.58**	**31.80**	**20.87**
CAGR 2014-15 to 2023-24 (%)		0.89		3.32		6.79

Note: % Growth based on the previous Financial Year P: Provisional BCM: Billion Cubic Metre

Figure I.3: Production, Consumption and Imports of Natural Gas



I.4 Foreign Direct Investment Inflows

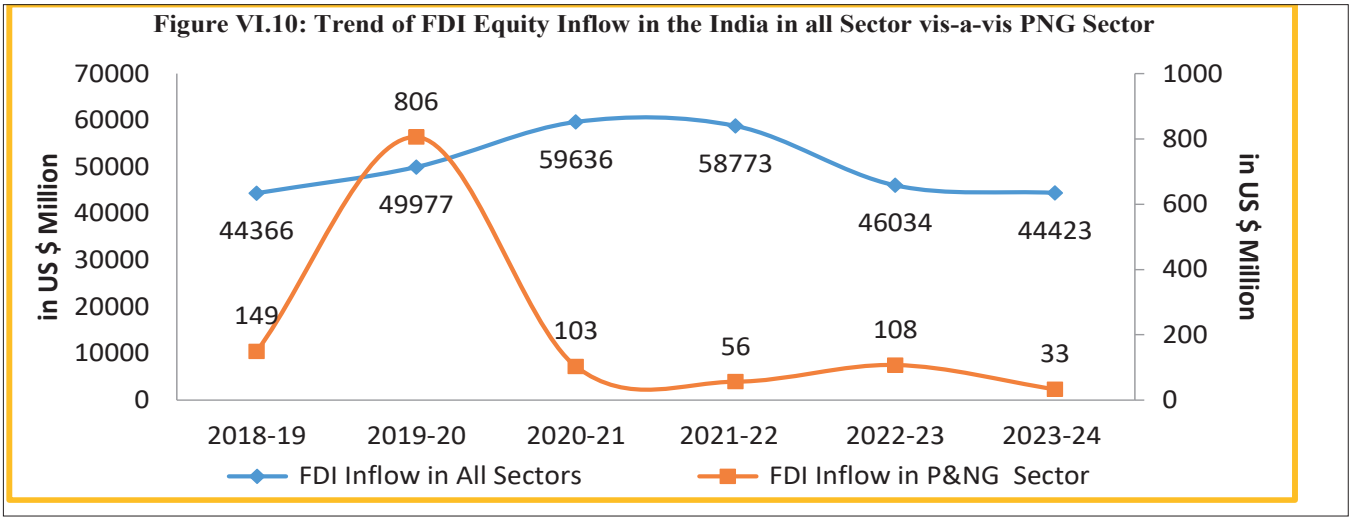
The Government of India permits Foreign Direct Investment (FDI) across the hydrocarbon value chain covering the upstream, downstream and midstream sectors. The present FDI policy for petroleum & natural gas sector allows 100% automatic route for exploration and production & refining for private companies (49% for PSUs' on automatic route without any disinvestment or dilution of domestic equity in the existing PSUs), marketing of petroleum products, pipelines, storage and LNG regasification infrastructure and all related services, subject to existing sectoral policy and regulatory framework in the oil and gas sector. However, Foreign investment up to 100% under the automatic route is allowed for Petroleum refining by the Public Sector Undertakings (PSU), without any disinvestment or dilution of domestic equity in the existing PSUs in case an 'in-principle' approval for strategic disinvestment of a PSU has been granted by the Government. Exploration and Production of oil and gas are capital intensive and high-risk activities requiring use of expensive state-of-the-art technologies and best management practices. Accordingly, the Government is encouraging participation of the private sector, including foreign companies in exploration, production and transportation network for petroleum and natural gas, in order to supplement the domestic investment as well as the efforts of the national oil companies in meeting the rising demand of oil and gas and reducing import dependence. 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 Government of India has reviewed the extant FDI policy for curbing opportunistic takeovers/ acquisitions of Indian companies due to the current COVID-19 pandemic and amended para 3.1.1 of extant FDI policy as contained in Consolidated FDI Policy, 2017 as under:

(a) A non-resident entity can invest in India, subject to the FDI Policy except in those sectors/activities which are prohibited. However, an entity of a country, which shares land border with India or where the beneficial owner of an investment into India is situated in or is a citizen of any such country, can invest only under the Government route. Further, a citizen of Pakistan or an entity incorporated in Pakistan can invest, only under the Government route, in sectors/activities other than defense, space, atomic energy and sectors/ activities prohibited for foreign investment.

(b) In the event of the transfer of ownership of any existing or future FDI in an entity in India, directly or indirectly, resulting in the beneficial ownership falling within the restriction/purview of the para 3.1.1(a), such subsequent change in beneficial ownership will also require Government approval.

During the year 2023-24, FDI inflow received was 33 USD Million in the P&NG Sector contributing 0.1% of total FDI inflow (70,954 USD million) in the economy. The trend in FDI Inflows in India the year 2018-19 to 2023-24 have been depicted as follows: -

Figure I.4: Trend in FDI Inflows in India (in USD Million)



I.5: Indian Economy-Selected Indicators

Indicator	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.Gross Domestic Product :						
(i) At current prices (₹ Crore)	1,88,99,668	2,01,03,593	1,98,29,927	2,34,71,012	2,72,40,712	2,96,57,745
(ii) At constant prices (₹ Crore)	1,39,92,914	1,45,34,641	1,36,87,118	1,49,25,840	1,60,06,425	1,71,78,641
2. GVA at Basic Price :						
(i) At current prices (₹ Crore)	1,71,75,128	1,83,81,117	1,81,88,780	2,14,38,883	2,47,42,871	2,67,12,195
(ii) At constant prices (₹ Crore)	1,27,33,798	1,32,36,100	1,26,81,482	1,37,98,025	1,47,64,840	1,57,82,157
3. Per Capita NNI (Population in Million) :						
(i) At current prices (₹)	1,25,946	1,32,341	1,27,244	1,50,906	1,69,496	1,84,205
(ii) At constant prices (₹)	92,133	94,420	86,034	94,054	99,404	1,06,744
4. Foreign Exchange Reserves :	**28,55,882**	**36,02,155**	**42,18,953**	**45,98,818**	**47,54,264**	**53,91,255**
(i) Gold (₹ Crore)	1,59,585	2,30,527	2,47,723	3,22,213	3,71,500	4,39,319
(ii) SDR (₹ Crore)	10,076	10,800	10,864	1,43,052	1,51,164	1,51,223
(iii) Foreign Currency Assets (₹ Crore)	26,65,564	33,33,815	39,24,168	40,94,565	41,89,132	47,61,844
(iv) Reserve Tranch Position (₹ Crore)	20,657	27,013	36,198	38,988	42,468	38,869
5. Foreign Trade :						
(i) Import (₹ Crore)	35,94,675	33,60,954	29,15,958	45,72,775	57,49,801	55,92,877
(ii) Export(₹ Crore)	23,07,726	22,19,854	21,59,043	31,47,021	36,21,550	36,19,292
(iii) Balance of Trade (₹ Crore)	-12,86,948	-11,41,100	-7,56,914	-14,25,753	-21,13,328	-19,73,585
6. Index:						
(i) Index of Industrial Production (2011-12=100)	130.1	129.0	118.1	131.6	138.4	159.2
(ii) Wholesale Price Index (2011-12=100)	119.8	121.8	123.4	139.4	152.5	151.4
(iii) Eight Core Industries Index (Base 2011-12=100)	131.2	131.6	123.2	136.1	146.6	157.8
7. Energy Generation (Gross) :						
(i) Coal & Lignite (MMT)	773	771	754	826	938	997
(ii) Natural Gas (BCM)	33	31	29	34	34	36
(iii) Crude Oil (MMT)	34	32	30	30	29	29
(iv) Petroleum Products (MMT)	262	263	234	254	267	276
(v) Electricity Generation (Thousand GWh)	1585	1623	1598	1694	1,844	1,739

P:Provisional

Source: Oil Companies, CEA,Ministry of Power, Ministry of Coal, MoSPI, RBI and Labour Bureau, Govt. of India,

I.6: Trends in Indian Petroleum Industry at a Glance

Item	Unit	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Production							
(i) Crude Oil	MMT	34.20	32.17	30.49	29.69	29.18	29.36
(ii) Natural Gas	BCM	32.87	31.18	28.67	34.02	34.45	36.44
(iii) Petroleum Products	MMT	262.36	262.94	233.51	254.31	266.54	276.09
2. Consumption							
(i) Crude Oil (in terms of refinery crude processed)	MMT	257.20	254.39	221.77	241.70	255.23	261.55
(ii) Natural Gas (including LNG)	BCM	60.60	62.61	60.98	64.16	59.97	67.51
(iii) Petroleum Products	MMT	213.22	214.13	194.30	201.70	223.02	234.26
3. Reserves (Balance Recoverable) as on 31st March							
(i) Crude Oil	MMT	618.95	608.28	591.92	653.02	669.47	671.40
(ii) Natural Gas	BCM	1384.06	1373.55	1372.37	1149.46	1141.73	1094.19
4. Imports & Exports							
(i) Gross Imports :							
(a) Qty : Crude Oil	MMT	226.50	226.95	196.46	212.38	232.70	234.26
LNG	MMT	21.54	24.42	25.05	23.42	19.85	24.00
Pol. Products	MMT	33.35	43.79	43.25	39.02	44.60	48.69
Total (a)	MMT	281.39	295.16	264.76	274.82	297.15	306.95
(b) Value: Crude Oil	₹ Billion	7831.83	7170.01	4597.79	9012.62	12603.72	11051.76
LNG	₹ Billion	738.88	684.67	583.29	1005.21	1372.10	1109.94
Pol. Products	₹ Billion	1136.65	1257.42	1094.30	1768.35	2158.54	1900.69
Total (b)	₹ Billion	9707.36	9112.09	6275.37	11786.18	16134.35	14062.38
(ii) Exports :							
(a) Qty : Pol. Products	MMT	61.10	65.69	56.77	62.75	61.01	62.59
(b) Value: Pol. Products	₹ Billion	2676.97	2540.18	1571.68	3318.01	4587.29	3947.23
(iii) Net Imports :							
(a) Qty : Crude Oil	MMT	226.50	226.95	196.46	212.38	232.70	234.26
LNG	MMT	21.54	24.42	25.05	23.42	19.85	24.00
Pol. Products	MMT	-27.75	-21.90	-13.52	-23.74	-16.42	-13.90
Total (a)	MMT	220.29	229.47	207.99	212.06	236.14	244.36
(b) Value: Crude Oil	₹ Billion	7831.83	7170.01	4597.79	9012.62	12603.72	11051.76
LNG	₹ Billion	738.88	684.67	583.29	1005.21	1372.10	1109.94
Pol. Products	₹ Billion	-1540.31	-1282.76	-477.38	-1549.66	-2428.75	-2046.55
Total (b)	₹ Billion	7030.40	6571.92	4703.69	8468.17	11547.07	10115.15
(iv) Unit Value of Crude oil imports(gross) [iii (b)/iii(a)%]	**₹/MT**	**34577.97**	**31592.26**	**23403.06**	**42435.98**	**54162.85**	**47177.00**
(v) India's Total Imports	**₹ Billion**	**35946.75**	**33609.54**	**29159.58**	**45727.75**	**57498.01**	**55928.77**
(vi) India's Total Exports	**₹ Billion**	**23077.26**	**22198.54**	**21590.43**	**31470.21**	**36215.50**	**36192.92**
(vii) Petroleum Imports as % of India's total Imports	**%**	**27.00**	**27.11**	**21.52**	**25.77**	**28.06**	**25.14**
(viii) Petroleum Exports as % of India's total Exports	**%**	**11.60**	**11.44**	**7.28**	**10.54**	**12.67**	**10.91**
5. Contribution of Oil Sector to Centre/State Resources							
(i) Royalty from Oil & Gas	₹ Crore	19433	17484	10768	19164	27736	21816
(ii) Oil Development Cess	₹ Crore	17741	14789	10676	19214	21445	19580
(iii) Excise & Custom duties	₹ Crore	230405	245985	386484	374728	302561	286818
(iv) Sales Tax	₹ Crore	201265	200493	202937	256248	288086	292716
(v) GST	₹ Crore	7961	7345	6121	11017	13188	12289
(vi) CPSEs Dividend Paid	₹ Crore	30323	25685	22227	46323	31428	38616
(vii) CPSEs Gross Turnover	₹ Crore	1603649	1512196	1353143	1950971	2520929	2359289
(viii) CPSEs Net Profit	₹ Crore	69763	26927	74199	106403	65417	145618

P: Provisional

Source: Oil & Gas Comapanies, PPAC, RBI, CBIC and Economic Survey

I.7: Gross Value Added by Economic Activity at Current Prices

(Value in ₹ crore)

Sectors		2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)		(2)	(3)	(4)	(5)	(6)	(7)
1.(a)	Petroleum & Natural Gas	95817	112579	108280	74012	118238	142753
(b)	Manufacture of coke and refined petroleum products	201980	156019	125114	163675	204185	202482
	Total	**297797**	**268598**	**233394**	**237687**	**322422**	**345234**
2.	Railways	116584	123596	135376	129709	145500	163878
3.	Transport by other means	617201	665683	704468	547310	824289	931054
4.	Storage	16194	18597	19796	20962	21586	23936
5.	"Communication & Services related to broadcasting"	247549	258179	292918	318734	374447	436804
6.	Electricity	332024	339857	382689	374543	422023	433594
7.	Gas	23885	27941	29441	29376	41412	34917
8.	Water Supply	41927	49659	55751	59301	70729	85107
9.	Other Utility Services	27881	32002	35119	37559	43628	50591
10.	**GVA**	**15505665**	**17175128**	**18381117**	**18210997**	**21635584**	**24659041**
11.	**Contribution of P& NG in total GVA (%)**	**1.92**	**1.56**	**1.27**	**1.31**	**1.49**	**1.40**
				Growth Rate (%)			
1.(a)	Petroleum & Natural Gas	-17.02	17.49	-3.82	-31.65	59.76	20.73
(b)	Manufacture of coke and refined petroleum products	12.13	-22.76	-19.81	30.82	24.75	-0.83
	Total	**0.74**	**-9.81**	**-13.11**	**1.84**	**35.65**	**7.08**
2.	Railways	9.18	6.01	9.53	-4.19	12.17	12.63
3.	Transport by other means	8.64	7.86	5.83	-22.31	50.61	12.95
4.	Storage	117.60	14.84	6.45	5.89	2.97	10.89
5.	"Communication & Services related to broadcasting"	-0.10	4.29	13.46	8.81	17.48	16.65
6.	Electricity	21.29	2.36	12.60	-2.13	12.68	2.74
7.	Gas	24.95	16.98	5.37	-0.22	40.97	-15.68
8.	Water Supply	4.17	18.44	12.27	6.37	19.27	20.33
9.	Other Utility Services	23.31	14.78	9.74	6.95	16.16	15.96
10.	**GVA**	**11.03**	**10.77**	**7.02**	**-0.93**	**18.81**	**13.97**

P: Provisional

Source: National Statistical Office, MoSPI

I.8: Gross Value Added at by Economic Activity at Constant Price

(Value in ₹ crore)

Sectors		2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)		(2)	(3)	(4)	(5)	(6)	(7)
1.(a)	Petroleum & Natural Gas	131373	121891	127115	105332	107190	90124
(b)	Manufacture of coke and refined petroleum products	223738	152497	126381	184015	161401	123631
	Total	**355111**	**274389**	**253496**	**289347**	**268592**	**213755**
2.	Railways	87886	91350	82303	65754	79828	94504
3.	Transport by other means	501039	528628	545690	414833	529736	564411
4.	Storage	12976	13784	14021	13857	18128	17380
5.	Communication & Services related to broadcasting	198344	197215	219178	220967	237909	262710
6.	Electricity	207882	221446	224576	212862	234951	259386
7.	Gas	15029	16863	16450	15394	16613	14753
8.	Water Supply	28973	33184	35560	35627	40276	45439
9.	Other Utility Services	20765	22655	24212	24330	26126	28395
10.	**GVA**	**12034171**	**12733798**	**13236100**	**12687345**	**13876840**	**14804901**
11.	**Contribution of P& NG in total GVA (%)**	**2.95**	**2.15**	**1.92**	**2.28**	**1.94**	**1.44**
	Growth Rate (%)						
1.(a)	Petroleum & Natural Gas	-16.92	-7.22	4.29	-17.14	1.76	-15.92
(b)	Manufacture of coke and refined petroleum products	0.71	-31.84	-17.13	45.60	-12.29	-23.40
	Total	**-6.62**	**-22.73**	**-7.61**	**14.14**	**-7.17**	**-20.42**
2.	Railways	6.97	3.94	-9.90	-20.11	21.40	18.39
3.	Transport by other means	7.77	5.51	3.23	-23.98	27.70	6.55
4.	Storage	112.71	6.23	1.72	-1.17	30.82	-4.13
5.	Communication & Services related to broadcasting	-2.72	-0.57	11.14	0.82	7.67	10.42
6.	Electricity	12.20	6.52	1.41	-5.22	10.38	10.40
7.	Gas	6.26	12.20	-2.45	-6.42	7.92	-11.20
8.	Water Supply	0.56	14.53	7.16	0.19	13.05	12.82
9.	Other Utility Services	13.71	9.10	6.87	0.49	7.38	8.69
10.	**GVA**	**6.23**	**5.81**	**3.94**	**-4.15**	**9.38**	**6.69**

P: Provisional

Source: National Statistical Office, MoSPI

CHAPTER-II



Exploration & Production-Crude Oil & Natural Gas

Chapter Highlights



With a view to explore oil and gas fields a total of 741 wells (of which 82.2% are development wells and 17.8% are exploratory wells) with **15.38 lakh** Metreage have been drilled by Oil & Gas Companies during 2023-24.

Balance recoverable reserves of crude oil stands at 671.4 Million Metric Tonnes (MMT) as on 01.04.2024, out of which **253.9 MMT (37.8%)** and **417.5 MMT (62.2%)** are located in offshore and onshore respectively.





Balance recoverable reserves of natural gas as on 01.04.2024 was 1094.2 BCM, out of which **605.6 BCM (55.3%)** and **488.6 BCM (44.7%)** are located in offshore and onshore respectively.

Crude oil production increased to 29.36 MMT in 2023-24 from **29.18 MMT** in 2022-23, showing an incremental growth of 0.6%. Out of the produced **29.36 MMT**, larger share i.e. 51.2% (15.03 MMT) is from the offshore blocks.





Out of total crude oil production of 29.36 MMT in 2023-24, **65.4% (19.21 MMT)** is from ONGC (nomination), **11.4% (3.34 MMT)** from OIL (nomination) and the remaining **23.2% (6.80 MMT)** is from PSC/RSC regime.

Natural Gas production during FY 2023-24 is 36.44 Billion Cubic Meters (BCM), which is **5.8%** higher than **34.45 BCM** produced in 2022-23. Out of **36.44 BCM**, larger share i.e. 71% (25.87 BCM) is from the offshore blocks.





Out of total natural gas production of 36.44 BCM in 2023-24, **53.0% (19.32 BCM)** is from ONGC (nomination), **8.5% (3.09 BCM)** from OIL (nomination) and remaining **38.5% (14.03 BCM)** from PSC/RSC/CBM regime.

Oil and Gas production from assets abroad is **19.55 MMToE** during 2023-24, which is 30.7% of the domestic oil and gas production.



INTRODUCTION

Sedimentary Basins in India: India has 26 sedimentary basins covering an area of 3.36 million square kilometres. The onland sedimentary basins of India have an acreage of about 1.63 million square kilometres (48.5%) and and Offshore area covers 1.73 Million Sq. Km. As of now, 72.8% of the basinal areas have been appraised.

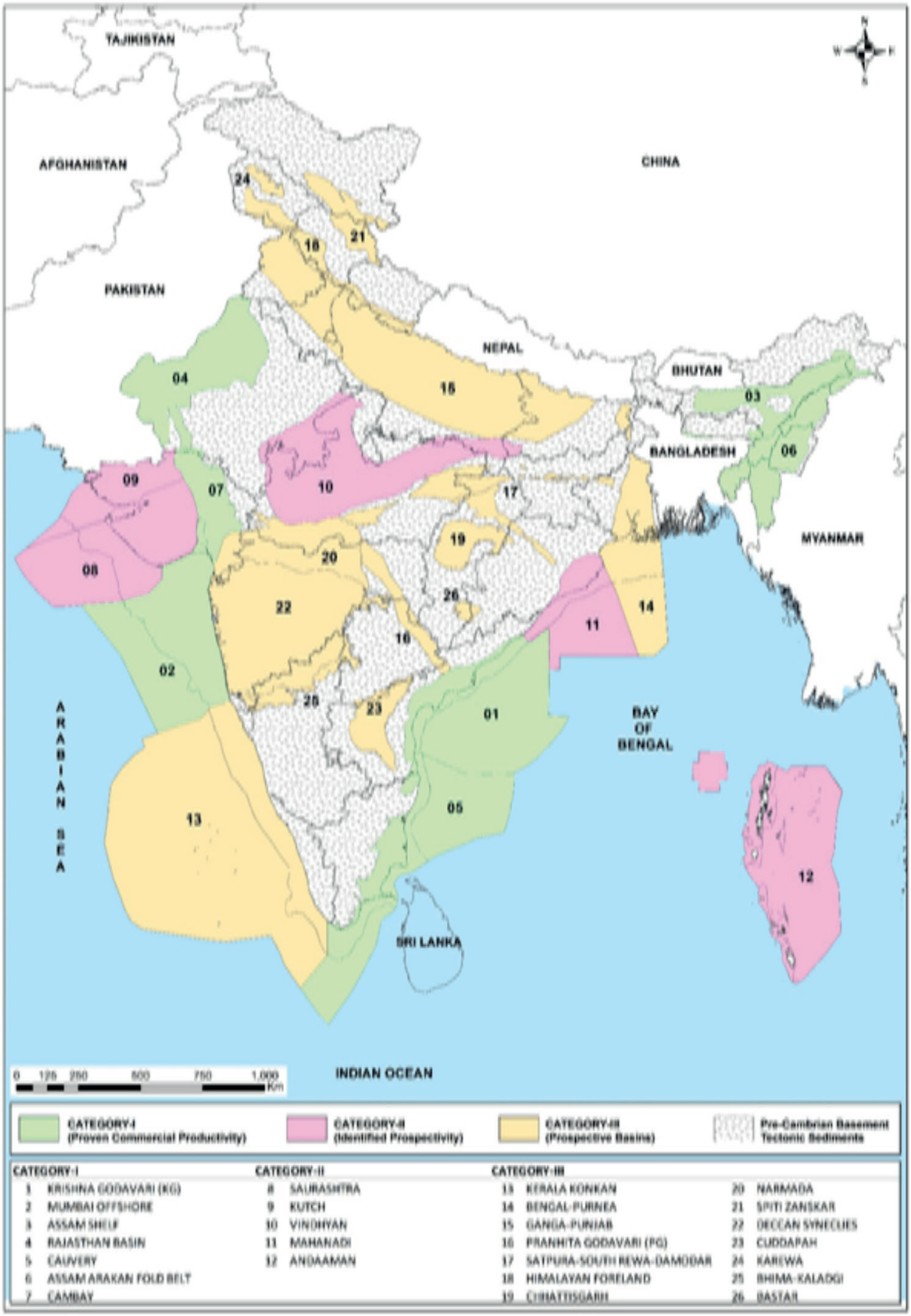
These 26 sedimentary basins mapped using latest GIS tools and categorized into three based on conventional hydrocarbon resources as below:

- **Category I:** Basins with reserves being produced and exploited.
- **Category II:** Basins with contingent resources to be developed and monetized (discovered but awaiting development).
- **Category III:** Basins with only prospective resources to be explored and discovered.

The grouping of basins under the category is dynamic. For Ex: A category III basins can be upgraded to II in case there is significant hydrocarbon resource established through discovery.

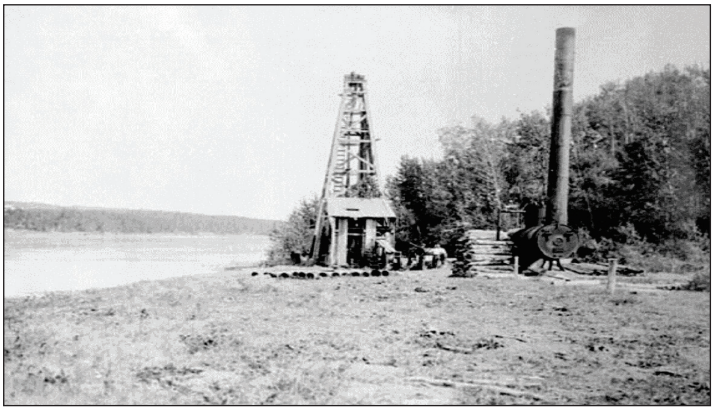
Categories of Indian Sedimentary Basins			
Type of Basins	**Area (Sq. Km.)**	**Hydrocarbons Prospectivity**	**Basins/ Region**
Category I (7 Basins)	9,98,325	Established commercial production	Cambay, Assam Shelf, Mumbai offshore, Krishna Godavari, Cauvery, Assam Arakan Fold Belt and Rajasthan
Category II (5 Basins)	7,80,974	Discovered accumulation of hydrocarbons but no commercial production as yet	Kutch, Mahanadi-NEC & Andaman-Nicobar, Vindhyan, Saurashtra
Category III (14 Basins)	15,86,150	No known accumulation of hydrocarbon yet. Prospective by analogy	Himalayan Foreland, Ganga, Kerala-Konkan-Lakshadweep, Bengal, Karewa, Spiti-Zanskar, Satpura-South RewaDamodar, Narmada, Decan Syneclise, Bhima-Kaladgi, Cuddapah, Pranhita-Godavari, Bastar, Chhattisgarh
Total	**33,65,449**		

INDIAN SEDIMENTARY BASIN

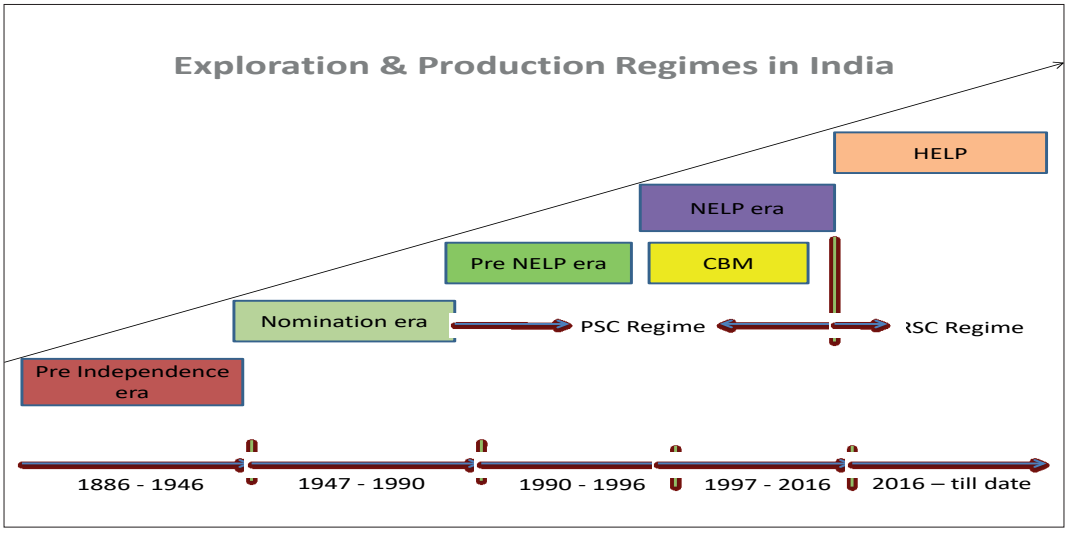


CATEGORY-I		CATEGORY-II		CATEGORY-III			
1	KRISHNA GODAVARI (KG)	8	SAURASHTRA	13	KERALA KONKAN	20	NARMADA
2	MUMBAI OFFSHORE	9	KUTCH	14	BENGAL-PURNEA	21	SPITI ZANSKAR
3	ASSAM SHELF	10	VINDHYAN	15	GANGA-PUNJAB	22	DECCAN SYNECLIES
4	RAJASTHAN BASIN	11	MAHANADI	16	PRANHITA GODAVARI (PG)	23	CUDDAPAH
5	CAUVERY	12	ANDAAMAN	17	SATPURA-SOUTH REWA-DAMODAR	24	KAREWA
6	ASSAM ARAKAN FOLD BELT			18	HIMALAYAN FORELAND	25	BHIMA-KALADGI
7	CAMBAY			19	CHHATTISGARH	26	BASTAR

Oil and Gas Exploration in India: Historical Development and Regulatory Regime



The history of oil and gas exploration in India traces back to the 19th century, beginning in Assam, located in the northeastern part of the country. 1867 the earliest oil discovery occurred in the Makum area near Margherita, where McKillop, Stewart Co. drilled the first successful well, just nine years after Drake's landmark well in Titusville, Pennsylvania, in 1859. Several more wells were subsequently drilled in the Makum and Namdang areas of Margherita, producing small amounts of crude oil over the following two decades. In significant step forward, the Assam Railway Trading Co. Ltd, which was engaged in timber, coal, tea, and railway construction, drilled the first commercial oil well, Digboi-1. Development of the Digboi oil field continued extensively, and efforts to identify new oil reserves persisted throughout the pre-independence period.



Pre-Independence Era: In 1889 the Assam Railways and Trading Company (AR&T Co. Ltd.) took a crucial step by digging a well at the Digboi field. ***In 1901***, Asia's first Oil Refinery was set up at Digboi, which continues to operate even today, holding the distinction of being the world's oldest continuously operating refinery.

Nomination era: In 1948, the Geological Survey of India (GSI) embarked on a geophysical survey in the Cambay area.

ONGC
ENERGY: Now AND Next

In 1955, the Oil and Natural Gas Directorate was established as a subordinate office under the Ministry of Natural Resources and Scientific Research. In 1956, the Directorate's status was upgraded to a Commission. ONGC's mandate was clearly defined: to plan, organize, and execute programs for petroleum resource development, production, and sale of petroleum products. In 1957, ONGC achieved a significant breakthrough within a year of its formation by discovering oil at Cambay. ***In 1962,*** ONGC initiated an experimental seismic survey in the Gulf of Cambay, a crucial first step in unlocking the potential beneath the ocean floor. ***In 1972-73,*** detailed seismic surveys led by ONGC resulting India's biggest commercial oil discovery – the Bombay High field.

ऑयल इंडिया
OIL INDIA

In February 1959, Oil India Limited (OIL) was incorporated (as a joint venture with a two-thirds ownership by Assam Oil Company (AOC) /Burmah Oil Company (BOC) and one-third by the Government of India) to expedite exploration and development activities in Assam's Naharkatiya and Moran fields and take over BOC's Assam operations. ***During 1979-89***, OIL further expanded into the Andaman offshore and Rajasthan onshore.

Till the end of 1970s, Indian E&P industry was dominated by the two National Oil Companies (NOCs) ONGC and OIL to whom PELs were granted on nomination basis. Exploration was primarily confined to onland and shallow offshore areas. By the end of the 1980s, the collective effort by ONGC and OIL had resulted in the drilling of nearly 3,100 wells, a testament to their unwavering commitment to India's energy security. ONGC successfully identified promising prospects in the Cauvery and Krishna Godavari (KG) basins.

Pre-NELP Exploration Blocks: It was realised that the NOC's faced constraints in terms of technology, expertise, and investment capital needed for deeper offshore exploration. Recognizing these limitations and to attract foreign investment, technology and expertise, exploration blocks were offered (a mix of offshore and onshore) through a bidding process. These bidding rounds, known as Pre-NELP exploration rounds, aimed to foster collaboration between Indian NOCs and international players. 28 Exploration blocks were awarded to private companies between 1980 and prior to implementation of NELP where ONGC and OIL had the rights for participation in the blocks after hydrocarbon discoveries.

Pre-NELP Discovered Field Round: Government offered Petroleum Mining Lease (PML) of small/ medium sized discovered fields (proven reserves were discovered by ONGC and OIL) to the private sector in August 1992. Production Sharing Contracts (PSCs) awarded during 1991-1993 had the distinctive feature of operators as private companies with ONGC/ OIL as having participating interest. These rounds received overwhelming response from various private E&P operators. Government of India has signed 28 contracts under Pre-NELP Discovered (Small and Medium size fields) regime.

Meanwhile the need was felt to have an appropriate agency to regulate and oversee the upstream activities in the petroleum and natural gas sector and advise the Government in these areas. Accordingly, in 1993, the Directorate General of Hydrocarbons (DGH) was established under the administrative control of Ministry of Petroleum and Natural Gas (MoPNG) by Government of India's Resolution dated 08.04.1993. The objective of setting up of DGH was to promote sound management of the Indian oil and natural gas resources having a balanced regard for environment, safety, technological and economic aspects of petroleum activity.

New Exploration Licensing Policy (NELP): In 1997, India's New Exploration Licensing Policy (NELP) was introduced to boost domestic oil and gas production. This policy aimed to attract private and foreign investment through competitive bidding, promoting technological advancements and enhancing geological understanding of India's basins. NELP fostered a level playing field for both public and private companies, allowing 100% FDI and offering globally competitive terms under open bidding. NELP successfully opened the Indian E&P sector to private and foreign players Nine rounds of bidding were conducted under NELP, resulting in the signing of production sharing contracts for 254 exploration blocks. This period also witnessed the commercial opening of two major basins: Rajasthan and Krishna-Godavari. Round wise details of NELP bid round are as illustrated below:

NELP Bid Rounds

Round	Launch Year	Signing Year	PSC Signed
NELP-I	1999	2000	24
NELP-II	2000	2001	23
NELP-III	2002	2003	23
NELP-IV	2003	2004	20
NELP-V	2005	2005	20
NELP-VI	2006	2007	52
NELP-VII	2007	2008	41
NELP-VIII	2009	2010	32
NELP-IX	2010	2012	19

Revenue Sharing Contract (RSC): In recent years, the domestic upstream sector has witnessed substantial policy reforms and progressive decisions. As part of a major initiative to boost the upstream hydrocarbon sector, E &P industry has transitioned from Production Sharing Contracts (PSCs) to Revenue Sharing Contracts (RSCs). This strategic shift aims to achieve greater transparency, operational flexibility, risk-sharing, and increased investor appeal.

RSCs simplify revenue sharing, reduce bureaucratic complexities, and create a conducive environment for oil and gas exploration. The objective is to enhance efficiency, attract investment, and foster a competitive landscape within India's energy industry.

Accordingly, two major policies formulated to implement the Revenue Sharing Mechanism are :

i. Hydrocarbon Exploration and Licensing Policy (HELP):

In a landmark move to revitalize India's oil and gas exploration sector, the government introduced the Hydrocarbon Exploration Licensing Policy (HELP) on March 30th, 2016. This policy marked a significant shift, transitioning from a Production Sharing mechanism to a Revenue Sharing model. This streamlined approach reduces government intervention in day-to-day operations, fostering a more business-friendly environment (Ease of Doing Business). A key component of HELP is the Open Acreage Licensing (OAL) mechanism which was notified on 30th June, 2017. This empowers exploration companies to select their own blocks, eliminating the need to wait for government-led bidding rounds. The first bid round under OALP was launched in January 2018, and since then, eight successful rounds have been conducted within a six-year period. These eight rounds have resulted in the awarding of a staggering 144 exploration blocks, encompassing a vast area of 2,42,057 sq. km., providing a significant boost to E&P activities in India. Bid round-wise details are as below:

OALP Bid Round	Blocks on offer	Number of participants	No. of bids	Area on offer (sq.km.)	Area awarded (sq.km.)
OALP-I	55	9	110	59,282	59,282
OALP-II	14	8	33	29,233	29,233
OALP-III	18+5*	5	42	31,722	29,765
OALP-IV	7	2	8	18,510	18,510
OALP-V	11	3	12	19,789	19,789
OALP-VI	21	3	24	35,346	35,346
OALP-VII	8	4	10	15,766	15,766
OALP-VIII	10	6	13	34,365	34,365
Total	**149**	**40**	**252**	**2,44,014**	**2,42,057**

• *(* No bid received for five CBM Blocks.)*

ii. Discovered Small Field Policy (DSF):

To reduce the import dependency of hydrocarbons & to effectively exploit the untapped established reserves, Marginal Field Policy was announced. The policy was later rechristened to Discovered Small Field Policy (DSF), under the broad policy framework of the new Hydrocarbon Exploration and Licensing Policy (HELP). This allows for early monetization of un-monetized discoveries of National Oil Companies (NOCs). These Contract Areas are awarded under the new regime of Revenue Sharing Model. This policy aims to increase domestic production by unlocking these small fields. The status of DSF I, II & III Contract is as under:

S. No	Status	DSF-I	DSF-II	DSF-III	Total
1	Awarded Contract Area (CA)	30	24	31	85
2	CAs where PML pending	4	3	6	13
3	Contract Area under relinquishment	6	-	-	6
4	Cases under termination / terminated	5	5	0	10
5	RSC to be signed	-	-	1	1
5	**Operational**	**15**	**16**	**24**	**55**



Coal Bed Methane: Coal Bed Methane (CBM) is alternative source for augmenting India's energy resource. India has the fifth largest proven coal reserves in the world and thus holds significant prospects for exploration and exploitation of CBM. The CBM resources in the country are about 92 TCF (2600 BCM) in 12 states of India. CBM blocks were carved out by DGH in close interaction with Ministry of Coal (MoC) & Central Mine Planning and Design Institute (CMPDI), Ranchi. The Government of India formulated Coal Bed Methane (CBM) policy in 1997. About 26,000 sq. km. was identified for CBM exploration in the country. This is essential to attract investments, encourage competition, and increase the development of CBM resources. Till date, 40 CBM blocks were offered in 6 CBM bidding rounds, out of which 15 CBM blocks are operational.

National Data Repository (NDR): National Data Repository (NDR) is a government-sponsored E&P data bank with state-of-the-art facilities and infrastructure for preservation, upkeep and dissemination of data to enable its systematic use for future exploration and development. It has been operational since 28th July 2017. NDR is a turnkey project on Build, Populate and Operate basis. The data that is being stored in NDR includes:

- Seismic Data
- Well & Log Data
- Spatial Data
- Other G&G data like Drilling, Reservoir, Production, Geological, Gravity & Magnetic etc.
- Reports and Documents

Data available in NDR as of 31.03.2024	
2D Seismic data	3.6944 million LKM
3D Seismic data	1.1482 million SKM
Well data	23,616 wells
Well reports	49,704 reports

A secondary data centre (SDC) was established, operational since 4th August, 2018, in Bhubaneswar which works as a Business Continuity/Disaster Recovery Centre of Primary Data Centra of NDR. So, essentially, NDR primarily safeguard national E&P data asset for promoting E&P activities in India. NDR has helped in enhancing prospects of petroleum exploration and facilitating the OALP & DSF Bidding Rounds by improving the availability of quality data. With this action, India has joined the league of countries that have an NDR and can compete effectively in the hydrocarbon exploration and production sector.

Future ready National Data Repository 2.0: The present NDR is slated to be upgraded to Next generation National Data Repository 2.0 (NDR 2.0) with the aim to further improve the data accessibility (downloading), data reporting, submission (Uploading) and enhance storage (for all E&P data types including seismic field data) and to create a cloud enabled database platform.

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)		('000')	(Numbers)		('000')	(Numbers)		('000')
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(A) Oil & Natural Gas Corporation Ltd. (Nomination)[1]									
2018-19	70	356	696	31	116	310	101	472	1006
2019-20	73	344	737	34	106	249	107	450	987
2020-21	68	313	630	36	131	275	104	444	905
2021-22	63	299	617	34	104	266	97	403	883
2022-23	59	335	639	33	100	257	92	435	896
2023-24(P)	**59**	**394**	**764**	**28**	**111**	**296**	**87**	**505**	**1060**
(B) Oil India Limited (Nomination)									
2018-19	17	33	112	0	0	0	17	33	112
2019-20	19	36	118	0	0	0	19	36	118
2020-21	19	34	91	0	0	0	19	34	91
2021-22	19	38	141	0	0	0	19	38	141
2022-23	19	40	131	0	0	0	19	40	131
2023-24(P)	**19**	**56**	**163**	**0**	**0**	**0**	**19**	**56**	**163**
(C) PSC/RSC & CBM Regime									
2018-19	44	151	295	18	33	95	62	184	390
2019-20	26	131	260	11	30	77	37	161	337
2020-21	18	66	154	8	16	53	26	82	206
2021-22	21	119	242	3	6	22	24	125	263
2022-23	12	138	272	2	12	45	14	150	318
2023-24 (P)	**22**	**163**	**265**	**5**	**17**	**51**	**27**	**180**	**316**
Total (A+B+C)									
2018-19	131	540	1103	49	149	404	180	689	1507
2019-20	118	511	1115	45	136	326	163	647	1442
2020-21	105	413	875	44	147	328	149	560	1203
2021-22	103	456	999	37	110	288	140	566	1287
2022-23	90	513	1042	35	112	302	125	625	1344
2023-24 (P)	**100**	**613**	**1192**	**33**	**128**	**346**	**133**	**741**	**1538**

Note: Total may not tally due to rounding off P: Provisional
1. Nomination wells includes Exploratory, Development &Side tracked wells. CBM wells not included
Source: Directorate General of Hydrocarbons

Figure II.1: Share of wells drilled during 2023-24 (%)

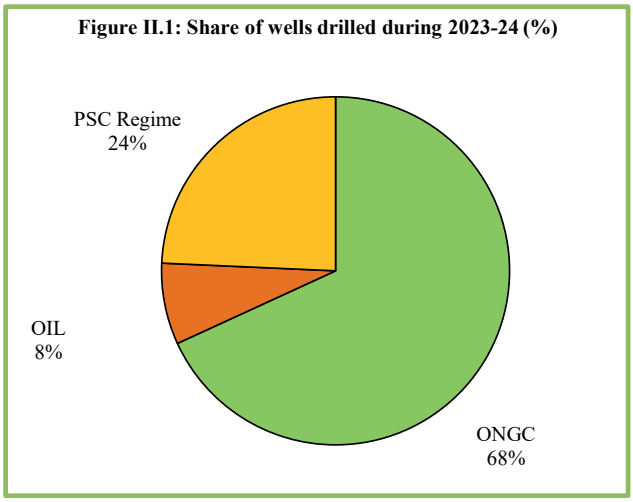
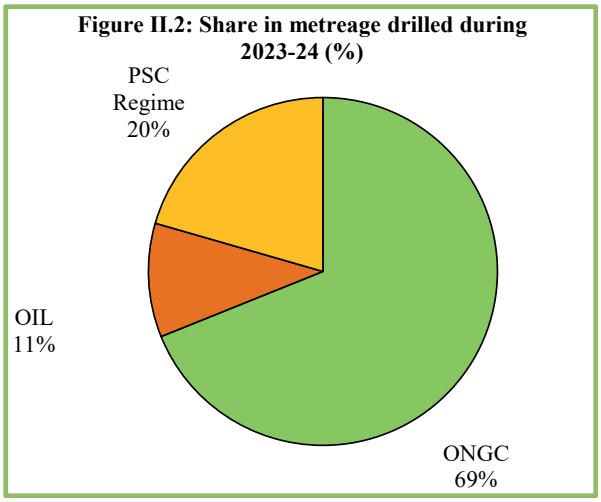


Figure II.2: Share in metreage drilled during 2023-24 (%)



II.2: Exploratory & Development Drilling by Oil Companies

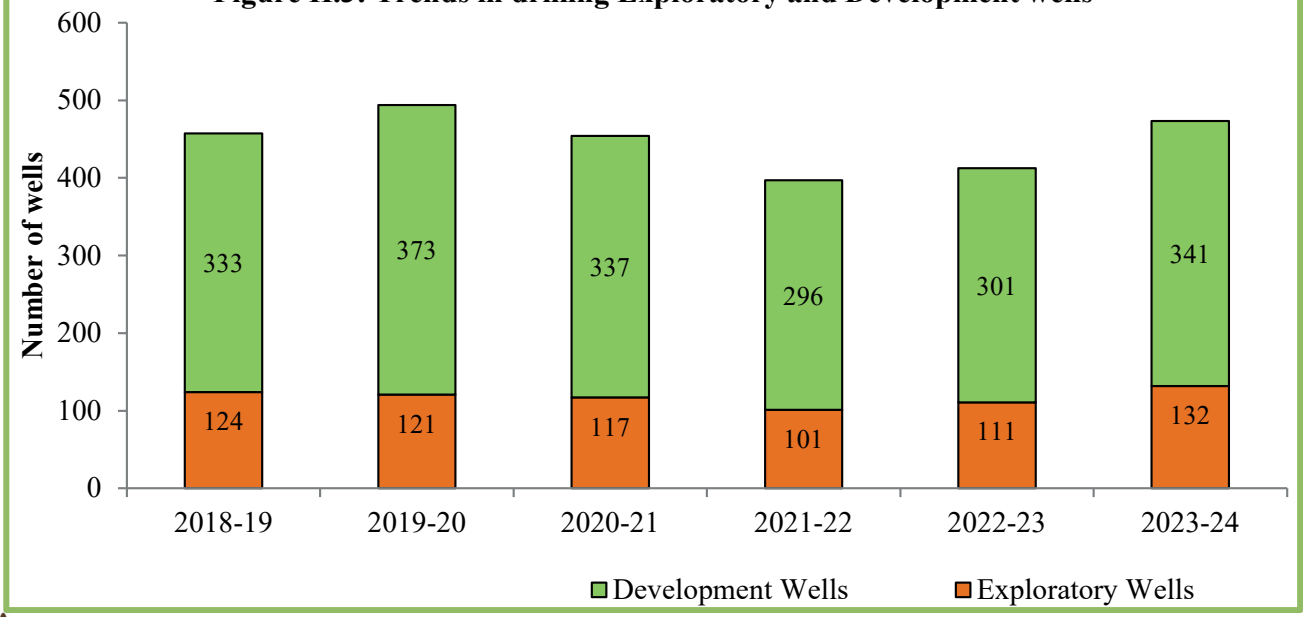
Year	Exploratory		Development		Total	
	Wells (Nos.)	Metreage ('000')	Wells (Nos.)	Metreage ('000')	Wells (Nos.)	Metreage ('000')
(1)	(2)	(3)	(4)	(5)	(6)	(7)
(A) Onshore						
2018-19	89	229	451	874	540	1103
2019-20	84	270	427	845	511	1115
2020-21	78	226	337	649	415	875
2021-22	76	228	380	771	456	999
2022-23	76	210	437	831	513	1042
2023-24	**95**	**240**	**518**	**951**	**613**	**1191**
(B) Offshore						
2018-19	35	104	114	300	149	404
2019-20	37	102	99	224	136	327
2020-21	39	111	108	217	147	328
2021-22	25	68	85	220	110	288
2022-23	35	91	77	211	112	302
2023-24	**37**	**101**	**91**	**246**	**128**	**346**
Total (A+B)						
2018-19	124	333	565	1174	689	1507
2019-20	121	373	526	1069	647	1442
2020-21	117	337	445	866	562	1203
2021-22	101	296	465	991	566	1287
2022-23	111	301	514	1043	625	1344
2023-24	**132**	**341**	**609**	**1197**	**741**	**1538**

Note:

1. Includes Water Disposal Wells and Non-Associated Gas Wells
2. Total may not tally due to rounding off
3. ONGC's Nomination wells includes Exploratory, Development, Side tracked & CBM wells.

Source: Directorate General of Hydrocarbons

Figure II.3: Trends in drilling Exploratory and Development wells



II.3: Status of Wells (as on 01.04.2024)

Status of Wells	Offshore	Gujarat	Rajasthan	Assam & Arunachal Pradesh	Tripura	Andhra Pradesh	Tamilnadu	West Bangal (CBM)	Jharkhand (CBM)	Madhya Pradesh (CBM)	Other state (UP, HP, MP, Bihar, Punjab, JK, WB)	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ONGC's Wells (Nomination)	1301	3660	0	447	0	52	89	0	0	0	0	5549
OIL's Wells (Nomination)	0	0	25	425	0	0	0	0	0	0	0	450
Wells in PSC/RSC & CBM Regime	30	194	423	24	0	7	6	0	0	0	0	684
A. Total-Flowing Oil Wells	**1331**	**3854**	**448**	**896**	**0**	**59**	**95**	**0**	**0**	**0**	**0**	**6683**
ONGC's Wells (Nomination)	199	62	0	10	118	92	89	0	0	0	0	570
OIL's Wells (Nomination)	0	0	14	114	0	0	0	0	0	0	0	128
Wells in PSC/RSC & CBM Regime	32	12	90	8	0	0	0	401	32	319	0	894
B. Total - Flowing Gas Wells	**231**	**74**	**104**	**132**	**118**	**92**	**89**	**401**	**32**	**319**	**0**	**1592**
C. Total Flowing Wells (A+B)	**1562**	**3928**	**552**	**1028**	**118**	**151**	**184**	**401**	**32**	**319**	**0**	**8275**
ONGC's Wells (Nomination)	260	1000	29	151	32	98	51	0	0	0	0	1621
OIL's Wells (Nomination)	0	0	25	189	0	0	0	0	0	0	0	214
Wells in PSC/RSC & CBM Regime	31	103	183	50	0	0	7	83	42	45	0	544
D. Total Non Flowing	**291**	**1103**	**237**	**390**	**32**	**98**	**58**	**83**	**42**	**45**	**0**	**2379**
E. Total flowing + Non flowing well (C+D)	**1853**	**5031**	**789**	**1418**	**150**	**249**	**242**	**484**	**74**	**364**	**0**	**10654**
ONGC's Wells (Nomination)	416	4254	52	1382	162	504	509	0	0	0	0	7279
OIL's Wells (Nomination)	0	0	33	1014	0	0	0	0	0	0	0	1047
Wells in PSC/RSC & CBM Regime	14	165	336	13	0	0	0	0	0	0	0	528
F. Other Flowing & Non flowing	**430**	**4419**	**421**	**2409**	**162**	**504**	**509**	**0**	**0**	**0**	**0**	**8854**
ONGC's Wells (Nomination)	2176	8976	81	1990	312	746	738	0	0	0	0	15019
OIL's Wells (Nomination)	0	0	97	1742	0	0	0	0	0	0	0	1839
Wells in PSC/RSC & CBM Regime	107	474	1032	95	0	7	13	484	74	364	0	2650
Total Wells in PNG Sector	**2283**	**9450**	**1210**	**3827**	**312**	**753**	**751**	**484**	**74**	**364**	**0**	**19508**

Note: Others includes Injector well, abandoned, to be abandoned etc.

1. ONGC Offshore wells tabulated above are nomination regime only.

Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd & Directorate General of Hydrocarbons

II.4: State-wise Geological Surveys Achievements upto 31.03.2024

(in Numbers)

States	ONGC	OIL	Survey under NSP LKM		Total Geological Surveys
			ONGC	OIL	
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	53427	-	2172	-	**55599**
A.N. Islands	6860	-	264	-	**7124**
Arunachal Pradesh	3692	-	0	186	**3878**
Assam	48073	-	0	3899	**51972**
Bihar (incl. Jharkhand)	4035	-	766	-	**4801**
Gujarat (Gulf Of Cambay)	60625	-	5688	-	**66313**
Haryana		-	250	-	**250**
Himachal Pradesh	9948	-	709	-	**10657**
Jammu & Kashmir	31970	-	188	-	**32158**
Kerala-Karnataka (incl. Goa)	4000	-	2058	-	**6058**
Madhya Pradesh	117920	-	6472	-	**124392**
Chhattisgarh	5920	-	2223	-	**8143**
Manipur	2781	-	0	5	**2786**
Meghalaya	1911	-	0	13	**1924**
Mizoram	6194	-	0	980	**7174**
Nagaland	6971	-	0	0	**6971**
Odisha		-	2481	-	**2481**
Punjab		-	802	-	**802**
Rajasthan	46501	-	3313	-	**49814**
Sikkim	720	-	0	0	**720**
Tamil Nadu (Incl. Puducherry)	20003	-	0	0	**20003**
Telangana		-	800		**800**
Tripura	21263	-	0	163	**21426**
Uttar Pradesh (incl. Uttarakhand)	29797	-	2920	-	**32717**
West Bengal	8808	-	911	-	**9719**
Maharashtra		-	9696		**9696**
Eastern offshore		-	8234		**8234**
Western offshore		-	46453		**46453**
Andaman offshore*		-	24853	22554	**47407**
Total	**491419**	**0**	**121254**	**27800**	**640473**

*: Special project to appraise Andaman offshore

NSP: National Seismic Programme LKM: Line Kilometre

Source: Oil and Natural Gas Corporation Limited, Oil India Limited and Directorate General of Hydrocarbons

II.5: State-wise Achievements of Geophysical Field Parties in India since inception upto 31.03.2024

Area/ State	ONGC (Nomination)		OIL (Nomination)		PSC + RSC/CBM (Including DSF) Regime		Grand Total	
	2D (LKM)	3D (SKM)	2D (LKM)	3D (SKM)	2D (LKM)	3D (SKM)	2D (LKM)	3D (SKM)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(A) Onshore								
Andhra Pradesh	39166	10392	0	0	1271	1718	40436	12110
Arunachal Pradesh	0	0	2641	390	571	114	3211	504
Assam1	31746	5743	9063	8214	6225	2506	47035	16463
Bihar2	6566	0	0	0	2423	1544	8989	1544
Chhattisgarh	202	0	0	0	0	0	202	0
Gujarat	104712	11577	0	0	9147	9594	113859	21171
Himachal Pradesh	4172	0	0	0	810	0	4982	0
Haryana	1038	0	0	0	0	0	1038	0
Jammu & Kashmir	2563	0	0	0	0	0	2563	0
Madhya Pradesh	10021	1189	0	0	4152	2245	14173	3434
Maharashtra	0	0	0	0	476	0	476	0
Manipur	0	0	0	0	210	0	210	0
Meghalaya	205	0	0	0	0	0	205	0
Mizoram	34	0	0	0	1526	613	1560	613
Nagaland	602	6	0	0	338	40	940	46
Odisha	313	0	0	0	1972	1786	2285	1786
Punjab	4078	0	0	0	0	0	4078	0
Rajasthan	20571	1633	0	0	27915	17636	48486	19269
Tamil Nadu	41031	8269	0	0	1710	2763	42740	11033
Telangana	0	0	0	0	195	0	195	0
Tripura	6396	1316	0	0	2002	188	8398	1504
Uttar Pradesh	26798	0	0	0	2860	211	29658	211
Uttarakhand	1522	0	0	0	0	0	1522	0
West Bengal	29227	596	0	0	5279	5656	34506	6252
A. Total Onshore	**330961**	**40721**	**11704**	**8604**	**69082**	**46615**	**411747**	**95940**
(B) Offshore								
Andaman & Nicobar	27357	0	0	0	0	0	27357	0
Eastern offshore	90158	8101	0	0	235735	200682	325893	208783
Western offshore	434940	89579	0	0	116443	78534	551382	168114
B. Total Offshore	**552454**	**97680**	**0**	**0**	**352178**	**279216**	**904632**	**376897**
Grand Total (A+B)	**883415**	**138401**	**11704**	**8604**	**421260**	**325831**	**1316379**	**472837**

Note: Total may not tally due to round off. LKM: Line Kilometre SKM: Square Kilometre

1. Including 429.27 LKM 2D & 9.93 SKM 3D sesismic data in Pre-NELP acreage (Assam).
2. Geophysical fields of Pvt./JVs in State of Bihar include Jharkhand

Source: Oil & Natural Gas Corporation Ltd.,Oil India Ltd. and Directorate General of Hydrocarbons

II.6 : Drilling Information Since Inception upto 31st March, 2024

Basin Category	No.	Basin Name	Total Contract Regime (PSC+RSC+CBM)		OIL_Nomination		ONGC_ Nomination	
			Exp. Wells	Dev. Wells	Exp. Wells	Dev. Wells	Exp. Wells	Dev. Wells
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Category I	1	Assam Arakan Fold Belt	7	0	35	27	1073	1299
(Basins with reserves being produced and Exploited)	2	Assam Shelf	61	36	421	1117		
	3	Cambay	336	216	0	0	2792	6512
	4	Cauvery	51	24	0	0	589	200
	5	Krishna Godavari	211	127	0	0	730	234
	6	Mumbai Offshore	61	166	0	0	1043	2104
	7	Rajasthan	347	1058	17	59	86	5
Category I Total			**1074**	**1627**	**473**	**1203**	**6313**	**10354**
Category II	**8**	**Andaman**	**6**	**0**	**0**	**0**	**12**	**0**
(Basins with contingent resources to be developed and monetized)	9	Kutch	21	0	0	0	63	0
	10	Mahanadi	58	0	0	0	0	0
	11	Saurashtra	17	0	0	0	25	0
	12	Vindhyan	14	0	0	0	18	0
Category II Total			**116**	**0**	**0**	**0**	**118**	**0**
Category III	13	Bastar	0	0	0	0	0	0
(Basins with only prospective resources to be explored and discovered)	14	Bengal-Purnea	28	0	0	0	39	0
	15	Bhima-Kaladgi	0	0	0	0	0	0
	16	Chhattisgarh	0	0	0	0	0	0
	17	Cuddapah	0	0	0	0	0	0
	18	Deccan Syneclise	0	0	0	0	0	0
	19	Ganga Punjab	8	0	0	0	13	0
	20	Himalayan Foreland	1	0	0	0	20	0
	21	Karewa	0	0	0	0	2	0
	22	Kerala Konakan	7	0	0	0	10	0
	23	Narmada	0	0	0	0	0	0
	24	Pranhita Godavari	3	0	0	0	0	0
	25	Satpura-S.Rewa-Damodar	201	1137	0	0	3	11
	26	Spiti-Zanskar	0	0	0	0	0	0
Category III Total			**248**	**1,137**	**0**	**0**	**87**	**11**
Grand TotaL			**1,438**	**2,764**	**473**	**1,203**	**6,518**	**10,365**

Source: Directorate General of Hydrocarbons

II.7: State-wise/Basin -wise Oil Fields in India (as on 31.03.2024)

(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) (B+C)		**128**	**77**	**25**	**230**
Gujarat	Cambay	74	6	0	**80**
Assam	Upper Assam	27	0	0	**27**
	A&AA	2	2	0	**4**
Rajasthan	Jodhpur	0	4	0	**4**
Andhra Pradesh	K.G. Basin	11	38	0	**49**
Tamil Nadu	Cauvery	14	11	0	**25**
Tripura	AAFB	0	9	0	**9**
Nagaland	A&AA	0	0	0	**0**
Madhya Pradesh	Vindhyan Basin	0	0	0	**0**
B. Total Onshore		**128**	**70**	**0**	**198**
East Coast	Cauvery Offshore	0	0	0	**0**
	KG Offshore (Shallow)	0	1		**1**
	KG Offshore (Deep)	0	3	3	**6**
West Coast	Cambay	0	0	0	**0**
	Mumbai Offshore	0	3	22	**25**
	Kutch	0	0	0	**0**
C. Total Offshore		**0**	**7**	**25**	**32**
D. Oil India Ltd. (Nomination)		**0**	**0**	**19**	**19**
Assam	Upper Assam	0	0	14	**14**
Arunachal Pradesh	Upper Assam	0	0	1	**1**
Rajasthan	Jaisalmer	0	0	3	**3**
	Bikaner Nagur	0	0	1	**1**
E. PSC + RSC/CBM (F+G)		**53**	**24**	**3**	**80**
Andhra Pradesh	Krishna Godavari	1	0	0	**1**
Arunachal Pradesh	Assam-Arakan	1	0	0	**1**
Assam	Assam-Arakan	0	3	0	**3**
Tripura	Assam-Arakan	0	0	0	**0**
Gujarat	Cambay	32	3	1	**36**
Madhya Pradesh*	Sohagpur	0	2	0	**2**
Jharkhand*	Jharia	0	1	0	**1**
	Bokaro	0	1	0	**1**
Rajasthan	Rajasthan	14	4	0	**18**
Tamil Nadu	Cauvery	0	0	1	**1**
West Bengal	Bengal	1	0	0	**1**
West Bengal*	Ranigunj	0	2	0	**2**
F. Total Onshore+CBM		**49**	**16**	**2**	**67**
East Coast	Cauvery	0	1	0	**1**
	Krishna Godavari	2	6	1	**9**
West Coast	Mumbai	1	0	0	**1**
	Cambay	1	1	0	**2**
G. Total Offshore		**4**	**8**	**1**	**13**
Grand Total (A+D+E)		**181**	**101**	**47**	**329**

A&AA : Assam & Assam Arakan. *: CBM Fields

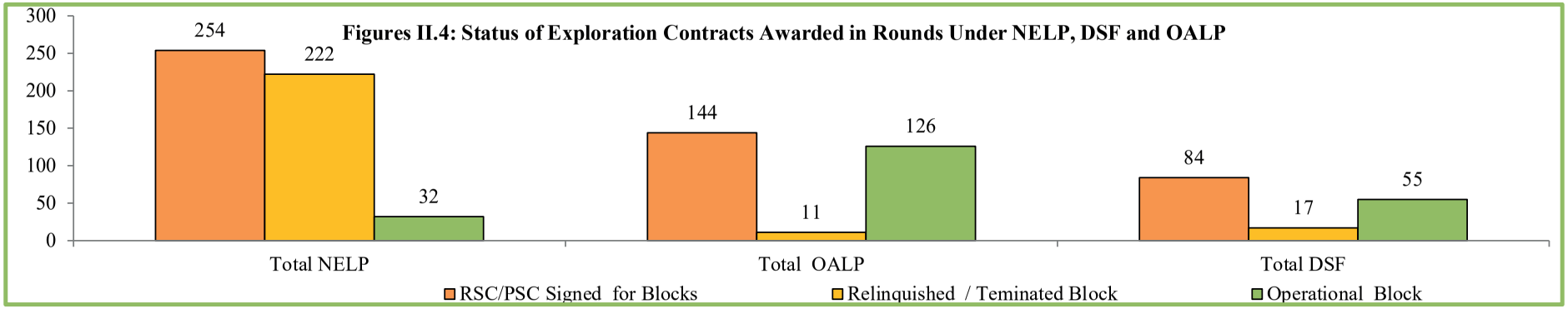
Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd. and Directorate General of Hydrocarbons

II.8: Exploration Contracts Awarded in Rounds Under NELP, DSF and OALP as on 01.04.2024

Round	Launch Year	Offered Block/ Contract Area	RSC/PSC Signed for Blocks				Relinquished/Terminated/Proposed for Relinquishment/Contracts not signed				Operational Block*				Area Awarded (Sq. Km)
			Ultra Deep/ Deep Water	Shallow Water	Onland	Total	Ultra Deep/ Deep Water	Shallow Water	Onland	Total	Ultra Deep/ Deep Water	Shallow Water	Onland	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
NELP-I	1999	48	7	16	1	24	5	15	1	21	2	1	0	3	231527
NELP-II	2000	25	8	8	7	23	8	8	6	22	0	0	1	1	267883
NELP-III	2002	27	9	6	8	23	9	5	5	19	0	1	3	4	204596
NELP-IV	2003	24	10	0	10	20	10		7	17	0	0	3	3	192810
NELP-V	2005	20	6	2	12	20	6	1	9	16	0	1	3	4	115180
NELP-VI	2006	55	21	6	25	52	21	5	20	46	0	1	5	6	306426
NELP-VII	2007	57	11	7	23	41	11	5	20	36	0	2	3	5	112947
NELP-VIII	2009	70	8	11	13	32	8	11	12	31	0	0	1	1	52573
NELP-IX	2010	34	1	3	15	19	1	3	10	14	0	0	5	5	26441
Total NELP		**360**	**81**	**59**	**114**	**254**	**79**	**53**	**90**	**222**	**2**	**6**	**24**	**32**	**1510383**
OALP-I	2018	55	1	8	46	55	0	0	6	6	1	8	40	49	59283
OALP-II	2019	14	1	5	8	14	0	0	1	1	1	5	6	12	29233
OALP-III	2019	23	1	3	14	18	0	0	3	3	1	3	9	13	29765
OALP-IV	2019	7	0	0	7	7	0	0	0	0	0	0	7	7	18510
OALP-V	2020	11	1	2	8	11	0	0	1	1	1	2	8	11	19789
OALP-VI	2021	21	2	4	15	21	0	0	0	0	2	4	15	21	35346
OALP-VII	2021	8	1	2	5	8	0	0	0	0	1	2	4	7	15766
OLAP-VIII	2022	10	4	4	2	10	0	0	0	0	3	3	0	6	34364.53
Total OALP		**149**	**11**	**28**	**105**	**144**	**0**	**0**	**11**	**11**	**10**	**27**	**89**	**126**	**242056**
DSF-I	2016	46	0	7	23	30	0	4	7	11	0	3	12	15	776.75
DSF-II	2018	25	0	9	15	24	0	1	4	5	0	8	8	16	3004.17
DSF-III	2022	32	1	18	11	30	0	1	0	1	1	17	6	24	12727.30
Total DSF		**103**	**1**	**34**	**49**	**84**	**0**	**6**	**11**	**17**	**1**	**28**	**26**	**55**	**16508**

Source: Directorate General of Hydrocarbons

*including operational with issues blocks



Figures II.4: Status of Exploration Contracts Awarded in Rounds Under NELP, DSF and OALP

II.9: State-wise/Area-wise Balance Recoverable Reserves of Crude Oil (in MMT)

State/Region	01.04.2023			% of Total (01.04.2023)	01.04.2024 (P)			% of Total (01.04.2024)
	Reserves (2P)	Contingent Resources 2C	Total		Reserves (2P)	Contingent Resources 2C	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	3.7	7.4	**11.1**	1.7	3.3	4.4	**7.7**	1.1
Arunachal Pradesh	2.4	0.5	**3.0**	0.4	2.3	0.5	**2.9**	0.4
Assam	106.6	41.5	**148.1**	22.1	104.1	41.3	**145.4**	21.7
Gujarat	94.5	25.8	**120.3**	18.0	92.6	26.3	**118.9**	17.7
Nagaland	0.0	2.4	**2.4**	0.4	0.0	2.4	**2.4**	0.4
Rajasthan	26.6	90.0	**116.7**	17.4	23.4	108.1	**131.5**	19.6
Tamil Nadu	5.7	3.0	**8.7**	1.3	5.8	2.7	**8.5**	1.3
Tripura	0.1	0.0	**0.1**	0.0	0.1	0.0	**0.1**	0.0
West Bengal	0.0	0.1	**0.1**	0.0	0.0	0.1	**0.2**	0.0
Eastern Offshore	33.6	6.9	**40.5**	6.1	32.2	8.4	**40.7**	6.1
Western Offshore	176.2	42.2	**218.4**	32.6	170.5	42.8	**213.3**	31.8
Total Reserves of Crude Oil	**449.5**	**219.9**	**669.5**	**100.0**	**434.3**	**237.1**	**671.4**	**100.0**
Initial-In Place	-	-	**7299.2**	-	-	-	**7235.4**	-
Ultimate	-	-	**1920.9**	-	-	-	**1933.0**	-
Reserves Replaccement Ratio	**-**	**-**	**1.0**	**-**	**-**	**-**	**0.5**	**-**

Note: Figures as on 1st April of particular year and Total may not tally due to rounding off P: Provisional

1. Western offshore includes Gujarat offshore
2. ONGC adopted PRMS System w.e.f 01.04.2019; OIL & Contract Regime adopted PRMS system w.e.f 01.04.2022. Revision/changes in Reserves figures are mainly attributed to the adoption of PRMS guidelines in reserves reporting.
3. As per PRMS system, Under PRMS, each project must be classified individually so that the estimated recoverable sales quantities associated with that project can be correctly assigned to one of the three main classes: Reserves, Contingent Resources or Prospective Resources.
   - Reserves are associated with projects that the owners can demonstrate to be economic and that have approval for development by all partners.
   - Contingent resources are associated with projects that are discoveries, but for some reason the project is not yet approved for development.
   - Prospective resources are from projects that remain as prospects, i.e. are yet to be discovered.

Source: Directorate General of Hydrocarbons

II.10: State-wise/Area-wise Balance Recoverable Reserves of Natural Gas (in BCM)

State/Region	01.04.2023	% of Total (01.04.2023)			01.04.2024 (P)			% of Total (01.04.2024)
	Reserves (2P)	Contingent Resources 2C	Total		Reserves (2P)	"Contingent Resources 2C"	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	21.1	42.0	**63.2**	5.5	20.8	38.5	**59.3**	5.4
Arunachal Pradesh	0.0	7.2	**7.2**	0.6	0.0	7.3	**7.3**	0.7
Assam	78.1	87.6	**165.7**	14.5	73.9	90.6	**164.5**	15.0
Gujarat	37.8	18.8	**56.6**	5.0	36.5	19.0	**55.5**	5.1
Jharkhand (CBM)	4.1	0.7	**4.9**	0.4	4.1	0.7	**4.9**	0.4
Madhya Pradesh (CBM)	24.2	0.9	**25.2**	2.2	23.7	0.6	**24.4**	2.2
Nagaland	0.0	0.1	**0.1**	0.0	0.0	0.1	**0.1**	0.0
Rajasthan	51.5	12.4	**64.0**	5.6	49.5	14.1	**63.5**	5.8
Tamil Nadu	24.2	13.4	**37.5**	3.3	23.2	13.3	**36.6**	3.3
Tripura	17.4	11.5	**28.9**	2.5	16.5	11.7	**28.2**	2.6
West Bengal (CBM)	32.0	47.3	**79.3**	6.9	29.6	14.8	**44.4**	4.1
Eastern Offshore	142.3	120.1	**262.4**	23.0	136.0	127.3	**263.3**	24.1
Western Offshore	217.9	128.9	**346.8**	30.4	229.6	112.7	**342.3**	31.3
Total Natural Gas Reserves	**650.6**	**491.1**	**1141.7**	**100.0**	**643.4**	**450.8**	**1094.2**	**100.0**
Initial-In Place Reserves	-	-	**3952.7**	-	-	-	**4001.1**	-
Ultimate Reserves	-	-	**1829.6**	-	-	-	**1856.1**	-
Reserves Replaccement Ratio	-	-	**1.1**	-	-	-	**1.0**	-

Note: Figures as on 1st April of particular year and Total may not tally due to rounding off P: Provisional CBM : Cold Bed Methane (Jharkhand, West Bengal and M.P.)

1. Western offshore includes Gujarat offshore
2. ONGC adopted PRMS System w.e.f 01.04.2019; OIL & Contract Regime adopted PRMS system w.e.f 01.04.2022. Revision/changes in Reserves figures are mainly attributed to the adoption of PRMS guidelines in reserves reporting.
3. As per PRMS system, Under PRMS, each project must be classified individually so that the estimated recoverable sales quantities associated with that project can be correctly assigned to one of the three main classes: Reserves, Contingent Resources or Prospective Resources.
   - Reserves are associated with projects that the owners can demonstrate to be economic and that have approval for development by all partners.
   - Contingent resources are associated with projects that are discoveries, but for some reason the project is not yet approved for development.
   - Prospective resources are from projects that remain as prospects, i.e. are yet to be discovered."

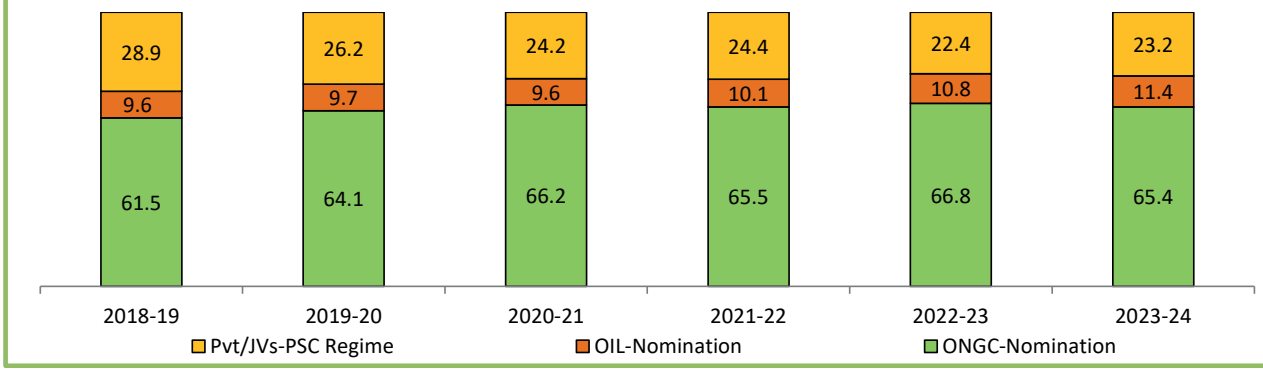
Source: Directorate General of Hydrocarbons

II.11: Production of Crude Oil and Condensate (Financial Year-wise)

State/Region	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% variation in 2023-24 over 2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
State-wise Crude Oil Production (TMT)							
Andhra Pradesh	296	243	195	202	236	250	6.1
Arunachal Pradesh	43	56	53	48	47	52	10.2
Assam	4309	4093	3902	3988	4164	4359	4.7
Gujarat	4626	4707	4651	4627	4850	4950	2.1
Rajasthan	7667	6653	5891	5887	5074	4421	-12.9
Tamil Nadu	395	415	410	367	324	294	-9.2
Tripura	-	-	-	3	3	2	-21.2
West Bengal	-	-	-	0	0	0	-100.0
Offshore	16868	16003	15391	14569	14480	15027	3.8
A. Total Crude Oil Production*	**34203**	**32170**	**30494**	**29691**	**29179**	**29356**	**0.6**
of which							
Crude Oil Production	32474	30524	29121	28450	27825	27168	-2.4
Condensate Production	1729	1646	1373	1241	1353	2188	61.7
Entity-wise Crude Oil Production (TMT)*							
ONGC (Nomination) Onshore Production	6074	6090	5934	5833	5950	6004	0.9
OIL (Nomination) Onshore Production	3293	3107	2937	2987	3155	3344	6.0
Pvt/JVs (PSC + RSC) Onshore Production	7969	6970	6232	6303	5593	4981	-10.9
Total Production in Onshore	17336	16167	15103	15122	14699	14329	-2.5
ONGC (Nomination) Offshore Production	14969	14537	14249	13619	13544	13206	-2.5
Pvt/JVs(PSC+RSC) Offshore Production	1899	1466	1142	950	936	1822	94.5
Total Production in Offshore	16868	16003	15391	14569	14480	15027	3.8
C. Total Crude Oil Production*	**34203**	**32170**	**30494**	**29691**	**29179**	**29356**	**0.6**
of which							
Total ONGC (Nomination) Production	21042	20627	20183	19451	19493	19210	-1.5
Total OIL (Nomination) Production	3293	3107	2937	2987	3155	3344	6.0
Total Pvt/JVs (PSC+RSC) Production	9868	8436	7374	7253	6530	6803	4.2

Note: Total may not tally due to rounding off P:Provisional *:Included Condensate PSC: Production Sharing Contracts RSC: Revenue Sharing Contract Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd. and Directorate General of Hydrocarbons

Figure II.5: Entity-wise % Share of Crude Oil Production



II.12: Basin-wise Production of Crude Oil

Basin	State	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	Production % Share in FY 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crude Oil Production (TMT) by Oil and Natural Gas Corporation								
Western Offshore *	Maharashtra	14950	14517	14236	13604	13527	13196	46.4
Krishna Godavari Offshore (Eastern offshore)	Andhra Pradesh	18	19	13	14	17	9	0.1
Western Onland	Gujarat	4492	4574	4484	4388	4484	4530	15.4
Assam & Assam Arakan	Assam	993	987	964	994	1009	1047	3.5
Krishna Godavari	Andhra Pradesh	285	202	154	159	202	202	0.7
Cauvery	Tamilnadu	303	328	331	291	254	226	0.9
A. Total ONGC-Nomination		**21042**	**20627**	**20183**	**19451**	**19493**	**19210**	**66.8**
B. ONGC-NELP/JVs Share		**3189**	**2726**	**2350**	**2256**	**1992**	**1929**	**6.8**
C. Total ONGC's Production (A+B)		**24231**	**23353**	**22533**	**21707**	**21485**	**21139**	**73.6**
Crude Oil Production (TMT) by Oil India Ltd.								
Assam-Arakan	Assam	3282	3075	2905	2957	3114	3286	10.7
	Arunachal Pradesh	9	23	24	21	24	32	0.1
Rajasthan	Rajasthan	3	8	9	9	17	25	0.1
D. Total OIL (Nomination)		**3293**	**3107**	**2937**	**2987**	**3156**	**3344**	**10.8**
E. OIL (JVs Share)		**14**	**26**	**27**	**23**	**20**	**15**	**0.1**
F. Total OIL's Production (D+E)		**3307**	**3133**	**2964**	**3010**	**3176**	**3359**	**10.9**
Crude Oil Production (TMT) by Pvt/JVs-in PSC + RSC/CBM								
Krishna Godavari Offshore (Eastern offshore)	Andhra Pradesh	634	537	731	612	533	1454	1.8
Cauvery Offshore (Eastern offshore)	Tamilnadu	2	1	0	0	0	0	0.0
Cambay (Offshore)	Gujarat Offshore	736	591	411	338	379	326	1.3
Mumbai Offshore (Western Offshore)	Western Offshore	527	338	0	0	24	42	0.1
KG Onshore	Andhra Pradesh	11	41	40	43	34	48	0.1
Assam-Arakan	Arunachal Pradesh	34	32	30	27	23	20	0.1
	Assam	34	30	33	40	42	28	0.1
Cambay	Gujarat	133	134	167	239	366	421	1.3
Rajasthan	Rajasthan	7664	6645	5882	5879	5058	4396	17.3
Cauvery	Tamilnadu	92	87	79	76	70	68	0.2
West Bengal	West Bengal	0	0	0	0	0	0	0.0
**G. Total Pvt/JVs Production-in PSC + RSC/CBM ** **		**9868**	**8436**	**7374**	**7253**	**6530**	**6803**	**24.4**
H. Total Crude Oil Production (A+D+G)		**34203**	**32170**	**30494**	**29691**	**29179**	**29356**	**100.0**

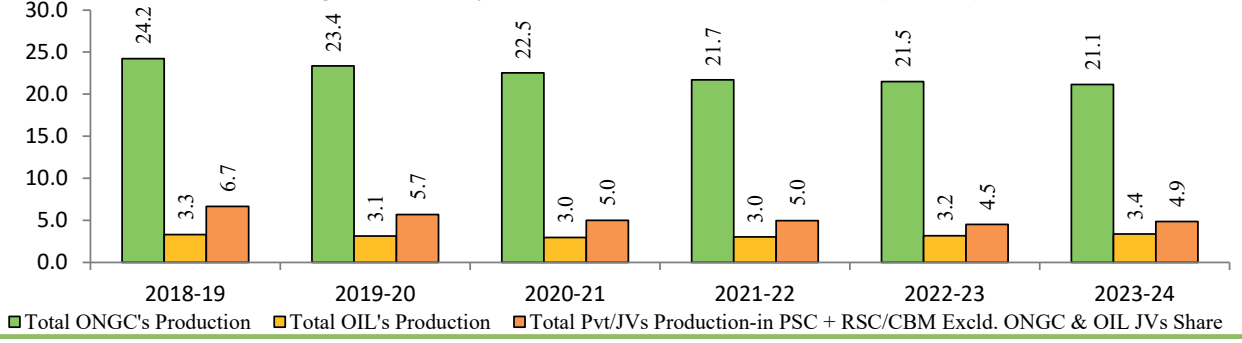
Note: Total may not tally due to rounding off

* Condensate receipt at Uran & Hazira included in Western Offshore Basin of Maharashtra

**: Including NELP/JVs Share of ONGC's & OIL's Production

Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd. and Directorate General of Hydrocarbons

Figure II.6: Entity-wise Production Share of Crude Oil (in MMT)

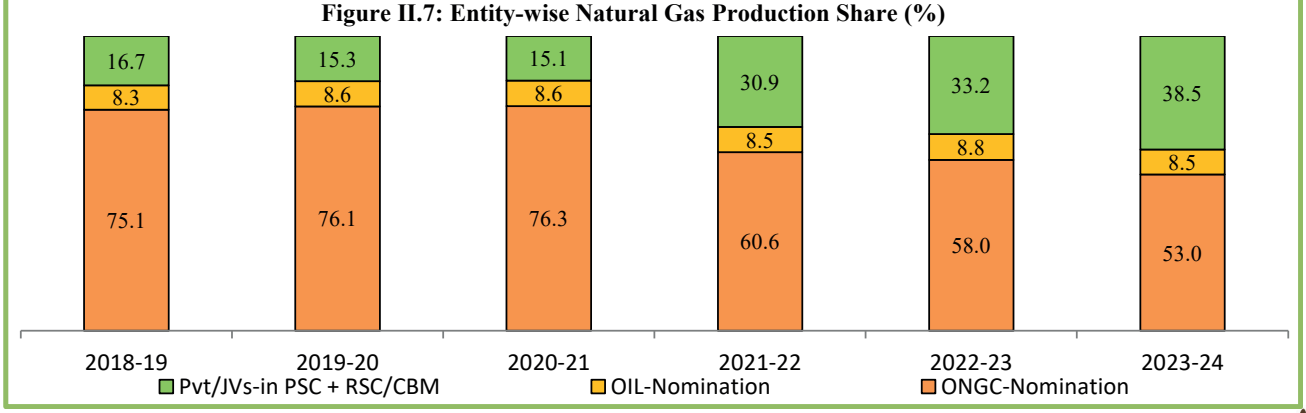


II.13: Production of Natural Gas (Financial Year-wise)

State/Region	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% variation in 2023-24 over 2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
State-wise Natural Gas Production (MMSCM)							
Andhra Pradesh	1081	912	827	809	710	722	1.7
Arunachal Pradesh	28	46	55	58	53	40	-25.7
Assam	3289	3141	2995	3371	3557	3489	-1.9
Gujarat	1402	1342	1138	1017	923	926	0.3
Jharkhand (CBM)	4	5	2	4	10	5	-46.8
Madhya Pradesh (CBM)	357	345	334	290	264	234	-11.3
Rajasthan	1483	1883	2040	2619	2340	2199	-6.0
Tamil Nadu	1208	1097	911	1067	1109	1016	-8.4
Tripura	1554	1473	1634	1531	1675	1525	-9.0
West Bengal (CBM)	350	306	307	389	399	411	2.9
Offshore	22117	20635	18429	22869	23409	25871	10.5
A. Total Natural Gas Production	**32873**	**31184**	**28673**	**34024**	**34450**	**36438**	**5.8**
Entity-wise Natural Gas Production (MMSCM)							
ONGC (Nomination) Onshore Production	5633	5170	4786	4686	4644	4337	-6.6
OIL (Nomination) Onshore Production	2722	2668	2480	2893	3041	3090	1.6
Pvt/JVs (PSC + RSC) Onshore Production	1691	2055	2336	2893	2683	2489	-7.2
Total Production in Onshore	10046	9893	9601	10471	10368	9916	-4.4
ONGC (Nomination) Offshore Production	19042	18576	17086	15943	15325	14979	-2.3
Pvt/JVs(PSC+RSC) Offshore Production	3075	2059	1343	6926	8084	10892	34.7
Total Production in Offshore	**22117**	**20635**	**18429**	**22869**	**23409**	**25871**	**10.5**
Total Production in CBM	**710**	**655**	**642**	**683**	**673**	**650**	
B. Total Natural Gas Production	**32873**	**31184**	**28673**	**34024**	**34450**	**36438**	**5.8**
of which							
Total ONGC (Nomination) Production	**24675**	**23746**	**21872**	**20629**	**19969**	**19316**	**-3.3**
Total OIL (Nomination) Production	**2722**	**2668**	**2480**	**2893**	**3041**	**3090**	**1.6**
Total Pvt/JVs (PSC+RSC+CBM) Production	**5477**	**4770**	**4321**	**10502**	**11440**	**14032**	**22.7**

Note: Total may not tally due to rounding off P: Provisional
PSC: Production Sharing Contracts RSC: Revenue Sharing Contract CBM: Coal Bed Methane
Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd. and Directorate General of Hydrocarbons

Figure II.7: Entity-wise Natural Gas Production Share (%)



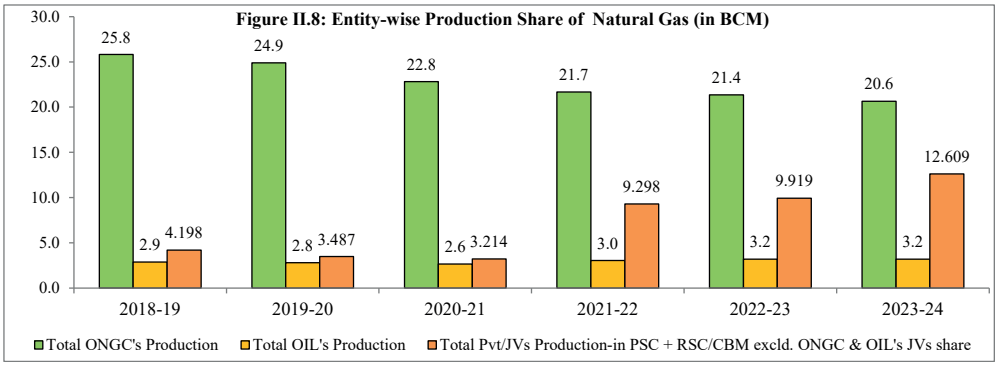
II.14: Basin-wise Production of Natural Gas

Basin	State	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	Production % Share in FY 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Natural Gas Production by Oil and Natural Gas Corporation								
Western Offshore	Maharashtra	18005	17645	16660	15681	15117	14761	40.5
Krishna Godavari Offshore (Eastern offshore)	Andhra Pradesh	1037	931	426	262	208	217	0.6
Western Onland	Gujarat	1332	1274	1074	951	837	787	2.2
Frontier	Rajasthan	4	0	0	0	0	0	0.0
Assam & Assam Arakan	Assam	483	460	387	373	355	335	0.9
	Tripura	1554	1473	1634	1531	1675	1525	4.2
Krishna Godavari	Andhra Pradesh	1077	897	814	794	695	702	1.9
Cauvery	Tamilnadu	1182	1066	877	1037	1082	988	2.7
A. Total ONGC-Nomination		**24675**	**23746**	**21872**	**20629**	**19969**	**19316**	**53.0**
B. ONGC-NELP/JVs Share		**1136**	**1150**	**944**	**1051**	**1382**	**1332**	**3.7**
C. Total ONGC's Production (A+B)		**25810**	**24896**	**22816**	**21680**	**21351**	**20647**	**57**
Natural Gas Production by Oil India Ltd.								
Assam-Arakan	Assam	2482	2379	2241	2620	2812	2885	7.9
	Arunachal Pradesh	12	38	50	53	48	35	0.1
Rajasthan	Rajasthan	228	251	188	219	181	171	0.5
D. Total OIL-Nomination		**2722**	**2668**	**2480**	**2893**	**3041**	**3090**	**8.5**
E. OIL-JVs Share		**143**	**133**	**162**	**153**	**139**	**91**	**0.3**
F. Total OIL's Production (D+E)		**2865**	**2801**	**2642**	**3045**	**3180**	**3182**	**8.7**
Natural Gas Production by Pvt/JVs-in PSC + RSC/CBM								
Krishna Godavari Offshore (Eastern offshore)	Andhra Pradesh	1338	849	1182	6761	7784	10600	29.1
Cauvery Offshore (Eastern offshore)	Tamilnadu	84	43	13	2	8	6	0.0
Cambay (Offshore)	Gujarat Offshore	122	129	148	163	232	214	0.6
Mumbai Offshore (Western Offshore)	Maharashtra	1531	1039	0	0	60	72	0.2
KG Onshore	Andhra Pradesh	5	15	13	15	14	20	0.1
Assam-Arakan	Arunachal Pradesh	16	7	5	5	5	5	0.0
	Assam	324	302	367	378	390	270	0.7
Cambay	Gujarat	70	69	65	66	86	139	0.4
Rajasthan	Rajasthan	1251	1632	1852	2399	2159	2028	5.6
Cauvery	Tamilnadu	25	31	34	29	28	28	0.1
Ranigunj South (CBM)	West Bengal	153	139	110	112	104	96	0.3
Ranigunj East (CBM)	West Bengal	198	167	197	277	295	315	0.9
Jharia/Bokaro (CBM)	Jharkhand	4	5	2	4	10	5	0.0
23. Sohagpur East / West (CBM)	Madhya Pradesh	357	345	334	290	264	234	0.6
G. Total Pvt/JVs Production-in PSC + RSC/CBM		**5477**	**4770**	**4321**	**10502**	**11440**	**14032**	**38.5**
H. Total Natural Gas Production (A+D+G)		**32873**	**31184**	**28673**	**34024**	**34450**	**36438**	**100.0**

Note: Total may not tally due to rounding off P: Provisional

PSC: Production Sharing Contracts RSC: Revenue Sharing Contract CBM: Coal Bed Methane

Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd. and Directorate General of Hydrocarbons



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

(Figures in MMSCM)

State / Utilisation	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh						
Gross Production	1081	912	827	809	710	722
Flare	37	39	44	41	30	34
Losses	0	0	0	0	0	0
Net Availability/Net Production	**1044**	**874**	**783**	**767**	**680**	**688**
Internal Use/Consumption	25	24	23	24	25	24
Sales	1019	850	760	744	655	664
Arunachal Pradesh						
Gross Production	28	46	55	58	53	40
Flare	15	33	43	47	44	32
Losses	5	1	0	0	0	0
Net Availability/Net Production	**8**	**11**	**12**	**11**	**9**	**7**
Internal Use/Consumption	8	11	12	11	9	7
Sales	0	0	0	0	0	0
Assam						
Gross Production	3289	3141	2995	3371	3557	3489
Flare	192	196	179	214	243	229
Losses	12	13	14	48	66	97
Net Availability/Net Production	**3085**	**2932**	**2803**	**3110**	**3249**	**3163**
Internal Use/Consumption	586	570	538	648	670	635
Sales	2499	2362	2265	2462	2579	2527
Gujarat						
17. Gross Production	1402	1342	1138	1017	923	926
18. Flare	54	55	80	48	41	29
19. Losses	0	0	0	0	0	0
Net Availability/Net Production	**1349**	**1287**	**1059**	**969**	**882**	**897**
21. Internal Use/Consumption	383	420	382	334	322	266
22. Sales	966	867	677	635	559	631
Rajasthan						
23. Gross Production	1483	1883	2040	2619	2340	2199
24. Flare	53	91	85	56	32	34
25. Losses	52	20	16	22	19	12
Net Availability/Net Production	**1378**	**1772**	**1938**	**2541**	**2289**	**2154**
27. Internal Use/Consumption	597	624	711	755	658	633
28. Sales	780	1148	1227	1786	1630	1520
Tamil Nadu						
29.Gross Production	1208	1097	911	1067	1109	1016
30. Flare	40	46	54	23	32	34
31. Losses	0	0	0	0	0	0
Net Availability/Net Production	**1167**	**1051**	**857**	**1043**	**1078**	**981**
33. Internal Use/Consumption	7	5	5	5	6	6
34. Sales	1161	1046	852	1038	1072	975
Tripura						
35. Gross Production	1554	1473	1634	1531	1675	1525
36. Flare	0	0	0	0	0	0
37. Losses	0	0	0	0	0	0
Net Availability/Net Production	**1554**	**1472**	**1634**	**1530**	**1675**	**1525**
39. Internal Use/Consumption	3	3	3	3	4	7
40. Sales	1551	1470	1631	1527	1671	1518

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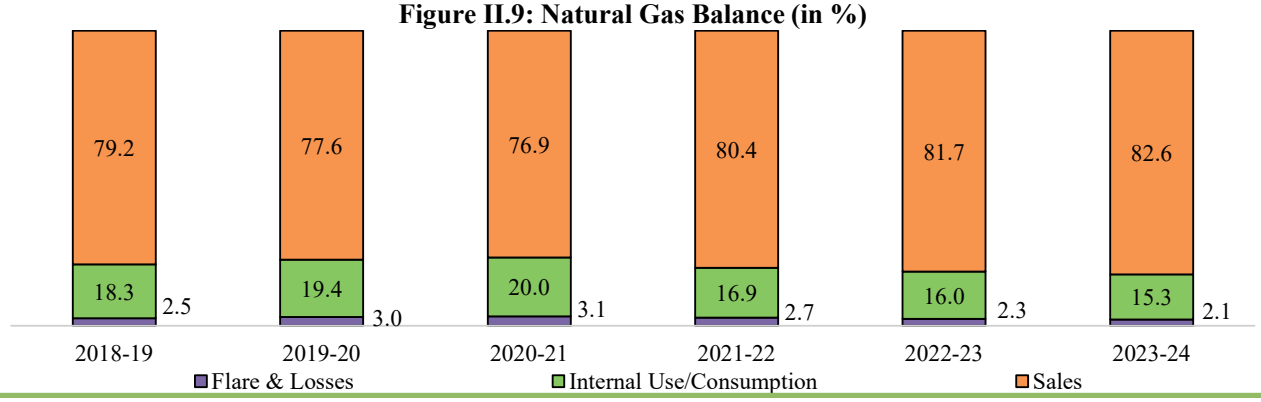
State / Utilisation	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Jharkhand						
Gross Production	4	5	2	4	10	5
Flare	0	0	0	0	1	0
Losses	0	0	0	0	0	0
Net Availability/Net Production	**4**	**5**	**2**	**4**	**9**	**5**
Internal Use/Consumption	1	1	1	2	6	4
Sales	3	4	1	2	3	1
Madhya Pradesh						
Gross Production	357	345	334	290	264	234
Flare	1	1	1	0	0	0
Losses	0	0	0	0	0	0
Net Availability/Net Production	**356**	**344**	**333**	**290**	**263**	**234**
Internal Use/Consumption	23	25	28	25	22	20
Sales	333	319	305	265	241	214
West Bengal						
Gross Production	350	306	307	389	399	411
Flare	36	16	45	12	0	0
Losses	8	13	11	12	12	11
Net Availability/Net Production	**307**	**277**	**250**	**365**	**387**	**400**
Internal Use/Consumption	57	50	46	69	63	56
Sales	250	227	204	297	324	344
B. Offshore						
Gross Production	22117	20635	18429	22869	23409	25871
Flare	299	384	290	371	271	238
Losses	16	20	25	13	10	8
Net Availability/Net Production	**21802**	**20232**	**18113**	**22485**	**23128**	**25625**
Internal Use/Consumption	4326	4319	3982	3892	3726	3906
Sales	17476	15913	14131	18593	19402	21719
Total Balance of Natural Gas						
Gross Production	32873	31184	28673	34024	34450	36438
Flare	726	860	822	813	695	632
Losses	93	67	67	95	107	128
Net Availability/Net Production	**32054**	**30257**	**27784**	**33116**	**33648**	**35677**
Internal Use/Consumption	6015	6052	5730	5767	5511	5565
Sales	26039	24205	22054	27349	28136	30112
Flared % to Gross Production	**2.21**	**2.76**	**2.87**	**2.39**	**2.02**	**2**

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/losses from gross production.

Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd. and Directorate General of Hydrocarbons

Figure II.9: Natural Gas Balance (in %)



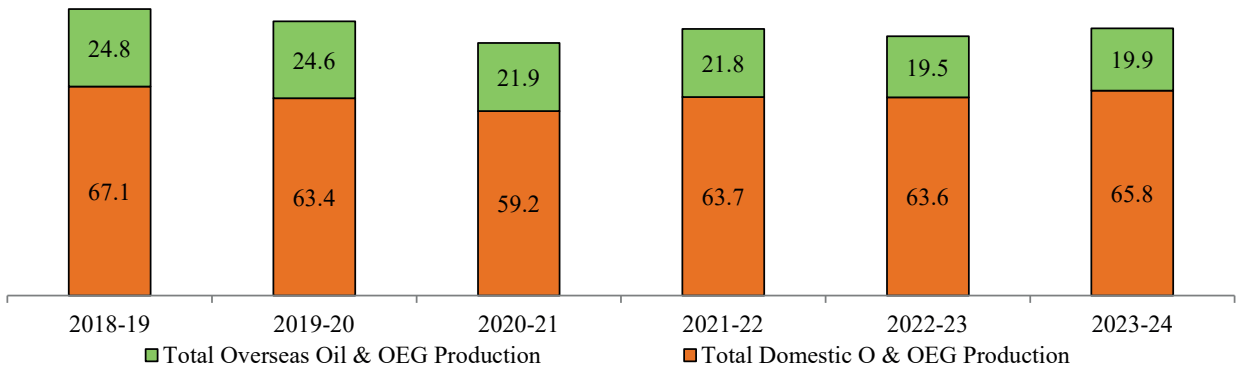
II.16: Domestic and Overseas Production of Oil & Gas

Entity/Year	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Domestic Production of Oil & Gas						
Total Production of Oil & Condensate (MMT)	34.20	32.17	30.49	29.69	29.18	29.36
Total Production of Gas (BCM)	32.87	31.18	28.67	34.02	34.45	36.44
Total Domestic O & OEG Production (MMTOE)	**67.08**	**63.35**	**59.17**	**63.71**	**63.63**	**65.79**
B. Overseas Production of Oil & Gas						
ONGC Videsh Ltd. (OVL)	10.10	9.76	8.51	8.10	6.35	7.18
Bharat PetroResources Ltd. (BPRL)	2.15	2.07	1.79	1.87	1.80	1.75
Indian Oil Corporation Ltd. (IOCL)	3.24	3.21	2.71	2.88	2.79	2.66
GAIL (India) Ltd. (GAIL)	0.06	0.04	0.02	0.02	0.01	0.02
OIL (Oil India Ltd.)	1.69	1.58	1.42	1.40	1.30	1.26
HPCL-PPCL (Prize Petroleum Co. Ltd.)	0.01	0.00	0.00	0.00	0.00	0.00
Total Overseas Production of Crude Oil & Condensate (MMT)	**17.25**	**16.66**	**14.45**	**14.27**	**12.26**	**12.87**
ONGC Videsh Ltd. (OVL)	4.74	5.23	4.53	4.23	3.82	3.34
Bharat PetroResources Ltd. (BPRL)	0.68	0.60	0.67	0.80	0.81	0.85
Indian Oil Corporation Ltd. (IOCL)	1.05	0.95	1.07	1.29	1.39	1.55
GAIL (India) Ltd. (GAIL)	0.37	0.55	0.50	0.46	0.48	0.43
OIL (Oil India Ltd.)	0.70	0.62	0.68	0.81	0.82	0.86
HPCL-PPCL (Prize Petroleum Co. Ltd.)	0.05	0.03	0.03	0.02	0.01	0.01
Total Overseas Production of Natural Gas (BCM)	**7.58**	**7.98**	**7.48**	**7.60**	**7.34**	**7.03**
ONGC Videsh Ltd. (OVL)	14.83	14.98	13.04	12.33	10.17	10.52
Bharat PetroResources Ltd. (BPRL)	2.83	2.68	2.46	2.66	2.61	2.60
Indian Oil Corporation Ltd. (IOCL)	4.29	4.15	3.78	4.17	4.19	4.21
GAIL (India) Ltd. (GAIL)	0.39	0.54	0.47	0.44	0.45	0.41
OIL (Oil India Ltd.)	2.39	2.20	2.10	2.20	2.12	2.12
HPCL-PPCL (Prize Petroleum Co. Ltd.)	0.06	0.04	0.04	0.02	0.02	0.01
Total Overseas Oil & OEG Production (in MMTOE)	**24.79**	**24.58**	**21.89**	**21.82**	**19.55**	**19.90**
Overseas production as (%) percentage of domestic production	36.96	38.80	36.99	34.25	30.72	30.25

Note: Total may not tally due to rounding off

Source: Oil and Gas Companies and Directorate General of Hydrocarbons

Figure II.12: Trend of Domestic & Overses Production of Oil & Gas (in MMTOE)



CHAPTER-III



Refining, Transportation & Marketing Infrastructure

Chapter Highlights

As on 31.03.2024, the Petroleum Refining Capacity in India is **256.816 MMTPA** comprising of Public (61.3%) and Private sector/JVs (38.7%).

During FY 2023-24 crude oil processed was **261.546 MMT** which is an increase of 2.5 % in comparison to FY 2022-23 (255.233 MMT). As regards capacity utilisation it is 101.9% against capacity of **256.616 MMTPA** during FY 2023-24 and 101.6% against capacity of **251.216 MMTPA** during FY 2022-23.



Production of Petroleum Products has increased by **3.6%** to **276.058 MMT** in FY 2023-24 over FY 2022-23 (266.539 MMT). During FY 2023-24, Diesel (HSD+LDO) accounted for the highest production share 42.2% followed by Motor Spirit (16.3%), Naphtha (6.6%), Petroleum Coke (5.5%), ATF (6.2%), LPG (4.6%), Fuel Oil (3.8%), Bitumen (1.9%), Lubes & Greases (0.5%) and Kerosene (0.4%).

During FY 2023-24 total installed capacities of six LNG terminals was **47.7 MMTPA**. The maximum capacity utilization was around 95.2% by Dahej LNG terminal and minimum around 14.6% by Mundra LNG Terminal.



As of 01.04.2024, the total length of crude oil pipeline network across India is **10,940 km** with a capacity of **153.1 MMTPA** with capacity utilization of 68.1%.

Product pipelines, including LPG, have a total network of **23,370 km** with **108.2 MMTPA** capacity. During FY 2023-24, product pipeline utilization stands at 66.3%.



As on 31.03.2024, out of 33,080 km total Natural Gas pipeline network in the country, **23,552 km** is operational and 9,528 km (excluding Tie-in connectivity, dedicated & STPL) is under various stages of development.

During FY 2023-24, total PDS Kerosene allocation to States was **10.61 Lakh KL** against which 3.83 Lakh KL (36.2%) was uplifted. During FY 2023-24, Kerosene sale was 3.83 Lakh KL which is 3.19% less as compared to FY 2022-23 (4 Lakh KL).



As on 31.03.2024, the LPG active domestic consumers of Public Sector Marketing Companies was 32.42 crore marking an increase of 3.2% vis-à-vis 31.03.2023 (31.40 crore). Under Pradhan Mantri Ujjwala Yojna (PMUY), around **10.32 crore** connection were issued as on 31.03.2024.

As on 31.03.2024, total number of Retail Outlets (ROs) in India was **90,084** which is an increase of 3.7% over 31.03.2023 (86,855).



The Compressed Natural Gas (CNG) sales increased by 10.8% from **5.103 MMT** in 2022-23 to **5.652 MMT** in 2023-24.

In terms of infrastructure, there are 6,861 CNG stations and 129,82,632 PNG connections (DPNG- 1,29,22,516 Nos., Commercial- 41,360 Nos., Industrial- 18,756 Nos.) in the Country as on 31.03.2024.



Introduction

History of Indian Refining Sector

The Indian Petroleum refining sector has come a long way since crude oil was discovered and the first refinery was set up at Digboi in 1901. The small town of Digboi in the remote northeastern corner of the country is the birthplace of the Oil Industry in India. Commissioned in 1901, the refinery is one of the oldest operating refineries in the world and known as the "Gangotri of the Indian Hydrocarbon sector." Earlier owned and operated by the Assam Oil Company Limited under/Burmah Oil Company, it came into the fold of the Indian Oil Corporation Limited on October 14, 1981 and became Assam Oil Division of Indian Oil Corporation Limited.

The initial refining capacity of the refinery was 500 bbls/day, which was increased to 0.5 MMTPA in 1940. After nationalization, a massive modernization program was executed, and the capacity of the refinery was augmented to 0.65 MMTPA in 1996. Digboi refinery processes High Wax Content Crude and produces Paraffin Wax in addition to distillates and other heavy ends. The paraffin wax produced by the refinery is of the finest quality in the world. Digboi refinery is situated in the midst of pristine biodiversity. The refinery was the first amongst IOCL refineries to become BS-VI compliant.

Till 1947, that was the only refinery with a capacity of 0.50 million metric tonnes per annum (MMTPA). The present Mumbai Refinery of HPCL was the first modern refinery to be set up after independence by Esso in 1954, with a crude refining capacity of 1.25 MMTPA. The capacity was increased to 9.5 MMTPA, in phases. In 1974, the Government of India nationalized ESSO operations and formed Hindustan Petroleum Corporation Limited. Mumbai Refinery sources its crude from both imported and indigenous sources. Imported crude is transported through marine tankers berthed at Jawahar Dweep jetty and pumped to Refinery Crude storage tanks. Indigenous crude mainly Mumbai High (MH) is pumped from ONGC offshore terminal into Refinery Crude storage tanks.The products currently manufactured by Mumbai Refinery are LPG, Naphtha, Motor Spirit (MS), Food Grade Hexane, Aviation Turbine Fuel (ATF), Superior Kerosene Oil (SKO), High Speed Diesel (HSD), Light Diesel Oil (LDO), Low Sulphur Heavy Stock (LSHS), Industrial Furnace Oil (IFO), Rubber Processing Oil, Lube Oil Base Stocks (LOBS), Bitumen, Sulphur, etc. These products are evacuated to the marketing terminals, coastally moved through tankers and most of the product evacuation is carried out to various consumption points through Mumbai Pune Sholapur Pipeline (MPSPL).

This was followed by setting up of refineries by other oil majors, like Burmah Shell and Caltex in Mumbai (BPCL) which was commissioned in 1955 with a crude oil processing capacity of 2.2 MMTPA. The refining capacity has been augmented to the present level of 12 MMT through progressive revamps, the addition of various process units and the incorporation of advanced refining technologies.

This was followed by Visakh Refinery, which was the first East Coast Oil refinery of India, commissioned in 1957 by Caltex Oil Refining India Ltd. (CORIL) with a crude processing capacity of 0.675 MMTPA. The refinery has been expanded in phases to 13.7 MMTPA. Caltex Refinery, along with its marketing facilities were nationalized in 1976 and amalgamated with HPCL in 1978. Visakh Refinery, till 1985, used to receive indigenous and imported crude through tankers cargo up to 30 TMT from the Oil Wharf Jetties located in Visakhapatnam Port Trust (VPT). Offshore Tanker Terminal (OSTT) was commissioned by VPT for crude unloading through Suez max tanker. The draft limitations at Jetty were restricting bigger size vessels. To overcome this limitation, Visakh Refinery constructed Single Point Mooring (SPM) for discharging of Very Large Crude Carrier (VLCC). The products currently manufactured in Refinery are LPG, Propylene, Naphtha, MS, ATF, SKO, HSD, LDO, LSHS, IFO, Bitumen, Sulphur, VLSFO etc. These products are evacuated to the marketing terminals, coastally moved through tankers and also transferred through cross-country pipeline from Visakhapatnam to Secunderabad via Vijayawada (VVSPL).

Simple refinery configuration was adopted in 1950s, comprising crude oil distillation, naphtha/ kerosene/ ATF treatment and catalytic reforming for upgrading naphtha to petrol, with no secondary processing, low energy recoveries and high sulphur fuel oil as internal fuel. The refineries established in the sixties by Govt. undertakings were based on processing of indigenous crude oils of low sulfur origin available in North East and Gujarat basin. Indian PSU refineries started adopting state-of-art modern technologies to upgrade the configuration in line with the international trend and as per the product requirements and quality. Secondary processing facilities like Fluid Catalytic Cracking (FCC) Units to upgrade low value streams to high value middle distillates were installed in many of the refineries.

Configuration of Indian refineries further underwent a major change in late 1980s and early 1990s. There was increased emphasis on maximisation of middle distillates as well as better stability of products, with configurations

showing shift from FCC towards Hydrocracking process and a combination of both. The first hydrocracker in the country was commissioned in Gujarat refinery of IOCL in 1993. All new grassroots refineries started considering installation of hydrocrackers. This led to marked increase in investment requirements for refinery installations.

Refinery configurations in late 1990s were dictated by the product quality up-gradation due to environmental considerations. These include lead free gasoline, low sulfur diesel, fuel oil and other improvement in properties along with the ever increasing demand for middle distillates.

India has witnessed a spectacular growth in the refining sector over the years. From a deficit scenario in 2001, the country achieved self-sufficiency in Refining and today is a major exporter of Quality Petroleum Products. Today India is the global refining hub and is the fourth largest in the world after the United States, China and Russia.

India's refining capacity stands at 256.8 MMT per year, making it the fourth largest in the world. While production is largely in the hands of publicly owned companies, India's largest refineries are privately owned, notably the world's largest refinery is Reliance-owned Jamnagar refinery located on the western coast of Gujarat. During FY 2023-24 crude oil processed was 261.5 MMT which is an increase of 2.5% in comparison to FY 2022-23 (255.2 MMT). As regards capacity utilization it is 101.9% against capacity of 253.9 MMTPA during FY 2023-24 and 101.6% against capacity of 251.216 MMTPA during FY 2022-23. **(details in Table III.1).**

Petroleum Products produced in refineries: (details in Table III.3)

Property and use of petroleum products, with details of industry and sector where it is used are given below:

a) Liquefied Petroleum Gas (LPG):

Liquefied Petroleum Gas (LPG) used in cooking, refrigeration, metal cutting and fabrication. LPG is a clean gas and is several times more efficient than conventional stoves.

Application:

- Domestic: For use in household
- Commercial: For use in hotels, bakeries, canteens, etc
- Auto: For use as fuel in automobiles
- Industrial: For use in production process

b) Motor Spirit / Motor Gasoline (MS / Petrol)

Motor Gasoline, commonly known as Petrol or Motor Spirit. Motor Gasoline that is being currently marketed in India as per BS-VI emission standards meeting Bureau of Indian Standards Specification, IS: 2796-2017.

The nomenclature as per the Bureau of Indian Standards, is Motor Gasoline, whereas, the nomenclature used in Auto Fuel Policy and Control Orders, is Motor Spirit. These different nomenclatures are used for the same product and are used interchangeably. Motor Spirit is of British origin while Gasoline is of American origin.

Application:

Motor Gasoline is meant to be used as a fuel for spark ignition internal combustion engines such as Passenger Cars, 2 Wheelers, 3 Wheelers, etc.

c) Naphtha

Naphtha is a light hydrocarbon liquid, normally refers to a different flammable liquid mixture of hydrocarbons i.e. a distillation product from natural gas/petroleum. Naphtha is a colourless to reddish-brown volatile aromatic liquid. Naphtha is a controlled product under purview of Naphtha Control Order 2000.

Application:

Naphtha is primarily consumed by Power, Fertiliser, Steel and Petrochemical sectors. In Power and Steel sector it is used as a fuel whereas Petrochemical and Fertilizer Units consume it both as fuel or feedstock. Major application of Naphtha is as a chemical feedstock for steam cracking to produce petrochemicals such as Ethylene, Propylene & Pyrolysis Gasoline.

d) ATF (Aviation Turbine Fuel)

ATF is used as fuel for defence and commercial flights. ATF is a specially treated mixture of kerosene based middle distillates.

e) SKO (SUPERIOR KEROSENE OIL)

Kerosene is a highly refined petroleum distillate having clean and efficient burning qualities. SKO is a middle petroleum crude distillate. Its utility as a cooking and lighting fuel makes it the chief fuel used in many rural households in India. It is also used in certain industries viz. Insecticides, fungicides, pesticides etc.

Application:

- As Fuel for Furnaces, Dryers, Boilers, cooking stoves, cooking ranges, ovens, blow lamps, etc.
- Illuminant in wick-fed chimney lamps, wick-fed incandescent mantle devices, also in pressure burner type lamps fitted with mantles
- Also used in certain specific cleaning fluid/degreasing of components.
- As solvent in printing inks

f) HSD (HIGH SPEED DIESEL (BS VI)

High Speed Diesel is a petroleum distillate fuel, suitable for burning in Diesel or Compression Ignition (CI) engines. HSD is used in compression ignition engines of automobiles, railways, power generation and pump drives.

In compliance with Auto fuel policy, currently HSD (BS-VI) is marketed in India. HSD (BS VI) is a Class B product, under PESO Classification.

Application :

- HSD is used as automotive fuel in Compression Ignition Engines in vehicles (cars, buses, off-highway equipment etc.).
- As fuel in special furnaces and gas turbines.

g) LDO (Light Diesel Oil)

LDO is a blend of distillates feed and residual oil. It is primarily recommended for stationary or slow speed diesel engines and as Industrial Fuel. LDO is used in medium and slow speed diesel engines with less than 750 rpm typically. Light Diesel Oil (LDO) is a Class C product, under PESO classification.

Application:

- As Fuel in Boilers, Furnaces etc. for heating purposes.
- Slow speed Generator sets, marine engines.
- As Fuel in Thermal Power generation.



- As Fuel in Thermic Fluid Boilers
- As Fuel in Hot-Mix plant.

h) Fuel Oil

Fuel oil is a dark viscous residual fuel obtained by blending mainly heavier components from crude distillation unit.

Application:

- FO 180 is mainly used as a Fuel for combustion equipment in Industries for firing Boilers, Thermic Fluid Heaters, Industrial Furnaces, Foundry furnaces, Glass furnaces etc.
- Slow-speed engines for captive power generation.

i) Bitumen

Bitumen is a black viscous mixture of hydrocarbons, valued for a variety of characteristics viz; waterproof, ductile, adhesive, chemically inert, durable etc. Obtained from the heaviest fraction from the distillation of Crude oils, it is marketed in a wide range of grades, ranging from soft to hard.

Application:

Paving of roads, surfacing airfield runways and taxi tracks, hydraulic application such as canal lining river bank protection, dam construction and sea defenses. It is also used for Industrial applications like roofing, felt manufacture, printing ink manufacturing, electrical cable / junction boxes, mastic flooring, water proofing etc.

j) Petroleum Coke

Pet-coke is a solid heavy product, last in the line of refining. To increase middle distillate yields, the refinery has a Delayed Coker Unit, wherein middle distillates are extracted to maximum possible and pet-coke is formed of the remaining crude oil. Used as source of energy in many industries, primarily cement and power, pet-coke produced in refinery is of fuel grade

k) Sulphur

Sulphur is a by-product produced during processing of crude and finished products. Sulphur, present in crude, is treated as a contaminant and is undesirable in fuel products. The refinery has a dedicated Sulphur Recovery Unit, wherein sulphur is extracted in elemental form. Widely used in manufacture of sulphuric acid, fertilizers and explosives, the refinery's facilities can handle sulphur dispatch in solid and liquid form.

Application:

- It is used as raw material in the manufacture of acid, fertilizers, drugs, rubber industries, paints, insecticides, detergents, paints, pigments, explosives etc.
- Also used in sugar production and as modifier for bitumen.

Gross Refinery Margin

The Gross Refining Margin (GRM) is a crucial metric in the oil refining industry. The GRM represents the difference between the total value of petroleum products produced by an oil refinery (output) and the cost of the raw material used (input), which is crude oil. It's typically expressed in US dollars per barrel. A higher GRM indicates better profitability for the refinery. The formula for calculating GRM is:

GRM = Total Value of Refined Products–Cost of Crude Oil

Specific Energy Consumption (MBN number) of Oil Refineries

The refining industry is very energy intensive making it the single largest contributor of cash expenses of Refineries. Keeping this in view, refineries have since long been focusing on energy efficiency improvement. To take care of complexity, refineries assess energy consumption in terms of specific energy consumption. Specific Energy Consumption written as SEC or MBN (MBTU/Bbl/NRGF) where MBTU is Net energy & loss in Refinery (Million British Thermal Unit) and NRGF is energy factor of a refinery **(details in Table III.8).**

Energy conservation measures have helped the industry in reducing the Specific Energy Consumption (MBN), measured in terms of MBTU/bbl/NRGF by about 30% during the period 2005-06 to 2023-24. As Fuel & Loss varies with the complexity of the refinery, the MBN methodology was developed by CHT to capture Fuel & Loss along with complexity. The MBN methodology was revamped to reflect technological trends based on input from consultants and reporting has been changed to New MBN from 2015-16. Various Energy Saving measures and new technology are being adopted by the refineries to improve Specific Energy Consumption.

Distillate Yield of PSU Refineries

The distillate yield and quality of petrol/diesel has been improved progressively by PSU refineries through adoption of modern technologies. For standardization of distillate yield, all Indian refineries has adopted a standard distillate yield methodology developed by CHT from 2020-21 onwards.

The PSU refineries' average distillate yield (wt% on crude) has improved from 73.3% in 2005-06 to 78.5% in FY 2023-2. **(details in Table III.9).**

Improving distillation yield in a refinery involves optimizing several factors to increase the efficiency of separating crude oil into its high value products, some of the factors are Optimized Feed Pre-processing, advanced control strategies for efficient operation, better fractionation, Improved feedstock selection, Crude oil or feedstocks selection, advanced process modelling and simulation.

By focusing on these strategies and exploring new technologies, refineries can enhance distillation yield, improving the overall efficiency and profitability of their operations.

Status of LNG Terminals in India

Liquefied Natural Gas (LNG) - Natural Gas which has been liquefied at (Minus) 160 degree Centigrade. Natural Gas is liquefied to facilitate transportation in large volumes in cryogenic tankers across seas / land.

Uses of Natural Gas in various sectors are:

Sector	Natural Gas is Used
Power Sector	As fuel for base load power plants In combined cycle/co-generation power plants
Fertilizer Industry	As feed stock in the production of ammonia and urea
Industrial	As an under boiler fuel for raising steam As fuel in furnaces and heating applications
Domestic and commercial	It is used as PNG and CPNG for cooking and fuel respectively.
Automotive	It is used as an eco-friendly fuel.
Petrochemicals	As the raw material from which a variety of chemical products e.g. methanol, are derived

LNG Terminals

Natural gas arrives at LNG terminals as super-cooled LNG, which is then warmed up in regasification units located at the terminal to regenerate natural gas in its gaseous form. This regassified LNG (RLNG) is then supplied through pipelines spanning across the country. Alternatively, LNG can also be delivered using LNG trucks.

Operational LNG Terminal Capacity as on 31.03.2024 is 47.7 MMTPA and 25.1 MMTPA capacity LNG Terminals are under construction (detail in III.10).

LNG Storage and Transportation

Natural gas in the form of LNG offers remarkable flexibility in storage and transportation. On land, natural gas is conveniently delivered to consumption centers in its gaseous form through pipelines. But if pipeline transportation is not an option available, natural gas is converted and stored as Liquefied Natural Gas (LNG) at minus 162 degrees Celsius, by cooling it down using a refrigeration cycle. At this super-cool temperature, natural gas turns into its liquid form. The resulting LNG occupies only 1/600th of its original gaseous volume and is thus transported efficiently in large specialized tanker ships that have the requisite onboard cryogenic storage facilities (thermally insulated tanks) to keep LNG in liquid form.

Pipeline Network in India

Oil and gas pipelines connect refineries with consumers and ports and storage facilities. India has an extensive pipeline network for transporting crude oil (detail in III.11), petroleum products (detail in III.13), and natural gas (detail in III.12). This pipeline network in India is owned and operated by different companies. The Pipeline Network in India for transporting petroleum products is vast and spreads across different regions. They also connect oil fields to refineries and major consumption centers. This allows for efficient mass transportation of fuel resources within the country. Indian Oil Corporation operates around 16,416 kilometers of crude oil and petroleum product pipelines. GAIL operates most of the natural gas pipelines in India. In 1987, the first interstate pipeline in India was completed and put into service. GAIL was the first company to lay a pipeline, and it was the Hazira-Vijaipur-Jagdishpur pipeline that was completed in 1987. The Petroleum and Natural Gas Regulatory Board (PNGRB) is responsible for regulating the pipeline network for the transportation of oil, gas, and petrochemicals in India. It regulates tariffs and issues licenses for new pipelines.

State-wise PDS Kerosene Allocated:

Kerosene is a distillate petroleum product that serves as a primary source of fuel for lighting and also used to start the wood or cow dung-fired stoves used for cooking by poor and marginal households in India. Subsidised kerosene is distributed to eligible beneficiaries through a network of agent-appointed Fair Price Shops (FPSs). Moreover, critics of the kerosene subsidy argue that kerosene is a heavily polluting fuel and most of the kerosene being subsidised for domestic purposes is diverted for commercial use. It is evident that kerosene is far from losing its status as an essential commodity in rural India. It should also make facilities and infrastructure available to beneficiaries to enable an easier shift to alternatives. The Centre's push to phase out kerosene is a work in progress, a decade after the move towards rationalizing the allocation of the fuel to states. For now, most states still seek kerosene allocations (detail in III.17) and users continue demanding the fuel. The Centre has phased out budgetary subsidies for this fuel.

LPG Domestic Consumers

In India, the consumption of LPG has been on an increasing trend, marking a notable shift toward lower carbon emission fuels. However, the journey towards transitioning to cleaner fuels is far from over. While LPG is a staple for cooking, it's significance extends beyond for its reliability and versatility across numerous commercial and industrial applications. From keeping hospitality warm and welcoming to powering laundry systems and industrial processes like ceramic baking, galvanizing, agriculture, and more, LPG offers precise heat control and clean efficiency. With over 100 industrial applications, LPG empowers businesses to excel while minimizing environmental impact challenges in LPG usage as fuel. As on 1st April 2024 Active LPG Domestic Consumers in the country are 3242.184 Lakhs (detail in III.19).

Pradhan Mantri Ujjwala Yojana (PMUY)

Traditionally, the rural population in India was heavily dependent on fuels such as wood, coal, cow dung, kerosene etc., for cooking purpose. It was mainly, due to issues relating to affordability, accessibility and awareness. These traditional fuels cause extreme harm to nature & environment. The solution to this required switching the rural populace to cleaner and more economical cooking fuels.

Accordingly, focusing on rural areas, the Government launched Pradhan Mantri Ujjwala Yojana (PMUY) on 01.05.2016 to provide "Swachchh Indhan, Behtar Jeewan" to all.

Under this scheme, the target of releasing 8 crore LPG connections to adult women of poor households was successfully achieved on 07.09.2019. Further Ujjwala 2.0 scheme was launched with the target to release 1 Crores LPG connections. The target of releasing additional 1 crore LPG connections under Ujjwala 2.0 was achieved on 31.01.2022. The target was further increased to 1.6 Crores under Ujjwala 2.0 which has been achieved on 31.12.2022.

Subsequently, Government of India approved release of additional 75 lakh connections under PMUY Scheme over the period of three years from FY 2023-24 to FY 2025-26. Total LPG connections under Pradhan Mantri Ujjwala Yojna as on 01.07.2024 are 10.33 Crores (detail in III.21).

PAHAL (DBTL) scheme

The Government, as a measure of Good Governance has introduced direct credit of subsidy to the bank accounts of LPG consumers through DBTL-PAHAL scheme. The Scheme was launched on 15th November 2014, initially in 54 districts and subsequently extended to 622 districts from 01.01.2015. This Government initiative aimed to rationalize subsidies based on approach to cut subsidy leakages, but not subsidies per se. The applicable subsidy is directly transferred into the bank account of the beneficiaries. PAHAL has been recognized by the "Guinness Book of World Records" as the World's Largest Direct Benefit Scheme.

PAHAL has helped in identifying 'ghost' accounts, multiple accounts and inactive accounts. This has helped in curbing diversion of subsidized LPG to commercial purposes. As on 01st July, 2024, out of 32.67 crore LPG Consumer, more than 30.19 crore LPG consumers have joined the PAHAL Scheme.

State-wise Number of LPG Distributors

Total LPG Distributors in the country as on 01.04.2024 are 25,481 Nos. including Sheheri Vitrak, Rurban Vitrak, Gramin Vitrak and Durgam Kshetriya Vitrak (detail in III.20).

Type of distributorship:

Sheheri Vitrak: LPG distributorship located in Urban Area, which provide service to LPG customers located within the Municipal limits of the Metro City/City/Town are called Sheheri Vitrak.

Rurban Vitrak: the word rural urban means LPG distributor located in Urban area and also providing service to the LPG customers in specified Rural Area generally covering all villages falling within 15 Km from the municipal limits of the LPG distributorship location and or area specified by the respective OMCs. LPG distributors servicing this area are called Rurban Vitrak.

Gramin Vitrak: LPG distributorship located in rural area is called as Gramin Vitrak and service the LPG customers of the specified rural area. Generally it covers all villages falling within 15 KM from the boundary limits of the LPG Distributorship location and or the area specified by the respective OMCs.

Durgam Kshetriya Vitrak: LPG distributorship in difficult and special areas (like Hilly regions, forests area, Tribal inhabited area, sparsely populated distributed areas, islands, left wing extremism (LWE) affected areas) will be set up where setting up of gramin and Rurban Vitrak are not feasible. Such LPG distributors is called as Durgam Kshetriya Vitrak.

POL (Petroleum Oil Terminal) is an industrial facility that stores, receives, and distributes petroleum products. POL terminals are also known as oil terminals, oil depots, or tank farms. State-wise Number of Operational POL Terminal/Depots (detail in III.23).

Aviation Fuelling Station in the Country

An aviation fuel station, also known as an airplane fuel facility, is a facility that stores and supplies aviation fuel for aircraft. Aviation fuel stations are critical for airports to operate and are designed to be safe and efficient. Aviation fuels are petroleum based fuels or petroleum and synthetic fuel blends, used to power aircraft. They have more stringent requirements than fuels used for ground use such as heating and road transport and contain additives to enhance or maintain properties important to fuel performance or handling. As on 01 April 2024 there are 288 Nos. of Aviation Fueling Station in India (detail in III.24). Maharashtra has maximum number (26 Nos.) of Aviation Fuel station in the country followed by Tamil Nadu (25 Nos.)

III.1: Refinery Capacity and Crude Oil Processed

(Figures in TMT)

Refinery	2021-22			2022-23 (P)			2023-24 (P)			2024-25
	Capacity (31.03.2021)	Crude Processed	Utilisation (in %)	Capacity (31.03.2022)	Crude Processed	Utilisation (in %)	Capacity (31.03.2023)	Crude Processed	Utilisation (in %)	Capacity (31.03.2024)
1	2	3	4	5	6	7	8	9	10	11
A. CPSEs Refineries (1 to 19)	**149366**	**145491**	**97.4**	**151716**	**161499**	**106.4**	**157116**	**165886**	**105.6**	**157316**
1. IOCL, Guwahati	1000	730	73.0	1000	1080	108.0	1000	1000	100.0	1200
2. IOCL, Barauni	6000	5620	93.7	6000	6785	113.1	6000	6618	110.3	6000
3. IOCL, Koyali	13700	13474	98.4	13700	15567	113.6	13700	15202	111.0	13700
4. IOCL, Haldia	8000	7305	91.3	8000	8506	106.3	8000	8060	100.7	8000
5. IOCL, Mathura	8000	9123	114.0	8000	9573	119.7	8000	9191	114.9	8000
6. IOCL, Digboi	650	708	108.9	650	713	109.7	650	710	109.3	650
7. IOCL, Panipat	15000	14849	99.0	15000	13810	92.1	15000	14305	95.4	15000
8. IOCL, Bongaigaon	2350	2639	112.3	2700	2775	102.8	2700	3009	111.4	2700
9. IOCL, Paradip	15000	13217	88.1	15000	13599	90.7	15000	15213	101.4	15000
B. Total IOCL (1 to 9)	**69700**	**67665**	**97.1**	**70050**	**72408**	**103.4**	**70050**	**73308**	**104.7**	**70250**
10. BPCL, Mumbai	12000	14437	120.3	12000	14546	121.2	12000	15052	125.4	12000
11. BPCL, Kochi	15500	15402	99.4	15500	16017	103.3	15500	17314	111.7	15500
12. BORL, Bina	7800	7410	95.0	7800	7841	100.5	7800	7133	91.4	7800
C. Total BPCL (10 to 12)	**35300**	**37248**	**105.5**	**35300**	**38404**	**108.8**	**35300**	**39499**	**111.9**	**35300**
13. HPCL, Mumbai	7500	5558	74.1	9500	9804	103.2	9500	9640	101.5	9500
14. HPCL, Vishakhapatnam	8300	8410	101.3	8300	9287	111.9	13700	12689	92.6	13700
D. Total HPCL (13+14)	**15800**	**13968**	**88.4**	**17800**	**19091**	**107.3**	**23200**	**22329**	**96.2**	**23200**
15. CPCL, Manali	10500	9040	86.1	10500	11316	107.8	10500	11642	110.9	10500
16. CBRPL*	-	-	-	-	-	-	-	-	-	-
E. Total CPCL (15+16)	**10500**	**9040**	**86.1**	**10500**	**11316**	**107.8**	**10500**	**11642**	**110.9**	**10500**
17. NRL, Numaligarh	3000	2624	87.5	3000	3091	103.0	3000	2510	83.7	3000
18. MRPL, Mangalore	15000	14871	99.1	15000	17116	114.1	15000	16533	110.2	15000
19. ONGC, Tatipaka	66	75	113.8	66	73	110.6	66	65	99.1	66
F. Pvt/JVs Refineries	**99500**	**96213**	**96.7**	**99500**	**93733**	**94.2**	**99500**	**95660**	**96.1**	**99500**
20. HMEL, Bathinda	11300	13027	115.3	11300	12735	112.7	11300	12648	111.9	11300
21. RIL, Jamnagar	33000	34757	105.3	33000	34433	104.3	33000	34390	104.2	33000
22. RIL, SEZ-Jamnagar	35200	28264	80.3	35200	27872	79.2	35200	28300	80.4	35200
G. Total RIL (21+22)	**68200**	**63021**	**92.4**	**68200**	**62305**	**91.4**	**68200**	**62690**	**91.9**	**68200**
23. NEL, Vadinar	20000	20164	100.8	20000	18692	93.5	20000	20322	101.6	20000
H. Total Crude Oil Processed (1 to 23)	**248866**	**241704**	**97.1**	**251216**	**255232**	**101.6**	**256616**	**261546**	**101.9**	**256816**

Note: Total may not tally due to rounding off. 2. Capacity utilisation is equal to crude oil processsed in during year divided by refineing capacity at the 1st April of initial of year*100
* Cauvery Basin Refinery and Petrochemicals Limited

Source: Oil & Gas Companies

III.2: Refinery-wise Production of Petroleum Products

(Figures in TMT)

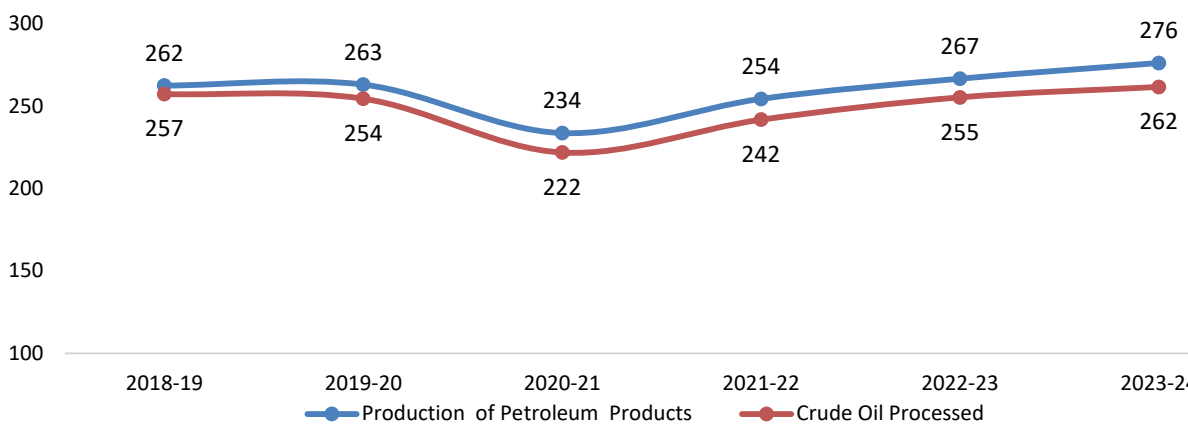
Refinery	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	Production % Share in 2023-24 of Total 2023-24
1	2	3	4	5	6	7	8
A. CPSEs Refineries (1 to 19)	**148354**	**144425**	**126461**	**137097**	**151481**	**157072**	**56.9**
1. IOCL, Guwahati	1030	1151	1008	905	1310	1210	0.4
2. IOCL, Barauni	6276	6073	5166	5082	6275	6199	2.2
3. IOCL, Koyali	12908	12592	11071	12920	14732	14674	5.3
4. IOCL, Haldia	7450	5925	6206	6689	8034	7656	2.8
5. IOCL, Mathura	9560	8793	8747	8991	9443	9130	3.3
6. IOCL, Digboi	676	665	604	717	714	705	0.3
7. IOCL, Panipat	15778	15366	13651	15208	13700	14562	5.3
8. IOCL, Bongaigaon	2337	1863	2314	2428	2574	2839	1.0
9. IOCL, Paradip	13230	14240	11159	11860	12274	13818	5.0
B. Total IOCL (1 to 9)	**69245**	**66668**	**59925**	**64799**	**69056**	**70794**	**25.6**
10. BPCL, Mumbai	14193	14514	12519	13862	13941	14499	5.3
11. BPCL, Kochi	15149	15726	12605	14491	14967	16341	5.9
12. BORL, Bina**	5106	7219	5456	6623	6946	6435	2.3
C. Total BPCL (10 to 12)	**34448**	**37459**	**30580**	**34976**	**35854**	**37275**	**13.5**
13. HPCL, Mumbai	8202	7645	6952	5114	9152	9034	3.3
14. HPCL, Vishakhapatnam	9095	8292	8408	7776	8489	11664	4.2
D. Total HPCL (13+14)	**17297**	**15937**	**15360**	**12890**	**17642**	**20698**	**7.5**
15. CPCL, Manali	9254	9329	7653	8371	10555	10982	4.0
16. CPCL, Narimanam	425	1	0	0	0	0	0.0
E. Total CPCL (15+16)	**9679**	**9330**	**7653**	**8371**	**10555**	**10982**	**4.0**
17. NRL, Numaligarh	2882	2300	2741	2583	3073	2502	0.9
18. MRPL, Mangalore	14741	12651	10124	13407	15231	14758	5.3
19. ONGC, Tatipaka	63	80	77	72	70	64	0.0
F. Pvt/JVs Refineries	**109070**	**113756**	**102840**	**113157**	**111570**	**115504**	**41.8**
20. HMEL, Bathinda	**11797**	**11601**	**9617**	**12267**	**11551**	**12296**	**4.5**
21. RIL, Jamnagar	33334	35061	35771	35979	35807	35805	13.0
22. RIL, SEZ-Jamnagar	45761	47313	40912	45529	46280	47716	17.3
G. Total RIL (21+22)	**79095**	**82374**	**76683**	**81507**	**82087**	**83521**	**30.3**
23. NEL, Vadinar	18178	19780	16540	19383	17932	19687	7.1
H. Refineries' Production (A+F)	**257424**	**258181**	**229301**	**250254**	**263051**	**272576**	**98.7**
I. Fractionators' Production	**4931**	**4760**	**4212**	**4051**	**3493**	**3481**	**1.3**
J. Total Production of Petroleum Products (H+I)	**262356**	**262940**	**233513**	**254305**	**266544**	**276057**	**100.0**

Note: Total may not tally due to rounding off *: BORL Bina merged with BPCL in July, 2022 P: Provisional

**: CPCL CBR refinery is under shutdown due to limitation in meeting required Product specifications with the existing configuration.

Source: Oil & Gas Companies

Figure III.1: Trends of Crude Oil Processed & Production of Petroleum Products (in MMT)



III.3: Refinery-wise and Product-wise Production of Petroleum Products during 2023-24 (P)

(Figures in TMT)

Refinery/Plant	LPG	Motor Spirit	Naphtha	ATF	SKO	HSD	LDO	Fuel Oil	Bitumen	Lube Oil	Petroleum Coke	Others Products	Total Production	Fuel & Losses	Crude Processed	Total Input/ Output
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. IOCL, Guwahati	40	245	35	65	13	723	0	0	0	0	61	28	**1210**	115	1000	**1344**
2. IOCL, Barauni	365	1509	253	186	73	3307	0	159	106	0	214	27	**6199**	584	6618	**6791**
3. IOCL, Koyali	467	2143	1228	494	149	7176	51	1341	449	0	782	393	**14674**	1434	15202	**16131**
4. IOCL, Haldia	280	924	605	456	214	3505	77	304	478	232	391	190	**7656**	780	8060	**8468**
5. IOCL, Mathura	443	1996	16	811	43	3550	0	1131	963	0	0	178	**9130**	637	9191	**9745**
6. IOCL, Digboi	12	123	0	0	0	393	0	105	0	0	38	34	**705**	83	710	**794**
7. IOCL, Panipat	647	1901	1413	1360	1	6985	101	416	353	0	895	490	**14562**	1374	14305	**15913**
8. IOCL, Bongaigaon	213	659	28	23	4	1694	15	6	0	0	111	86	**2839**	366	3009	**3169**
9. IOCL, Paradip	662	3455	181	578	6	6318	0	13	25	0	1199	1381	**13818**	1574	15213	**15371**
10. BPCL, Mumbai	440	2329	1315	783	32	6802	140	1358	544	368	0	389	**14499**	553	15052	**15199**
11. BPCL, Kochi	1216	4282	252	630	47	8115	7	-1	283	0	821	690	**16341**	1498	17314	**17543**
12. BORL, Bina	208	1203	1	545	62	4038	0	0	0	0	243	135	**6435**	751	7133	**7133**
13. HPCL, Mumbai	479	1822	431	473	97	3535	119	757	609	505	0	206	**9034**	698	9639	**9707**
14. HPCL, Vishakhapatnam	466	1799	792	107	61	5698	147	1822	580	0	0	191	**11664**	926	12689	**12689**
15. CPCL, Manali	404	1191	1194	1050	30	5135	0	110	669	247	550	401	**10982**	1064	11642	**12083**
16. NRL, Numaligarh	42	606	-18	35	27	1697	0	0	0	0	68	45	**2502**	284	2510	**2683**
17. MRPL, Mangalore	1028	2266	49	2091	49	6205	0	292	126	0	816	1835	**14758**	1827	16533	**16586**
18. ONGC, Tatipaka	0	0	26	0	0	13	0	20	0	0	0	5	**63**	2	65	**66**
19. HMEL,Bathinda	677	1979	461	222	69	5846	0	0	252	0	507	2316	**12327**	699	12648	**12911**
20. RIL, Jamnagar	646	1707	6573	3472	0	6435	0	621	0	0	3550	12800	**35805**	4325	34390	**41455**
21. RIL, SEZ-Jamnagar	1166	9297	2841	1836	0	18458	0	566	0	0	3474	10079	**47716**	5724	28300	**53575**
22. NEL, Vadinar	1197	4045	96	1861	0	10180	0	-1	56	0	1841	411	**19687**	1688	20322	**20837**
A. Total Refineries' Production (1 to 22)	**11099**	**45480**	**17774**	**17076**	**978**	**115809**	**657**	**9020**	**5492**	**1352**	**15561**	**32310**	**272607**	**26919**	**261545**	**300386**
B. Fractionators	**1678**	**0**	**962**	**36**	**5**	**59**	**0**	**1**	**0**	**0**	**0**	**740**	**3481**	**-**	**-**	**-**
C. Grand Total (A+B)	**12777**	**45480**	**18736**	**17113**	**983**	**115867**	**657**	**9021**	**5492**	**1352**	**15561**	**33050**	**276088**	**-**	**-**	**-**

Note: 1.Total may not tally due to rounding off. P: Provisional

2. Others include Propylene, Solvents (Hexane, Benzene, Toluene, Xylene and Specialty solvents), Reformate, MTO, Carbon Black Feed Stock, Sulphur etc.

Source: Oil & Gas Companies

III.4: Production of Petroleum Products (Financial Year-wise)

(Figures in TMT)

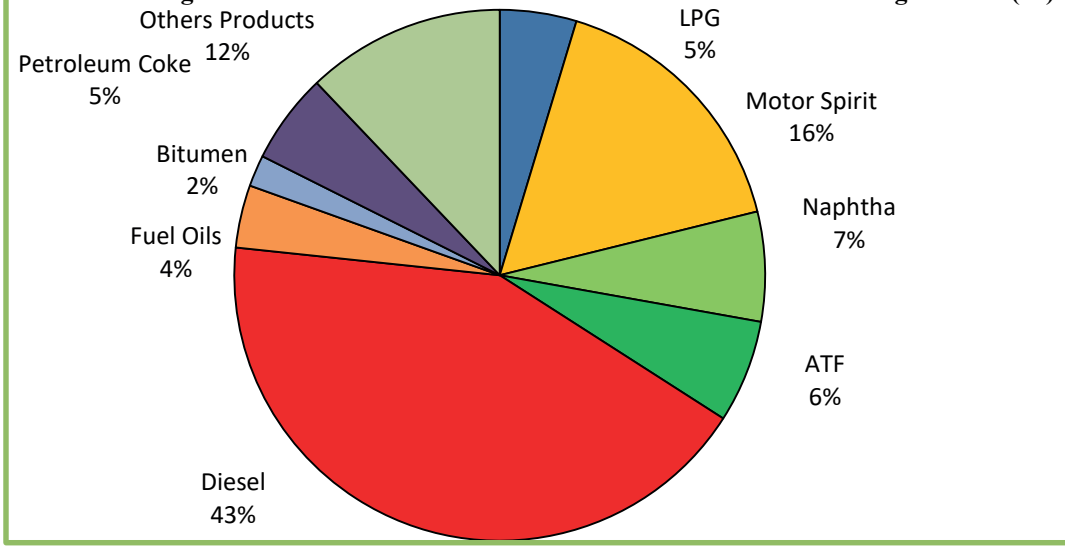
Products	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	Production % Share in 2023-24 of Total 2023-24
1	2	3	4	5	6	7	8
LPG	12786	12823	12072	12238	12831	12779	4.6
Motor Spirit	38039	38616	35779	40238	42817	45081	16.3
Naphtha	19786	20679	19403	19381	17036	18274	6.6
ATF	15479	15238	7092	10294	15039	17124	6.2
Kerosene	4072	3211	2393	1913	941	983	0.4
HSD	110535	111221	100441	107176	113776	115943	42.0
LDO	702	620	729	805	646	657	0.2
Total Fuel Oils	10032	8609	7242	8921	10263	10442	3.8
a) Furnace Oil	9598	8214	6882	8509	9590	9698	3.5
b) LSHS/HHS/RFO	434	395	360	412	673	744	0.3
Lube Oils	949	932	1069	1173	1445	1352	0.5
Bitumen	5803	5244	5245	5111	4914	5240	1.9
Petroleum Coke	14676	15528	12655	15508	15390	15054	5.5
Others	29503	30219	29393	31547	31440	33129	12.0
Total Production of Petroleum Products	**262361**	**262940**	**233513**	**254305**	**266539**	**276058**	**100**
of which							
Refineries	**257430**	**258181**	**229301**	**250254**	**263047**	**272586**	**98.7**
Fractionators	**4931**	**4760**	**4212**	**4051**	**3492**	**3472**	**1.3**

Note: 1.Total may not tally due to rounding off. P: Provisional

2. Others include Propylene, Solvents (Hexane, Benzene, Toluene, Xylene and Specialty solvents), Reformate, MTO, Carbon Black Feed Stock, Sulphur etc.

Source: Oil Companies

Figure III.2: Distribution of Petroleum Products Produced during 2023-24 (%)



III.5: Gross Refining Margins (GRM) of Oil Refineries

(Figures in $/bbl)

Refinery	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
1	2	3	4	5	6	7
A. PSUs Refineries						
1. IOCL, Guwahati**	16.35	14.22	31.87	35.95	36.40	23.03
2. IOCL, Barauni	3.86	-1.24	3.98	12.68	20.68	14.00
3. IOCL, Koyali	4.87	1.90	2.83	8.22	18.78	10.36
4. IOCL, Haldia	5.36	-2.44	4.10	8.69	18.99	9.81
5. IOCL, Mathura	4.65	-1.03	5.03	11.35	16.01	12.86
6. IOCL, Digboi**	22.74	17.52	28.62	34.96	36.62	23.08
7. IOCL, Panipat	4.66	-0.25	3.23	9.26	18.63	10.73
8. IOCL, Bongaigaon**	16.94	10.49	28.89	33.51	29.19	25.01
9. IOCL, Paradip	4.46	-1.80	5.35	10.24	19.25	10.96
B. Total IOCL	**5.41**	**0.08**	**5.64**	**11.25**	**19.52**	**12.05**
10. BPCL, Mumbai	4.92	2.88	3.76	8.73	15.20	9.62
11. BPCL, Kochi	4.27	2.17	4.36	9.43	21.01	15.39
12. BPCL, Bina	9.80	5.60	6.20	11.00	28.18	20.70
C. Total BPCL	**4.58**	**2.51**	**4.06**	**9.09**	**20.24**	**14.10**
14. HPCL, Mumbai	5.79	3.63	4.10	7.60	14.82	10.35
15. HPCL, Vishakhapatnam	4.31	-1.30	3.67	6.92	9.20	8.12
D. Total HPCL	**5.01**	**1.02**	**3.86**	**7.19**	**12.09**	**9.08**
16. CPCL, Manali	3.70	-1.18	7.14	8.85	11.91	8.64
17. NRL, Numaligarh**	28.11	24.33	37.23	43.46	35.82	29.72
18. MRPL, Mangalore	4.06	-0.23	3.71	8.72	9.88	10.40
Private Refineries						
19. RIL's Refinery	9.20	8.90	*	*	*	*
20. NEL, Vadinar	6.97	5.88	*	*	*	*
Joint Venture Refineries						
21. HMEL, Bhatinda	9.42	*	*	*	*	*

*: Not available **: GRM of North Eastern refineries are including excise duty benefit. P: Provisional

Source: Centre for High Technology

III.6: GRM of NE refineries without Excise Duty benefit

(Figures in $/bbl)

Refinery	2018-19	2019-20	2020-21	2021-22	2022-23 (P)	2023-24 (P)
1	2	3	4	5	6	7
1. IOCL, Guwahati	0.63	-3.34	2.13	11.43	19.82	9.46
2. IOCL, Digboi	8.84	3.35	3.71	10.78	22.61	10.74
3. IOCL, Bongaigaon	4.21	1.84	3.15	9.33	15.6	11.65
4. NRL, Numaligarh	11.8	7.99	4.09	14.33	19.86	13.17

Source: Centre for High Technology

III.7: Specific Energy Consumption (MBN number) of Oil Refineries

Refinery	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
1	3	4	5	6	7	7
A. PSUs Refineries						
1. IOCL, Guwahati	112.3	121.2	123.7	121.4	105.0	103.6
2. IOCL, Barauni	77.9	75.9	78.1	76.8	71.9	71.6
3. IOCL, Koyali	75.3	77.4	82.6	79.5	71.1	73.7
4. IOCL, Haldia	76.6	88.3	89.3	86.9	76.7	71.1
5. IOCL, Mathura	63.9	65.8	63.1	62.7	60.7	61.5
6. IOCL, Digboi	101.8	101.7	98.1	88.4	97.3	91.5
7. IOCL, Panipat	64.1	64.5	68.0	63.6	60.6	62.8
8. IOCL, Bongaigaon	88.6	96.8	108.5	111.1	107.2	99.6
9. IOCL, Paradip	66.8	64.1	69.0	68.3	61.8	63.3
B. Total IOCL	**71.0**	**71.8**	**75.5**	**73.7**	**68.8**	**68.9**
10. BPCL, Mumbai	64.7	63.0	64.4	64.1	63.7	60.9
11. BPCL, Kochi	71.6	68.2	69.1	67.1	65.4	62.8
12. BPCL, Bina	69.2	64.8	74.1	69.8	67.2	66.0
C. Total BPCL	**68.8**	**66.1**	**68.5**	**65.8**	**64.9**	**62.9**
14. HPCL, Mumbai	82.8	84.8	98.2	105.8	75.9	75.0
15. HPCL, Vishakhapatnam	77.3	84.4	81.2	85.3	80.3	80.5
D. Total HPCL	**80.0**	**84.6**	**89.1**	**93.7**	**77.8**	**77.8**
16. CPCL, Manali	83.0	81.5	86.7	82.8	75.2	72.2
17. CBRPL**	118.1	-	-	-	-	
E. Total CPCL	**83.7**	**81.5**	**86.7**	**82.8**	**75.2**	**72.2**
18. NRL, Numaligarh	65.9	64.8	64.4	63.5	61.7	61.6
19. MRPL, Mangalore	74.2	75.3	81.4	73.5	71.6	72.9
F. Private Refineries						
20. RIL, Jamnagar	49.0	50.4	48.1	49.0	47.5	*
21. RIL, SEZ-Jamnagar	48.2	49.1	47.2	46.8	43.9	*
G. Total RIL	**48.6**	**49.7**	**47.6**	**47.8**	**46.0**	*****
22. NEL, Vadinar	61.1	59.7	65.2	62.8	58.2	*
H. Joint Venture Refineries						
23. HMEL, Bathinda	59.2	59.9	65.7	59.4	56.6	*
I. Grand Total	**62.6**	**63.0**	**64.9**	**63.9**	**60.4**	**69#**

*: Not Available ^: Overall of PSU Refineries Only

P: Provisional ** Cauvery Basin Refinery and Petrochemicals Limited

Source: Centre for High Technology

III.8: Distillate Yield of PSU Refineries

(Distillate %)

Refinery	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
1	2	3	4	5	6	7
1. IOCL, Guwahati	81.00	83.50	82.11	86.40	81.51	79.90
2. IOCL, Barauni	87.90	86.90	87.15	85.90	83.83	83.80
3. IOCL, Koyali	81.00	79.50	72.08	76.70	73.97	73.90
4. IOCL, Haldia	69.90	69.00	72.24	72.20	74.76	73.10
5. IOCL, Mathura	76.10	75.60	72.30	74.90	71.75	71.30
6. IOCL, Digboi	75.80	72.50	67.89	79.20	72.82	70.80
7. IOCL, Panipat	82.80	84.80	80.20	83.90	78.93	79.10
8. IOCL, Bongaigaon	84.80	80.80	84.81	81.30	80.04	82.30
9. IOCL, Paradip	80.80	80.70	79.18	79.60	79.51	79.90
A. Total IOCL	**80.36**	**80.20**	**77.18**	**79.20**	**77.01**	**77.00**
10. BPCL, Mumbai	82.20	84.90	83.66	84.40	85.50	80.90
11. BPCL, Kochi	82.50	84.20	86.40	85.40	85.40	85.60
12. BPCL, Bina	-	-	-	84.30	85.30	84.50
B. Total BPCL	**82.36**	**84.50**	**83.72**	**84.90**	**84.80**	**83.00**
13. HPCL, Mumbai	77.60	77.00	76.23	70.40	77.40	77.90
14. HPCL, Vishakhapatnam	74.50	72.10	74.38	70.70	68.00	72.10
C. Total HPCL	**76.00**	**74.40**	**75.21**	**70.60**	**72.80**	**74.60**
15. CPCL, Manali	75.30	77.60	78.41	74.90	78.30	78.40
16. CBRPL**	77.30	-	-	-	-	-
D. Total CPCL	**75.90**	**78.82**	**78.41**	**77.25**	**78.27**	**78.41**
17. NRL, Numaligarh	87.10	83.00	86.36	85.70	89.93	86.50
18. MRPL, Mangalore	76.80	76.70	78.09	78.80	77.90	79.40
E. Grand Total (PSUs)	**79.70**	**80.00**	**78.63**	**78.10**	**78.70**	**78.50**

P: Provisional ** Cauvery Basin Refinery and Petrochemicals Limited

Source: Centre for High Technology

III.9: Status of LNG Terminals in India

Terminal	Promoters	Capacity (MMTPA) as on 31.03.2024	Capacity Utilization (%)					
			2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
1	2	3	4	5	6	7	8	9
Opertional LNG Terminal								
1. Dahej (Gujarat)	Petronet LNG Ltd. (PLL)	17.5	106.5	102.1	93.7	87.5	77.8	95.2
2. Kochi (Kerala)		5.0	9.3	16.6	18.0	20.7	18.6	20.8
3. Hazira (Gujarat)	Hazira LNG Pvt. Ltd. (HLPL)	5.2	79.9	94.6	76.8	47.2	37.0	30.2
4. Dabhol (Maharashtra)1	Ratnagiri Gas and Power Pvt. Ltd. (RGPPL- JV of GAIL & NTPC)	5.0	72.1	97.4	75.4	85.2	39.0	42.7
5. Ennore (Tamilnadu)	IndianOil LNG Pvt. Ltd. (IOLPL)	5.0	-	9.1	12.9	13.8	13.4	18.4
6. Mundra (Gujarat)	GSPC LNG Limited (GLL)	5.0	-	29.6	34.8	19.3	16.0	14.6
7. Dhamra (Odisha)	Adani LNG Pvt Ltd	5.0	-	-	-	-	-	24.8
Total Capacity		47.7						
Planned/Under-Construction LNG Terminals								
8. Dhabol Expansion2	GAIL (KLPL)	2.1						
9. Jaigarh (Maharashtra)	H-Energy	4.0						
10. Jafrabad (Gujarat)	Swan Energy	5.0						
11. Chhara (Guajrat)	HPCL LNG Ltd	5.0						
12. Dahej Terminal Expansion	Petronet LNG Ltd. (PLL)	5.0						
13. Petronet's Gopalpur Terminal	Petronet LNG Ltd. (PLL)	4.0						

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

2 Additional Capacity to be available after construction of breakwater

Source: CPSEs/GP Division, MoPNG

Petronet's Dahej terminal is under expansion from 17.5 MMTPA to 22.5 MMTPA.
Petronet is setting up a greenfield Regas terminal on East coast of India at Gopalpur, Odisha with an initial capacity of 4 MMTPA.

III.10: Existing Major Crude Oil Pipelines in India- As on 31.03.2024

Type of Pipeline / Owner/Name of Pipeline	Entity	Length (KM)	Capacity (MMT)	Throughput (MMT)		Capacity Utilisation in 2023-24 (%)
				2022-23	2023-24 (P)	
1	2	3	4	5	6	7=6/4%
1. Salaya Mathura Pipeline	IOCL	2646	25.0	28.5	27.9	111.4
2. Mundra Panipat Pipeline		1194	8.4	5.8	6.2	74.3
3. Paradip Haldia Barauni Pipeline (Onshore)		1873	20.4	19.0	17.7	86.8
4. Salaya Mathura Pipeline		17	-	-	-	-
5. Paradip Haldia Barauni Pipeline (Offshore)		92	-	-	-	-
Total IOCL		**5822**	**53.8**	**53.4**	**51.8**	**96.3**
6. CTF Kalol to CTF Nawagam - New	ONGC	63	3.1	1.0	0.9	28.1
7. Nawagam-Koyali (18" New)		80	5.4	3.7	3.8	70.4
8. Nawagam-Koyali (14" Old)		78	3.3	0.0	0.0	0.0
9. Mehsana-Nawagam trunk line - New		77	2.3	2.1	2.2	95.4
10. CTF, Ankleshwar to Koyali pipeline		95	2.2	0.5	0.5	23.4
11. CTF, Ankleshwar to CPF, Gandhar		44	0.4	0.0	0.0	0.0
12. CPF, Gandhar to Saraswani 'T' point		57	1.8	0.4	0.4	20.9
13. Akholjuni- Koyali oil pipe line		66	0.5	0.4	0.3	64.7
14. Lakwa-Moran oil line (New)		15	1.5	0.5	0.5	34.9
15. Lakwa-Moran oil line (Old)		18	1.5	0.0	0.0	0.0
16. Geleki-Jorhat oil line (old)		49	1.5	0.0	0.0	0.0
17. Geleki-Jorhat oil line (new)		48	1.5	0.3	0.3	20.1
18. Borholla- Jorhat (old)		43	0.6	0.0	0.0	0.0
19. Borholla- Jorhat (New)		43	0.6	0.2	0.2	36.0
20. NRM (Narimanam) to CPCL		5	0.7	0.3	0.0	0.0
21. KSP-WGGS to TPK Refinery		14	0.1	0.1	0.1	63.1
22. GMAA EPT		4	0.1	0.0	0.0	28.9
23. Mumbai High - Uran Trunk Pipeline		204	15.6	3.6	3.2	20.6
24. Heera-Uran Trunk Pipeline		81	11.5	6.0	5.9	51.3
25. Bombay-Uran Trunk 30" Pipeline		203	6.4	0.5	1.3	20.5
Total ONGC		**1284**	**60.6**	**19.8**	**19.6**	**32.3**
26. Duliajan-Digboi-Barauni-Bongaigaon Pipeline	OIL	1193	9.0	6.8	6.7	74.9
27. Mundra - Bhatinda Pipeline		1017	11.3	12.8	12.7	112.6
28. Vadinar - Bina Pipeline	BPCL	937	7.8	7.8	7.1	91.5
29. 48" Subsea crude pipeline from SPM to STF-BPCL Kochi Refinery		19.5	15.5	16.0	17.3	111.6
30. 30" crude cross country pipeline from STF to Refinery-BPCL Kochi Refinery		20	15.5	16.0	17.3	111.6
31. Mangala- Bhogat Pipeline	CAIRN	660	8.7	5.1	4.6	52.5
32. Bhogat- Marine		28	2.0	2.0	1.7	87.0
Total CAIRN		**688**	**10.7**	**7.1**	**6.3**	**58.9**
Total Existing Crude Oil Pipeline		**10940**	**153.1**	**107.7**	**104.2**	**68.1**

Source: Oil & Gas Companies P:Provisional

III.11: Major Gas Pipelines in India As on 31.03.2024

Operational							
S.No	Name of Pipelines	Authorised Entity	Capacity (MMSCMD)	Operating Length (KM)	Under Construction	Throughput (MMSCMD)	
			31.03.2024	31.03.2024	31.03.2024	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Cauvery Basin Network	GAIL	4.33	243	-	1.88	1.92
2	Hazira-Vijaipur-Jagdishpur-GREP (Gas Rehabilitation and Expansion Project)-Dahej-Vijaipur HVJ/VDPL	GAIL	53#	6718	-	72.44	83.61
3	Dahej-Vijaipur (DVPL)-Vijaipur-Dadri (GREP) Upgradation DVPL 2 & VDPL	GAIL	54		-		
4	Dahej-Uran-Panvel-Dabhol	GAIL	19.9	943	-	16.20	20.71
5	Gujarat Regional Network	GAIL	8.31	589	-	1.90	1.53
6	Mumbai Regional Network	GAIL	7.04	125	-	4.41	8.14
7	Dadri-Bawana-Nangal	GAIL	31	983	-	7.51	6.81
8	Chainsa-Jhajjar-Hissar	GAIL	13.2 #	444	-	1.95	1.98
9	KG Basin Network	GAIL	19.37 #	865	-	3.83	4.17
10	High Pressure Gujarat Gas Grid	GSPL	36 #	2665	-	22.91	33.13
11	Hazira-Ankleshwar (HAPi)	GGL	5.06	73	-	0.75	0.53
12	Low Pressure Gujarat Gas Grid	GSPL	12	57	-	4.98	4.24
13	Shahdol-Phulpur	RGPL	3.5	304	-	0.65	0.58
14	Assam Regional Network	AGCL	2.5	107	-	19.67	1.78
15	Dukli – Maharajganj	GAIL	0.075	0	-	0	0
16	Uran-Taloja	DFPCL	0.7	42	-	0	0
17	Agartala Regional Network	GAIL	2	65	-	0.98	0.92
18	Uran-Trombay	ONGC	6	24	-	2.80	2.93
19	Dadri-Panipat	IOCL	9.5 #	143	-	4.37	4.78
20	Kakinada-Hyderabad-Uran-Ahmedabad (East West Pipeline)**	PIL	95 #	1483	-	23.71	33.13
Total				**15873**	**-**	**191**	**211**
Partially Commissioned							
1	Mehsana - Bhatinda	GIGL	80.11	1200	740	3.40	3.35
2	Bhatinda - Gurdaspur	GIGL	42.42	102	159	0.04	0.07
3	Mallavaram - Bhopal - Bhilwara - Vijaipur	GITL	78.25	364	1517	1.60	1.92
4	Dabhol-Bangalore	GAIL	16	1148	266	1.71	2.01
5	Jagdishpur-Haldia-Bokaro Dhamra-Paradip-Barauni-Guwahati	GAIL	23	3141	405	5.20	8.61
6	Kochi-Koottanad-Bangalore-Mangalore	GAIL	16	644	460	3.29	3.66
7	Ennore-Tuticorin	IOCL	84.67	1080	351	3.16	3.58
Total				**7679**	**3898**	**18**	**23**
Under Construction							
1	Ennore- Nellore	GTIL	36	220	-	-	-
2	Kakinada-Vijayawada-Nellore	IMC	18	667	-	-	-
3	North-East Natural Gas Pipeline Grid	IGGL	4.75	1656	-	-	-
4	Kanai - Chhata - Panitar	HPPL	19.2	317	-	-	-
5	Srikakulam-Angul	GAIL	6.65	690	-	-	-
6	Mumbai-Nagpur-Jharsuguda	GAIL	16.5	1755	-	-	-
7	Jamnagar to Dwarka (Gujarat)	GSPL	3	100	-	-	-
8	Hazaribagh-Ranchi	IOCL	1.03	65	-	-	-
9	Gurdaspur-Jammu	GAIL	3.1	160	-	-	-
Total				**5630**	**-**	**-**	**-**

Note: # Determined capacity of Pipeline.

* Integrated Natural Gas Pipeline (INGPL) capacity of GAIL India Limited is 145 MMSCMD for FY 22-23 and 163.8 MMSCMD for FY 23-24.

** Matter regarding capacity of Kakinada-Hyderabad-Uran-Ahmedabad (East West Pipeline) is sub-judice.

III.12: Existing Major LPG & Petroleum Products Pipelines in India - As on 31.03.2024

Type of Pipeline / Owner/Name of Pipeline	Entity	Length (KM)	Capacity (MMT)	Throughput (MMT)		Capacity Utilisation in 2023-24 (%)
				2022-23	2023-24	
1	2	3	4	5	6	7=6/4%
A. Total LPG Pipeline		**5225**	**15.9**	**9.5**	**11.5**	**72.5**
1. Jamnagar-Loni Pipeline	GAIL	1427	3.3	3.0	3.2	99.0
2. Vizag-Secunderabad Pipeline	GAIL	609	1.3	1.3	1.2	88.5
B. Total GAIL		**2036**	**4.6**	**4.3**	**4.4**	**96.0**
3. Panipat Jalandhar Pipeline	IOCL	280	0.7	0.6	0.6	85.3
4. Paradip Haldia Durgapur Pipeline	IOCL	1707	3.5	1.4	2.0	58.0
C. Total IOCL		**1987**	**4.2**	**2.0**	**2.6**	**62.6**
D. Uran LPG Pipeline	**BPCL**	**28**	**0.8**	**0.7**	**0.7**	**87.8**
5. Mangalore-Hassan-Mysore-Bangalore Pipeline	HPCL	356	3.1	1.3	1.8	59.1
6. Uran-Chakan-Shikrapur Pipeline		169	1.0	1.0	1.0	101.6
7. Hassan Cherlapally Pipeline		649	2.2	0.2	0.9	42.6
E. Total HPCL		**1174**	**6.3**	**2.5**	**3.8**	**60.1**
F. Total Product Pipelines (Excl. LPG Pipelines)		**18145**	**147.4**	**92.0**	**96.7**	**65.6**
8. Koyali Ahmedabad Pipeline	IOCL	79	1.1	0.8	0.9	85.5
9. Koyali Jaipur Panipat Pipeline		1644	5.0	4.9	4.8	96.4
10. Koyali Dahej Pipeline		197	2.6	0.9	0.6	24.4
11. Koyali Ratlam Pipeline		265	2.0	1.7	1.4	69.9
12. Panipat Bhatinda Pipeline		219	3.0	1.7	1.6	54.1
13. Panipat Rewari Pipeline		155	2.1	1.4	1.5	69.1
14. Panipat Delhi Pipeline		189	3.0	0.4	0.1	3.6
15. Panipat Bijwasan ATF Pipeline		111	1.0	0.5	1.1	105.5
16. Panipat Ambala Jalandhar Pipeline		495	3.5	3.3	3.2	92.3
17. Mathura Delhi Pipeline		147	3.7	2.7	2.3	62.1
18. Mathura Agra Gawria Pipeline		311	4.0	1.0	1.7	41.5
19. Mathura Bharatpur Pipeline		21	1.2	0.2	0.2	14.8
20. Guwahati Siliguri Pipeline		435	1.4	2.0	2.0	140.1
21. Barauni Kanpur Pipeline		1227	3.5	3.6	4.2	119.4
22. Haldia Mourigram Rajbandh Pipeline		277	1.4	1.9	2.2	159.5
23. Haldia Barauni Pipeline		526	1.3	1.6	1.7	132.1
24. Chennai Trichy Madurai Pipeline		683	3.9	3.0	2.9	74.9
25. Chennai Bangalore Pipeline		290	2.5	2.4	2.3	94.9
26. Chennai ATF Pipeline		95	0.2	0.2	0.3	155.0
27. Paradip Raipur Ranchi Pipeline		1073	5.0	4.3	4.3	86.3
28. Paradip Hyderabad Pipeline		993	4.5	0.2	0.5	10.8
29. Paradip Somnathpur Haldia Pipeline		341	4.6	0.0	0.1	3.1
30. Koyali Ahmedanagar Solapur Pipeline		752	5.0	0.1	0.7	14.7
31. Devangonthi Devanhalli ATF Pipeline		36	0.7	0.5	0.6	86.4
32. Kolkata ATF Pipeline		27	0.2	0.2	0.1	74.5
33. Lucknow ATF Pipeline		6	0.2	0.1	0.1	46.2

Type of Pipeline / Owner/Name of Pipeline	Entity	Length (KM)	Capacity (MMT)	Throughput (MMT)		Capacity Utilisation in 2023-24 (%)
				2022-23	2023-24	
1	2	3	4	5	6	7=6/4%
G. Total IOCL		**10594**	**66.4**	**39.7**	**41.4**	**62.3**
34. Mumbai-Manmad-Bijwasan pipeline	BPCL	1392	6.0	7.8	7.5	124.8
35. Bina-Kota pipeline (BKPL)		259	4.4	3.4	3.1	69.6
36. ATF P/L Mumbai Refinery (MR)-Santacruz		15	1.0	0.5	0.7	70.1
37. ATF P/L Kochi Refinery (KR)-Kochi Airport		34	0.6	0.4	0.4	69.3
38. Kota - Jobner branch pipeline1		211	1.7	0.3	0.3	19.0
39. Mumbai Refinery- Wadilube Pipeline		12	1.3	0.3	0.0	0.0
40. Cochin-Coimbatore-Karur (CCK) pipeline		293	3.3	4.3	4.1	125.7
41. Bina-Panki Multiproduct Pipeline		355	3.5	1.6	1.7	49.5
H. Total BPCL		**2571**	**21.8**	**18.6**	**17.9**	**82.0**
42. Mumbai-Pune-Solapur pipeline (MPSPL)	HPCL	508	4.3	3.7	3.6	83.2
43. Visakh-Vijaywada-Secunderabad pipeline (VVSPL)		572	7.7	5.5	6.1	79.1
44. Mundra-Delhi pipeline (MDPL)		1054	6.9	3.5	4.9	70.6
45. Ramanmandi-Bahadurgarh (RBPL)		243	7.1	6.2	6.0	84.5
46. Ramanmandi-Bathinda pipeline (RBHPL)		30	2.1	1.3	1.3	63.4
47. Mumbai - Vashi Black Oil Pipeline (BOPL)		21	1.5	1.2	1.6	106.0
48. Mumbai Refinery to Mumbai Airport ATF Pipeline		20	0.5	0.3	0.5	94.0
49. Trombay to Wadibundar Lube Oil Pipeline (LOPL)		17	1.0	0.5	0.5	51.5
50. Awa-Salawas pipeline (ASPL)		93	2.3	0.6	0.7	28.8
51. Bahadurgarh-Tikrikalan pipeline (BTPL)		14	0.8	0.4	0.4	48.7
52. Rewari- Kanpur Pipeline (RKPL)		443	8.0	4.0	3.9	49.4
53. Palanpur-Vadodara Pipeline (PVPL)		235	4.5	0.9	1.4	31.9
54. Vijaywada Dharmapuri Pipieline		697	4.2	0.1	1.0	24.0
55. Barwala-Hisar Pipeline (BHPL)		10	1.0	0.4	0.4	39.0
I. Total HPCL		**3957**	**51.9**	**28.7**	**32.3**	**62.2**
55. Petronet Mangalore-Hassan-Bangalore Pipeline	Petronet-MHB	363	5.6	3.9	4.0	72.2
56. Numaligarh - Siliguri Pipeline	OIL	660	1.7	1.4	1.2	67.1
J. Total Petroleum Products Pipeline (A+F)		**23370**	**163.3**	**101.5**	**108.2**	**66.3**

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

2. ASPL, PVPL and RKPL are branch lines of MDPL. BTPL is a Spurline of RBPL. MDPL End-Section Rewari-Bahadurgarh can operate in reverse direction. Thus RKPL is fed from MDPL and RBPL Mainlines. Capacities/ Throughputs of Branch/ Spurline form part of their respective Mainlines.

Source: Oil & Gas Companies P:Provisional

III.13: Tonnage of Indian Tankers Fleet (as on 31st March)

2019	2020	2021	2022	2023	2024 (P)	
1	2	3	4	5	6	7
Coastal Trade (Oil Tankers)						
A. Product Carriers						
1. No. of tankers/Ships	16	17	18	20	20	23
2. Dead Weight Tonnage (in TMT)	46	48	94	50	50	55
3. Gross Registered Tonnage (in TMT)	44	46	74	49	49	52
B. Crude Oil Carriers						
4. No. of tankers/Ships	4	5	4	4	4	4
5. Dead Weight Tonnage (in TMT)	403	477	432	432	432	432
6. Gross Registered Tonnage (in TMT)	219	263	234	234	234	234
C. Offshore Supply Vessels						
7. No. of tankers/Ships	101	101	104	110	113	114
8. Dead Weight Tonnage (in TMT)	117	121	126	141	140	141
9. Gross Registered Tonnage (in TMT)	137	137	143	154	155	156
D. Specialized vessels for offshore						
10. No. of tankers/Ships	37	38	38	37	37	37
11. Dead Weight Tonnage (in TMT)	49	48	48	46	46	46
12. Gross Registered Tonnage (in TMT)	87	86	86	83	83	83
E. Total (A+B+C+D)						
13. No. of tankers/Ships (1+4+7+10)	158	161	164	171	174	178
14. Dead Weight Tonnage (in TMT)(2+5+8+11)	615	694	700	669	668	674
15. Gross Registered Tonnage (in TMT)(3+6+9+12)	488	531	536	520	521	525
Overseas Trade (Oil Tankers)						
F. Ore Oil Bulk Carriers						
16. No. of tankers/Ships	1	1	0	0	0	0
17. Dead Weight Tonnage (in TMT)	46	46	0	0	0	0
18. Gross Registered Tonnage (in TMT)	28	28	0	0	0	0
G. Crude Oil Carriers						
19. No. of tankers/Ships	69	70	67	65	65	60
20. Dead Weight Tonnage (in TMT)	7005	7052	6704	6469	6729	6259
21. Gross Registered Tonnage (in TMT)	3857	3889	3708	3582	3714	3459
H. Product Carriers						
22. No. of tankers/Ships	63	66	68	69	72	78
23. Dead Weight Tonnage (in TMT)	3939	3974	3919	4126	4364	4694
24. Gross Registered Tonnage (in TMT)	2326	2345	2322	2447	2582	2781
I. LPG Carriers						
25. No. of tankers/Ships	19	17	16	23	26	27
26. Dead Weight Tonnage (in TMT)	808	736	723	1049	1203	1229
27. Gross Registered Tonnage (in TMT)	683	622	607	886	1016	1039
J. Total Overseas (F+G+H+I)						
28. No. of tankers/Ships (16+19+22+25)	152	154	151	157	163	165
29. Dead Weight Tonnage (in TMT)(17+20+23+26)	11798	11808	11346	11644	12296	12182
30. Gross Registered Tonnage (in TMT)(18+21+24+27)	6894	6885	6636	6915	7312	7279
K. Total Oil Tankers						
31. No. of tankers/Ships (13+28)	310	315	315	328	337	343
32. Dead Weight Tonnage (in TMT)(14+29)	12413	12502	12046	12313	12964	12856
33. Gross Registered Tonnage (in TMT)(15+30)	7382	7416	7172	7435	7833	7804

Note: Total may not tally due to rounding off

Source: Directorate General of Shipping, Mumbai.

III.14: Share 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	2021-22	58.17	10.40	17.88
	2022-23	65.66	9.99	15.21
	2023-24 (P)	66.39	10.08	15.18
Mumbai	2021-22	59.89	36.85	61.53
	2022-23	63.61	37.84	59.49
	2023-24 (P)	67.26	39.85	59.25
Chennai	2021-22	48.56	11.85	24.40
	2022-23	48.95	14.15	28.91
	2023-24 (P)	51.60	14.74	28.57
Cochin	2021-22	34.55	22.09	63.94
	2022-23	35.26	22.22	63.02
	2023-24 (P)	36.31	24.19	66.62
Deendayal (Kandla)	2021-22	127.10	58.03	45.66
	2022-23	137.56	60.33	43.86
	2023-24 (P)	132.37	64.38	48.64
Visakhapatnam	2021-22	69.03	14.25	20.64
	2022-23	73.75	16.10	21.83
	2023-24 (P)	81.09	18.98	23.41
Mormugao	2021-22	18.46	0.50	2.71
	2022-23	17.33	0.61	3.52
	2023-24 (P)	20.62	0.59	2.86
J.N.P.T.	2021-22	76.00	3.16	4.16
	2022-23	83.86	3.25	3.88
	2023-24 (P)	85.82	3.40	3.96
Paradip	2021-22	116.13	35.12	30.24
	2022-23	135.36	37.81	27.93
	2023-24 (P)	145.38	37.96	26.11
Tuticorin (V.O. Chidambaranar)	2021-22	34.12	0.35	1.03
	2022-23	38.04	0.30	0.79
	2023-24 (P)	41.40	0.47	1.14
New Mangalore	2021-22	39.30	23.74	60.41
	2022-23	41.42	26.84	64.80
	2023-24 (P)	45.71	26.37	57.69
Kamarajar (Ennore)	2021-22	38.74	4.93	12.73
	2022-23	43.51	4.70	10.80
	2023-24 (P)	45.28	4.98	11.00
Grand Total	**2021-22**	**720.05**	**221.27**	**30.73**
	2022-23	**776.45**	**234.05**	**30.14**
	2023-24 (P)	**819.23**	**245.99**	**30.03**

Source : Ministry of Shipping P: Provisional

III.15: Movement of POL Traffic on Railways

Year	Tonnes Originating (TMT)	Earnings (in ₹ crore)	Average Lead (Kms)	Earnings (Paisa/Tonnes/ Kms)	Average Freight (₹/Tonne)
1	2	3	4	5	6
2018-19	43010	5632	682	192	1309
2019-20	44680	5928	689	193	1327
2020-21	42477	5727	706	191	1348
2021-22	44462	5822	705	186	1309
2022-23	48219	6305	699	187	1308
2023-24(P)	**49880**	**6920**	**664**	**209**	**1387**

Source : Ministry of Railways

P: Provisional

III.16: State-wise PDS Kerosene Allocated and Quantity Uplifted

(Figures in Kilolitre)

State	2020-21		2021-22		2022-23		2023-24 (P)	
	Allocation	Sales	Allocation	Sales	Allocation	Sales	Allocation	Sales
1	2	3	4	5	6	7	6	7
1. Andaman & Nicobar Islands	0	0	0	0	0	0	0	0
2. Andhra Pradesh*	0	0	0	0	0	0	0	0
3. Arunachal Pradesh	4752	3699	3312	2892	2976	165	2064	48
4. Assam	155568	153143	124464	117299	99552	12716	49776	10306
Bihar	212736	212355	170208	169771	127632	48363	63840	24718
6. Chandigarh*	0	0	0	0	0	0	0	0
7. Chattishgarh	58272	56095	46608	43924	34944	9698	16560	6336
8. Dadra & Nagar Haveli*	0	0	0	0	0	0	0	0
9. Daman and Diu*	0	0	0	0	0	0	0	0
10. Delhi*	0	0	0	0	0	0	0	0
11. Goa	384	384	288	288	192	0	0	0
12. Gujarat	84000	83059	55800	53709	25092	6046	0	0
13. Haryana*	0	0	0	0	0	0	0	0
14. Himachal Pradesh	9792	6756	6864	2328	4032	120	2016	8
15. Jammu and Kashmir*	44988	36523	38256	29222	30624	762	15312	8
16. Jharkhand	90000	83196	72000	68900	54000	18950	26976	10646
17. Karnataka	42480	38748	29760	17796	17856	6344	8832	5208
18. Kerala	37056	37056	25920	25920	15552	15552	7776	7716
19. Ladakh*	3528	3518	3528	3346	2832	634	1392	0
20. Lakshadweep	768	912	576	576	432	24	288	24
21. Madhya Pradesh	213408	187132	160032	116757	120000	3381	32880	372
22. Maharashtra	46528	21558	27936	15552	16752	3912	7488	1848
23. Manipur	11088	11252	9984	9984	8976	2616	4464	2676
24. Meghalaya	18864	17892	16992	15960	15312	2532	10704	3012
25. Mizoram	3216	3192	2880	2688	2592	144	1296	120
26. Nagaland	8592	8439	7728	7719	6960	1122	4848	1017
27. Odisha	194304	190291	155424	150313	116544	28658	51888	19284
28. Puducherry*	0	0	0	0	0	0	0	0
29. Punjab*	0	0	0	0	0	0	0	0
30. Rajasthan	14150	936	0	0	0	0	0	0
31. Sikkim	2256	2109	2016	1971	1824	240	912	198
32. Tamil Nadu	129168	129167	90432	90431	54240	54223	32544	32531
33. Telangana	16032	2880	4992	420	1488	0	384	0
34. Tripura	25152	25089	22656	22490	20400	8374	14256	9116
35. Uttar Pradesh	181702	26526	0	0	0	0	0	0
36. Uttrakhand	2208	374	672	0	144	0	12	0
37.West Bengal	704016	696512	704016	689651	462696	171540	704016	248289
All India (1 to 36)	**2315008**	**2038790**	**1783344**	**1659906**	**1243644**	**396115**	**1060524**	**383479**

Note: *: Zero represent PDS kerosene free State/UTs.

Source: Distribution Section, MoPNG

III.17: State-wise Number of Retail Outlets (as on 1st April)

States/UT's	2019	2020	2021	2022	2023	2024
1	2	3	4	5	6	7
1. Andaman & Nicobar Islands	14	16	16	19	19	19
2. Andhra Pradesh	3430	3721	4048	4230	4345	4461
3. Arunachal Pradesh	94	116	152	178	195	201
4. Assam	897	979	1104	1312	1417	1459
5. Bihar	2860	2968	3158	3341	3523	3610
6. Chandigarh	42	42	47	47	48	50
7. Chhattisgarh	1280	1462	1808	1969	2071	2137
8. Dadra & Nagar Haveli and Daman & Diu	62	61	61	64	66	66
9. Delhi	398	398	400	400	402	403
10. Goa	118	118	122	127	135	138
11. Gujarat	4159	4573	5151	5502	5661	5825
12. Haryana	2933	3060	3412	3660	3769	3895
13. Himachal Pradesh	439	494	563	638	701	725
14. Jammu and Kashmir	504	530	542	581	643	673
15. Jharkhand	1216	1358	1535	1634	1681	1723
16. Karnataka	4385	4811	5503	5929	6199	6496
17. Kerala	2140	2238	2396	2559	2694	2820
18. Ladakh	3	3	22	27	32	35
19. Lakshadweep	0	0	0	1	4	4
20. Madhya Pradesh	3832	4230	4981	5567	5909	6112
21. Maharashtra	6148	6457	7048	7667	8045	8358
22. Manipur	104	136	160	178	195	206
23. Meghalaya	208	225	239	270	285	294
24. Mizoram	43	45	55	72	96	105
25. Nagaland	79	94	120	150	167	190
26. Odisha	1704	1894	2070	2246	2340	2420
27. Puducherry	165	164	174	179	186	197
28. Punjab	3453	3551	3772	3920	4000	4062
29. Rajasthan	4661	4967	5615	6028	6348	6611
30. Sikkim	51	55	57	63	65	69
31. Tamil Nadu	5638	5804	6357	6744	7018	7251
32. Telangana	2767	3078	3571	3798	3969	4119
33. Tripura	72	79	94	108	114	131
34. Uttar Pradesh	7762	8210	9315	10162	10709	11309
35. Uttarakhand	601	629	686	763	798	844
36. West Bengal	2363	2523	2750	2894	3006	3066
Total All India (1 to 36)	**64625**	**69089**	**77104**	**83027**	**86855**	**90084**

Source: Oil Companies

III.18: State-wise Number of Active LPG Domestic Consumers (as on 1st April)

States/UT's	2019	2020	2021	2022	2023	2024
1	2	3	4	5	6	7
1. Andaman & Nicobar Islands	1.0	1.1	1.2	1.2	1.2	1.3
2. Andhra Pradesh	134.0	137.0	142.9	147.1	149.2	155.2
3. Arunachal Pradesh	2.5	2.7	2.8	3.0	3.1	3.2
4. Assam	63.8	71.1	73.7	79.3	83.9	90.4
5. Bihar	164.1	175.9	186.5	206.9	215.2	225.4
6. Chandigarh	2.7	2.8	2.8	2.9	2.9	3.0
7. Chhattisgarh	47.9	52.0	53.2	57.3	59.0	62.1
8. Dadra & Nagar Haveli and Daman & Diu	1.5	1.6	1.6	1.6	1.7	1.7
9. Delhi	49.4	49.6	50.5	51.5	53.3	55.9
10. Goa	4.8	5.0	5.2	5.4	5.5	5.6
11. Gujarat	100.6	105.3	109.0	115.8	120.6	125.8
12. Haryana	66.1	69.0	72.1	74.8	76.1	80.7
13. Himachal Pradesh	17.3	19.7	20.5	21.1	21.5	21.9
14. Jammu and Kashmir	29.8	31.5	32.4	34.8	34.6	35.0
15. Jharkhand	51.7	56.2	57.7	60.7	62.8	65.5
16. Karnataka	154.1	160.2	167.0	173.4	178.6	184.7
17. Kerala	86.1	87.9	91.0	93.4	95.0	96.6
18. Ladakh	-	0.8	0.8	0.9	0.9	1.0
19. Lakshadweep	0.1	0.1	0.1	0.1	0.1	0.1
20. Madhya Pradesh	141.1	149.6	153.7	163.2	166.6	173.0
21. Maharashtra	269.3	276.3	287.6	298.5	303.9	310.8
22. Manipur	5.0	5.5	5.9	6.2	6.6	6.8
23. Meghalaya	3.0	3.2	3.3	3.6	4.1	4.8
24. Mizoram	2.8	3.0	3.2	3.3	3.4	3.6
25. Nagaland	2.5	2.6	2.8	3.1	3.3	3.7
26. Odisha	79.8	85.9	88.9	94.7	97.0	99.6
27. Puducherry	3.7	3.7	3.8	3.9	3.9	4.0
28. Punjab	83.1	85.5	88.5	91.6	93.4	95.2
29. Rajasthan	154.5	162.5	167.0	171.7	175.7	181.7
30. Sikkim	1.4	1.5	1.6	1.7	1.7	1.8
31. Tamil Nadu	206.9	211.1	216.9	221.8	226.1	233.3
32. Telangana	105.6	109.0	113.6	117.3	120.1	124.0
33. Tripura	7.0	7.4	7.6	7.7	7.9	8.3
34. Uttar Pradesh	376.0	403.8	423.2	452.3	463.4	476.7
35. Uttarakhand	25.2	26.5	27.9	29.2	30.3	31.3
36. West Bengal	209.4	220.6	228.2	252.1	267.8	268.5
Total All India (1 to 36)	**2653.7**	**2787.1**	**2894.8**	**3053.2**	**3140.3**	**3242.184**

Source: Oil Marketing Companies, MoPNG

III.19: State-wise Number of LPG Distributors (as on 1st April)

States/UT's	2019	2020	2021	2022	2023	2024
1	2	3	4	5	6	7
1. Andaman & Nicobar Islands	9	9	9	9	9	10
2. Andhra Pradesh	1015	1057	1062	1083	1093	1144
3. Arunachal Pradesh	83	83	85	85	85	85
4. Assam	522	559	590	596	596	597
5. Bihar	1799	1938	1993	2009	2024	2033
6. Chandigarh	27	27	26	26	26	26
7. Chhattisgarh	523	534	534	534	534	534
8. Dadra & Nagar Haveli and Daman & Diu	6	6	6	6	6	7
9. Delhi	323	322	321	319	317	317
10. Goa	54	55	55	55	56	55
11. Gujarat	901	968	1006	1020	1038	1041
12. Haryana	614	621	623	625	624	626
13. Himachal Pradesh	196	203	206	207	207	209
14. Jammu and Kashmir	282	269	269	267	270	273
15. Jharkhand	491	536	572	582	585	587
16. Karnataka	1171	1238	1261	1270	1271	1271
17. Kerala	659	675	691	698	696	698
18. Ladakh	0	18	18	24	24	24
19. Lakshadweep	1	1	1	1	1	1
20. Madhya Pradesh	1450	1507	1528	1543	1551	1551
21. Maharashtra	2134	2184	2206	2219	2231	2237
22. Manipur	99	99	101	101	102	102
23. Meghalaya	62	62	64	64	63	65
24. Mizoram	58	59	59	59	59	59
25. Nagaland	78	81	83	83	83	83
26. Odisha	912	938	955	960	963	965
27. Puducherry	27	27	28	27	29	29
28. Punjab	851	856	857	861	858	860
29. Rajasthan	1333	1372	1385	1387	1387	1384
30. Sikkim	22	24	26	27	28	29
31. Tamil Nadu	1567	1623	1632	1642	1645	1643
32. Telangana	764	777	785	791	800	802
33. Tripura	73	74	77	80	80	83
34. Uttar Pradesh	4052	4110	4126	4134	4142	4142
35. Uttarakhand	306	313	314	315	316	318
36. West Bengal	1273	1445	1529	1560	1586	1591
Total All India (1 to 36)	**23737**	**24670**	**25083**	**25269**	**25385**	**25481**

Source: Oil Marketing Companies, MoPNG

III.20: State-wise Number of PMUY Connections (as on 1st April)

States/UT's	2019	2020	2021	2022	2023	2024
1	2	3	4	5	6	7
1. Andaman & Nicobar Islands	7889	12436	12602	13403	13447	13827
2. Andhra Pradesh	342598	391860	391625	416861	512437	968332
3. Arunachal Pradesh	39315	44699	44670	47818	49247	53789
4. Assam	2835940	3484901	3474326	3979854	4414806	5092071
5. Bihar	7894786	8537893	8523573	10094557	10733364	11619851
6. Chandigarh	88	88	87	92	659	2025
7. Chhattisgarh	2692704	2989440	2988523	3351181	3492221	3785197
8. Dadra & Nagar Haveli and Daman & Diu	14530	15174	15166	15050	15033	17812
9. Delhi	73797	76855	76190	98756	142164	256931
10. Goa	1072	1082	1081	1081	1265	1956
11. Gujarat	2521066	2901059	2899233	3438252	3843237	4304694
12. Haryana	680456	730928	726751	738980	767322	1112992
13. Himachal Pradesh	112918	135966	135960	138382	140822	150837
14. Jammu and Kashmir	1053018	1230997	1230134	1238847	1245438	1269743
15. Jharkhand	2904575	3261556	3258502	3474963	3646220	3895366
16. Karnataka	2822822	3146300	3143099	3466468	3757704	4148108
17. Kerala	209923	256302	256136	300498	341187	387761
18. Ladakh	-	11083	11072	11099	11090	11089
19. Lakshadweep	290	290	292	302	309	365
20. Madhya Pradesh	6445785	7154600	7143875	7938596	8227427	8832154
21. Maharashtra	4063804	4428682	4419772	4698339	4890055	5215785
22. Manipur	130377	156598	156398	178392	202029	224999
23. Meghalaya	140311	150744	150526	173142	214928	316624
24. Mizoram	25781	28118	28122	29645	33595	36031
25. Nagaland	49402	55140	54096	77111	91807	122199
26. Odisha	4226289	4740385	4736666	5188279	5319685	5547343
27. Puducherry	13374	13577	13568	14218	14833	19322
28. Punjab	1208962	1224218	1219883	1235939	1283976	1359705
29. Rajasthan	5695525	6368525	6359564	6620356	6927163	7377084
30. Sikkim	7798	8752	8752	12457	13795	19911
31. Tamil Nadu	3141843	3242217	3237695	3450256	3704058	4101978
32. Telangana	923841	1072321	1071393	1111322	1152850	1185624
33. Tripura	238393	271888	271530	271904	283503	315462
34. Uttar Pradesh	12963097	14756494	14733034	16718454	17503067	18592478
35. Uttarakhand	352921	404566	403234	449877	496450	530167
36. West Bengal	8062319	8856695	8839050	10908400	12372225	12376395
Total All India (1 to 36)	**71897609**	**80162429**	**80036180**	**89903131**	**95859418**	**103266007**

Source: IOCL

III.21: State-wise Number of SKO/LDO Dealerships (as on 1st April)

States/UT's	2019	2020	2021	2022	2023	2024
1	2	3	4	5	6	7
1. Andaman & Nicobar Islands	2	2	2	2	2	2
2. Andhra Pradesh	394	394	384	328	328	328
3. Arunachal Pradesh	33	33	33	30	30	30
4. Assam	359	359	359	227	227	227
5. Bihar	371	371	362	349	349	349
6. Chandigarh	12	12	12	11	11	11
7. Chhattisgarh	108	108	108	105	105	105
8. Dadra & Nagar Haveli and Daman & Diu	7	7	7	7	7	7
9. Delhi	116	116	111	112	112	112
10. Goa	22	22	22	19	19	19
11. Gujarat	473	473	470	466	466	466
12. Haryana	141	141	139	150	150	150
13. Himachal Pradesh	26	26	26	25	25	25
14. Jammu and Kashmir	47	45	45	50	50	50
15. Jharkhand	87	87	87	110	110	109
16. Karnataka	315	315	311	376	376	376
17. Kerala	237	237	234	200	200	196
18. Ladakh	0	2	2	2	2	2
19. Lakshadweep	0	0	0	1	1	1
20. Madhya Pradesh	284	284	284	279	279	279
21. Maharashtra	767	766	752	786	786	786
22. Manipur	36	36	36	40	40	40
23. Meghalaya	35	35	35	31	31	31
24. Mizoram	19	19	19	27	27	27
25. Nagaland	19	19	19	19	19	19
26. Odisha	177	177	176	172	172	172
27. Puducherry	8	8	8	6	6	6
28. Punjab	237	237	237	232	232	232
29. Rajasthan	250	250	248	285	285	285
30. Sikkim	12	12	12	7	7	7
31. Tamil Nadu	466	465	458	392	392	392
32. Telangana	202	202	202	205	205	205
33. Tripura	40	40	40	48	48	48
34. Uttar Pradesh	695	691	675	772	772	758
35. Uttarakhand	73	73	69	73	73	73
36. West Bengal	458	457	455	470	470	470
Total All India (1 to 36)	**6528**	**6521**	**6439**	**6414**	**6414**	**6395**

Source: Central Public Sector Enterprises

III.22: State-wise Number of Operational POL Terminal/Depots (as on 1st April)

States/UT's	2019	2020	2021	2022	2023	2024
1	2	3	4	5	6	7
1. Andaman & Nicobar Islands	1	1	1	1	1	1
2. Andhra Pradesh	23	22	20	24	23	24
3. Arunachal Pradesh	1	1	1	1	2	1
4. Assam	7	7	7	8	7	7
5. Bihar	9	9	9	9	9	10
6. Chandigarh	1	1	1	0	0	0
7. Chhattisgarh	5	3	3	3	3	3
8. Dadra & Nagar Haveli and Daman & Diu	2	0	0	0	0	0
9. Delhi	4	4	4	4	4	4
10. Goa	3	2	3	2	2	2
11. Gujarat	17	18	19	18	18	20
12. Haryana	9	9	9	10	10	10
13. Himachal Pradesh	4	2	2	3	3	3
14. Jammu and Kashmir	7	7	7	6	6	7
15. Jharkhand	8	7	7	7	7	6
16. Karnataka	22	22	22	20	20	19
17. Kerala	9	9	9	10	10	10
18. Ladakh	0	2	2	4	4	3
19. Lakshadweep	0	0	0	1	2	2
20. Madhya Pradesh	17	18	18	17	17	17
21. Maharashtra	33	33	34	34	33	34
22. Manipur	1	1	1	1	1	1
23. Meghalaya	0	0	0	0	0	0
24. Mizoram	1	1	1	1	1	1
25. Nagaland	1	1	1	1	1	1
26. Odisha	10	10	10	10	10	10
27. Puducherry	0	0	0	0	0	0
28. Punjab	11	10	10	12	13	13
29. Rajasthan	14	14	14	14	14	14
30. Sikkim	2	2	2	2	2	2
31. Tamil Nadu	22	22	22	22	24	24
32. Telangana	8	8	9	8	8	8
33. Tripura	1	1	1	1	1	1
34. Uttar Pradesh	32	31	31	31	31	33
35. Uttarakhand	7	7	7	7	7	6
36. West Bengal	19	18	18	17	15	16
Total All India (1 to 36)	**311**	**303**	**305**	**309**	**309**	**313**

Source: Oil Companies

III.23: State-wise Number of Aviation Fueling Station (as on 1st April)

States/UT's	2019	2020	2021	2022	2023	2024
1	2	3	4	5	6	7
1. Andaman & Nicobar Islands	2	2	2	3	3	3
2. Andhra Pradesh	12	12	13	14	14	14
3. Arunachal Pradesh	3	4	7	8	9	6
4. Assam	12	12	13	14	14	13
5. Bihar	6	6	7	7	7	6
6. Chandigarh	1	1	1	1	1	1
7. Chhattisgarh	6	6	6	6	6	6
8. Dadra & Nagar Haveli and Daman & Diu	2	2	2	2	2	2
9. Delhi	8	8	6	6	6	6
10. Goa	4	4	4	4	6	8
11. Gujarat	18	18	19	20	20	19
12. Haryana	2	2	2	2	2	1
13. Himachal Pradesh	3	3	3	4	4	2
14. Jammu and Kashmir	9	7	7	5	7	9
15. Jharkhand	4	5	5	5	7	8
16. Karnataka	15	16	15	15	15	17
17. Kerala	13	13	12	13	14	15
18. Ladakh	0	2	2	2	2	1
19. Lakshadweep	0	1	1	1	1	1
20. Madhya Pradesh	9	8	8	10	10	10
21. Maharashtra	20	21	22	24	25	26
22. Manipur	2	2	2	2	2	2
23. Meghalaya	2	2	2	2	2	2
24. Mizoram	1	1	1	1	2	2
25. Nagaland	2	2	2	2	2	2
26. Odisha	8	9	8	8	9	9
27. Puducherry	1	1	1	1	1	1
28. Punjab	11	12	12	11	11	12
29. Rajasthan	13	13	13	12	14	13
30. Sikkim	1	1	1	1	1	1
31. Tamil Nadu	20	21	20	19	21	25
32. Telangana	6	6	6	6	6	7
33. Tripura	2	2	2	2	2	2
34. Uttar Pradesh	17	18	17	18	18	21
35. Uttarakhand	2	2	3	3	3	3
36. West Bengal	11	11	11	11	12	12
Total All India (1 to 36)	**248**	**256**	**258**	**265**	**281**	**288**

Source: Oil & Gas Companies

III.24: LPG Bottling Plants in the Country (as on 1st April)

States/UT's	No. of LPG Bottling Plants		LPG Bottling Plants Capacity (in TMTPA)	
	2023	2024	2023	2024
1	2	3	4	5
1. Andaman & Nicobar Islands	1	1	15	15
2. Andhra Pradesh	9	9	1020	1020
3. Arunachal Pradesh	0	0	0	0
4. Assam	8	7	653	630
5. Bihar	9	9	1230	1230
6. Chandigarh	0	0	0	0
7. Chhattisgarh	4	4	330	330
8. Dadra & Nagar Haveli and Daman & Diu	0	0	0	0
9. Delhi	2	2	480	480
10. Goa	2	2	90	90
11. Gujarat	11	11	1140	1140
12. Haryana	5	5	840	840
13. Himachal Pradesh	2	2	90	90
14. Jammu and Kashmir	3	3	180	180
15. Jharkhand	5	5	480	480
16. Karnataka	11	11	1570	1570
17. Kerala	7	7	690	690
18. Ladakh	1	1	5	5
19. Lakshadweep	0	0	0	0
20. Madhya Pradesh	11	11	1050	1050
21. Maharashtra	22	22	2610	2670
22. Manipur	1	1	30	30
23. Meghalaya	0	0	0	0
24. Mizoram	0	0	0	0
25. Nagaland	1	1	11	22
26. Odisha	6	6	510	510
27. Puducherry	1	1	60	60
28. Punjab	8	8	900	960
29. Rajasthan	11	12	1050	1170
30. Sikkim	1	1	11	11
31. Tamil Nadu	19	19	1800	1830
32. Telangana	5	5	660	720
33. Tripura	1	1	60	60
34. Uttar Pradesh	27	28	3030	3150
35. Uttarakhand	4	4	240	240
36. West Bengal	10	11	1390	1570
Total All India (1 to 36)	**208**	**210**	**22225**	**22843**

Source: Oil & Gas Companies/PPAC

III.25: Oil industry Alternate Fuel Infrastructure at Retail Outlets

State/UT	HCNG/CBG/LNG		EV CHARGING		AUTO LPG		RO's with atleast 1 alternate fuel		TOTAL	
	01.04.2023	01.04.2024	01.04.2023	01.04.2024	01.04.2023	01.04.2024	01.04.2023	01.04.2024	01.04.2023	01.04.2024
1	2	3	4	5	6	7	8	9	10	11
Andaman & Nicobar Islands	0	0	2	3	0	0	2	3	4	6
Andhra Pradesh	161	184	355	792	8	12	492	893	1016	1881
Arunachal Pradesh	0	0	27	50	4	0	27	49	58	99
Assam	6	23	186	364	0	0	192	372	384	759
Bihar	121	168	219	414	1	1	335	570	676	1153
Chandigarh	7	12	19	12	8	5	32	22	66	51
Chhattisgarh	4	20	179	436	4	4	182	452	369	912
Dadra & Nagar Haveli and Daman & Diu	9	11	2	5	0	0	10	14	21	30
Delhi	262	267	101	193	3	1	290	311	656	772
Goa	10	16	42	61	3	0	49	65	104	142
Gujarat	729	764	686	1033	20	18	1365	1688	2800	3503
Haryana	273	352	402	709	2	2	667	993	1344	2056
Himachal Pradesh	15	26	65	118	0	0	80	137	160	281
Jammu and Kashmir	0	2	85	150	3	3	85	156	173	311
Jharkhand	82	104	191	286	0	0	264	375	537	765
Karnataka	274	349	861	1377	145	140	1165	1695	2445	3561
Kerala	136	179	259	580	61	37	401	723	857	1519
Ladakh	0	0	0	2	0	0	0	3	0	5
Lakshadweep	0	0	1	1	0	0	1	1	2	2
Madhya Pradesh	254	302	439	1029	25	21	678	1278	1396	2630
Maharashtra	681	796	690	1296	59	48	1310	1889	2740	4029
Manipur	0	0	33	52	0	0	33	51	66	103
Meghalaya	0	0	27	46	0	0	27	46	54	92
Mizoram	0	0	2	13	0	0	2	13	4	26
Nagaland	0	0	12	36	0	0	12	37	24	73
Odisha	97	127	278	591	4	4	368	686	747	1408
Puducherry	5	7	9	28	2	1	15	35	31	71
Punjab	236	248	312	677	9	9	535	863	1092	1797
Rajasthan	265	333	631	1358	24	23	853	1583	1773	3297
Sikkim	0	0	2	12	0	0	2	12	4	24
Tamil Nadu	214	306	563	1288	113	106	810	1530	1700	3230
Telangana	142	170	412	885	62	63	567	994	1183	2112
Tripura	20	22	31	55	0	0	44	72	95	149
Uttar Pradesh	790	964	960	2189	38	33	1694	2948	3482	6134
Uttarakhand	39	44	75	176	5	5	103	207	222	432
West Bengal	71	103	404	761	37	37	481	847	993	1748
All India	**4903**	**5899**	**8562**	**17078**	**640**	**573**	**13173**	**21613**	**27278**	**45163**

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

III.26: CNG Activities (Sales) in India

(Figures in TMT)

State (s) / Union Territory	Company name	No. of companies (as on 31.03.2024)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
Andhra Pradesh*	AGP City Gas Private Limited, Megha City Gas Distribution Private Limited, Godavari Gas Private Limited, Bhagyanagar Gas Limited, Indian Oil Corporation Limited	5.00	31.00	21.00	13.00	33.00	48.00	40.00
Andhra Pradesh, Karnataka and Tamil Nadu	AGP City Gas Private Limited	1.00	0	0	0	0.10	2.50	6.00
Assam	Assam Gas Company Limited, Purba Bharati Gas Private Limited, Adani Total Gas Limited	3.00	0	0.02	0.05	0.06	0.50	1.50
Bihar	GAIL (India) Limited, Think Gas Begusarai Private Limited, Indian Oil Corporation Limited, Bharat Petroleum Corporation Limited, Indian-Oil Adani Gas Private Limited	5.00	0	2.00	5.00	15.00	38.00	61.00
Bihar & Jharkhand	Indian Oil Corporation Limited	1.00	0	0	0	0	0.04	0.90
Chandigarh, Haryana, Punjab & Himachal Pradesh	Indian-Oil Adani Gas Private Limited	1.00	15.00	21.00	14.00	25.00	35.00	39.00
Dadra & Nagar Haveli**	Gujarat Gas Limited	1.00	0	3.00	2.00	3.00	3.20	3.30
Daman and Diu	Indian-Oil Adani Gas Private Limited	1.00	2.00	2.00	1.37	3.00	2.20	1.60
Delhi NCT***	Indraprastha Gas Limited	1.00	1144.00	1033.00	785.00	1015.00	1210.00	1192.00
Goa	Goa Natural Gas Private Limited, Indian-Oil Adani Gas Private Limited	2.00	0	0.03	0.15	1.05	2.90	5.10
Gujarat **	Sabarmati Gas Limited, Vadodara Gas Limited, Charotar Gas Sahakari Mandali Limited, Adani Total Gas Limited, Torrent Gas Private Limited, Gujarat Gas Limited, IRM Energy Private Limited, Hindustan Petroleum Corporation Limited	8.00	662.00	745.00	649.00	945.00	1084.00	1166.00
Gujarat & UT of Daman and Diu	IRM Energy Private Limited	1.00	0	0.07	1.36	3.82	5.70	7.30
Haryana	HPOIL Gas Private Limited, GAIL Gas Limited, Indraprastha Gas Limited, Bharat Petroleum Corporation Limited, Hindustan Petroleum Corporation Limited, Adani Total Gas Limited, Haryana City Gas (KCE) Private Limited, HCG (KCE) Private Limited, Indian-Oil Adani Gas Private Limited, Haryana City Gas Distribution Limited	10.00	179.00	197.00	173.00	303.00	428.00	478.00
Haryana & Himachal Pradesh	Indian-Oil Adani Gas Private Limited	1.00	0	0	0.08	0.70	1.20	1.30
Haryana & Punjab	Gujarat Gas Limited	1.00	0	0	1.40	5.00	6.70	7.60

State (s) / Union Territory	Company name	No. of companies (as on 31.03.2024)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
Himachal Pradesh	Gasonet Services (HP) Limited, Bharat Petroleum Corporation Limited	2.00	0	0	0	0.20	0.40	0.70
Jharkhand	GAIL Gas Limited, GAIL (India) Limited, Adani Total Gas Limited, Indian Oil Corporation Limited, Bharat Petroleum Corporation Limited	5.00	0	0.34	1.20	4.00	10.00	14.00
Karnataka	AGP City Gas Private Limited, Unison Enviro Private Limited, Megha City Gas Distribution Private Limited, Bharat Petroleum Corporation Limited, GAIL Gas Limited, Maharashtra Natural Gas Limited, Adani Total Gas Limited, Indian-Oil Adani Gas Private Limited	8.00	0.30	1.00	3.00	15.00	56.00	112.00
Kerala	AGP City Gas Private Limited, Indian-Oil Adani Gas Private Limited, Sholagasco Private Limited	3.00	1.00	6.00	4.00	12.00	28.00	43.00
Kerala & Puducherry	Indian-Oil Adani Gas Private Limited	1.00	0	0	0	0.20	1.50	4.30
Madhya Pradesh	Aavantika Gas Limited, Bharat Petroleum Corporation Limited, GAIL Gas Limited, Rajasthan State Gas Limited, Naveriya Gas Private Limited, Adani Total Gas Limited, Think Gas Bhopal Private Limited, Indian Oil Corporation Limited, Gujarat Gas Limited, Megha City Gas Distribution Private Limited	10.00	31.00	34.00	24.00	45.00	76.00	95.00
Madhya Pradesh & Rajasthan	Gujarat Gas Limited, Megha City Gas Distribution Private Limited	2.00	0	0	0.26	3.00	5.50	8.50
Madhya Pradesh and Chhattisgrah	Adani Total Gas Limited	1.00	0	0	0	0	0.01	0.10
Maharashtra	Mahanagar Gas Limited, Unison Enviro Private Limited, Gujarat Gas Limited, Adani Total Gas Limited, Indian Oil Corporation Limited, Torrent Gas Private Limited, Maharashtra Natural Gas Limited, Bharat Petroleum Corporation Limited, HCG Nagpur Private Limited, Megha City Gas Distribution Private Limited, HPOIL Gas Private Limited, IMC Limited	12.00	702.00	738.00	504.00	812.00	1022.00	1130.00
Maharashtra & Gujarat	Maharashtra Natural Gas Limited	1.00	0	0	1.40	5.60	19.00	23.00
Odisha	Adani Total Gas Limited, GAIL (India) Limited, Bharat Petroleum Corporation Limited, GAIL Gas Limited, Megha City Gas Distribution Private Limited	5.00	1.00	3.00	2.00	4.00	6.90	12.00
Puducherry (UT) & Tamil Nadu	East Coast Natural Gas Private Limited	1.00	0	0	0.01	0.04	0.18	0
Puducherry (UT)	Torrent Gas Private Limited	1.00	0	0	0	0	0.01	0
Punjab	IRM Energy Private Limited, Gujarat Gas Limited, Torrent Gas Private Limited, Think Gas Ludhiana Private Limited, Bharat Petroleum Corporation Limited, Indian Oil Corporation Limited, Megha City Gas Distribution Private Limited	7.00	1.00	7.00	14.00	43.00	61.00	66.00

State (s) / Union Territory	Company name	No. of companies (as on 31.03.2024)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
Rajasthan	Indraprastha Gas Limited, Indian Oil Corporation Limited, AGP CGD India Private Limited, Torrent Gas Private Limited, Torrent Gas Jaipur Private Limited, Adani Total Gas Limited, Dholpur CGD Private Limited, Gujarat Gas Limited, Rajasthan State Gas Limited, Gasonet Services (RJ) Limited, Haryana City Gas Distribution (Bhiwadi) Limited	11.00	7.00	9.00	15.00	47.00	94.00	134.00
Tamil Nadu	Adani Total Gas Limited, AGP CGD India Private Limited, Torrent Gas Chennai Private Limited, Indian Oil Corporation Limited, IRM Energy Private Limited, Megha City Gas Distribution Private Limited, Bharat Petroleum Corporation Limited	7.00	0	0	0.04	2.00	23.00	60.00
Telangana*	Megha City Gas Distribution Private Limited, Maharashtra Natural Gas Limited, Bhagyanagar Gas Limited, Torrent Gas Private Limited, Indian Oil Corporation Limited	5.00	0	13.00	9.00	33.00	68.00	64.00
Telangana & Karnataka	Megha City Gas Distribution Private Limited	1.00	0	0	0	0	0.16	1.2
Tripura	Tripura Natural Gas Company Limited	1.00	15.00	16.00	18.00	20.00	24.00	26.00
Uttar Pradesh	Green Gas Limited, GAIL Gas Limited, Indraprastha Gas Limited, Bharat Petroleum Corporation Limited, Hindustan Petroleum Corporation Limited, Torrent Gas Private Limited, Adani Total Gas Limited, GAIL (India) Limited, Bagpat Green Energy Private Limited, Central UP Gas Limited, Megha City Gas Distribution Private Limited, Indian-Oil Adani Gas Private Limited	12.00	282.00	392.00	339.00	545.00	670.00	769.00
Uttar Pradesh & Uttarakhand	Hindustan Petroleum Corporation Limited	1.00	0	0	0.36	2.00	3.50	5.60
Uttar Pradesh & Madhya Pradesh	Adani Total Gas Limited	1.00	0	0.01	0.40	8.00	4.90	7.90
Uttar Pradesh & Rajasthan	GAIL Gas Limited	1.00	0	0	0	0	36.00	40.00
Uttarakhand	Haridwar Natural Gas Private Limited, Indian-Oil Adani Gas Private Limited, GAIL Gas Limited, Gasonet Services (UK) Limited	4.00	0.10	1.00	5.00	12.00	18.00	20.00
West Bengal	Indian Oil Corporation Limited, Bengal Gas Company Limited, BharatPetroleum Corporation Limited, HindustanPetroleum Corporation limited, Indian Oil -Adani GasPrivate Limited	5.00	3.00	2.00	2.00	4.00	6.50	4.70
Total			**3076**	**3247**	**2589**	**3968**	**5103**	**5652**

Source : CGD companies (# Data subject to change based on inputs provided by CGD entities)

Notes:From the FY 2019-20 entries for * Andhra Pradesh & Telangana are reported separately. Prior to this AP & Telangana were taken together.

** Dadra & Nagar Haveli are reported separately from Gujarat State

*** Delhi contains information for Delhi NCT only. Remaining enteries of the NCR GAs are added into respective State.

III.27: Connection of Piped Natural Gas (PNG) and Commpressed Natural Gas (CNG) Stations in the Country - as on 31.03.2024

State/Union Territory	Geographical Area/ CGD Networks	PNG Connections				CNG Stations
		Domestic	Commercial	Industrial	Total	
1	2	3	4	5	6=3+4+5	7
1. Andhra Pradesh	Kakinada, East Godavari District (EAAA), West Godavari District, Krishna District (EAAA), Srikakulam, Visakhapatnam & Vizianagaram Districts, Vijaywada, Anantapur and YSR (Kadapa) Districts, Sri Potti Sriramulu Nellore District, Kurnool, Guntoor, Prakasam	2,71,585	470	39	2,72,094	189
2. Andhra Pradesh, Karnataka & Tamil Nadu	Chittoor, Kolar and Vellore Districts	9,648	6	6	9,660	43
3. Assam	Cachar, Hailakandi & Karimganj Districts, Kamrup & Kamrup Metropolitan Districts, Upper Assam, Nagaon, Morigaon, Hojai, Karbi Anglong, West Karbi Anglong and Dima Hasao districts,Lakhimpur, Dhemaji , Darrang, Udalgiri, Sonitpur and Biswanath Chariali districts, Kokrajhar, Dhubri, South Salmara-Mankachar and Goalpara districts, Baksa, Barpeta, Bongaigaon, Chirang, Nalbari and Bajali districts	58,474	1,393	456	60,323	22
4. Bihar	Aurangabad, Kaimur & Rohtas Districts, Begusarai District, Gaya & Nalanda Districts, Patna District, Araria, Purnia, Katihar and Kishanganj Districts, Arwal, Jehanabad, Bhojpur and Buxar Districts, Khagaria, Saharsa and Madhepura Districts, Lakhisarai, Munger and Bhagalpur Districts, Muzaffarpur, Vaishali, Saran and Samastipur Districts,Darbhanga, Madhubani, Supaul, Sitamarhi and Sheohar districts	1,55,826	127	10	1,55,963	129
5. Bihar and Uttar Pradesh	Gopalganj, Siwan, West Champaran, East Champaran and Deoria districts	4,400	-	-	-	27
6. Bihar & Jharkhand	Nawada and Koderma Districts, Sheikhpura, Jamui and Deoghar Districts, Banka (Bihar), Dumka, Godda, Jamtara, Pakur & Sahibganj districts	8,527	4	-	8,531	15
7. Chandigarh (UT), Haryana, Punjab & Himachal Pradesh	Chandigarh	26,845	165	46	27,056	27
8. Chhattisgarh	Baloda Bazar, Gariyaband and Raipur districts, Kabirdham, Raj Nandgaon and Kanker districts, Mungeli, Bemetara, Durg, Balod and Dhamtari districts, Jashpur, Raigarh, Janjgir-Champa and Mahasamund districts, Koriya, Surajpur, Balrampur and Surguja districts, Kondagaon, Bastar, Sukma, Narayanpur, Bijapur and Dantewada districts	3,499	-	-	3,499	18
9. Dadra & Nagar Haveli (UT)	UT of Dadra & Nagar Haveli	12,154	57	62	12,273	6
10. Daman & Diu (UT)	UT of Daman	5,240	73	51	5,364	5
11. Daman and Diu & Gujarat	Diu & Gir Somnath Districts	6,407	23	-	6,430	15
12. Goa	North Goa District, South Goa District	13,598	30	43	13,671	12

13. Gujarat	Bhavnagar, Jamnagar, Kutch (West), Kutch (East), Amreli District, Patan District, Dahej Vagra Taluka, Dahod District, Banaskantha District, Anand District (EAAA), Panchmahal District, Ahmedabad District (EAAA), Surendranagar District (EAAA) & Morbi District (EAAA), Barwala & Ranpur Talukas, Navsari District (EAAA), Surat District (EAAA), Tapi District (EAAA) & the Dangs District, Junagadh District, Kheda District (EAAA) & Mahisagar District, Narmada (Rajpipla) District, Porbandar District, Surat, Bharuch, Ankleshwar, Nadiad, Navsari, Rajkot, Surendranagar, Ahmedabad City and Daskroi Area, Hazira, Valsad, Anand area including Kanjari & Vadtal Villages (in Kheda District), Gandhinagar Mehsana Sabarkantha, Vadodara,	31,17,595	22,916	5,710	31,46,221	958
14. Haryana	Sonipat,Panipat District, Yamunanagar District, Rewari District, Rohtak District, Karnal District, Ambala & Kurukshetra Districts, Bhiwani, Charkhi Dadri & Mahendragarh Districts, Hisar District, Jhajjar District, Sonipat District (EAAA) & Jind District, Nuh and Palwal Distircts, Kaithal District, Faridabad, Gurugram.	3,68,917	955	2,331	3,72,203	409
15. Haryana & Himachal Pradesh	Panchkula District (EAAA), Sirmaur, Shimla & Solan (EAAA) Districts	48	-	-	48	10
16. Haryana & Punjab	Sirsa, Fatehabad and Mansa (Punjab) Districts	1,181	-	-	1,181	27
17. Himachal Pradesh	Bilaspur, Hamirpur & Una Districts, Mandi, Kullu, Kinnaur and Lahaul & Spiti districts, Kangra and Chamba districts	7,715	22	-	7,737	13
18. Jharkand	East Singhbhum District, Ranchi District, Bokaro, Hazaribagh & Ramgarh Districts, Giridih & Dhanbad Districts, Chatra and Palamu Districts, Seraikela-Kharsawan District, West Singhbhum District, Gumla, Latehar, Lohardaga, Simdega, Garhwa and Khunti districts	1,37,832	28	4	1,37,864	100
19. Karnataka	Bengaluru Rural and Urban Districts, Tumkur District, Dharwad District, Belgaum District, Chitradurga & Davanagere Districts, Ballari & Gadag Districts, Udupi District, Bidar District, Dakshina Kannada District*, Ramanagara District, Bagalkot, Koppal and Raichur Districts, Chikkamagaluru, Hassan and Kodagu Districts, Kalaburagi and Vijayapura Districts, Mysuru, Mandya and Chamarajanagar Districts, Uttara Kannada, Haveri and Shivamogga Districts, Chikkaballapur district	4,40,737	581	362	4,41,680	370
20. Kerala	Ernakulam District, Kozhikode & Wayanad Districts, Malappuram Districts, Palakkad & Thrissur Districts, Alapuzzha, Kollam and Thiruvananthapuram Districts, Idukki, Kottayam and Pattanamtitta districts	73,961	57	22	74,040	133
21. Kerala & Puducherry	Kannur, Kasaragod & Mahe Districts	2,933	-	-	2,933	13
22. Madhya Pradesh	Dewas, Dhar District, Bhopal & Rajgarh Districts, Guna District, Rewa District, Satna & Shandol Districts, Indore (including Ujjain City), Gwalior,Ashoknagar District, Gwalior (EAAA) District and Sheopur District,Raisen, Shajapur and Sehore Districts, Morena District, Shivpuri District,Sidhi and Singrauli Districts, Ujjain (EAAA) District, Dewas (EAAA) District and Indore (EAAA) District, Burhanpur, Khandwa, Khargone and Harda districts, Tikamgarh, Niwari, Chattarpur and Panna districts, Betul, Chhindwara, Seoni and Balaghat districts, Damoh, Jabalpur, Katni, Mandla, Umaria and Dindori districts, Hoshangabad, Narsinghpur, Sagar and Vidisha districts	2,38,605	472	519	2,39,596	296
23. Madhya Pradesh and Chhattisgrah	Anuppur, Bilaspur and Korba Districts	-	-	-	-	9
24. Madhya Pradesh and Rajasthan	Jhabua, Banswara, Ratlam and Dungarpur Districts, Agar Malwa, Neemuch, Mandsaur and Jhalawar districts	863	-	-	863	35
25. Madhya Pradesh and Uttar Pradesh	Jhansi (EAAA) District, Bhind, Jalaun, Lalitpur and Datia Districts	-	-	3	3	20

26. Maharashtra	Palghar District & Thane Rural, Raigarh District (EAAA), Pune District (EAAA), Ratnagiri District, Solapur District, Kolhapur District, Ahmednagar & Aurangabad Districts, Latur & Osmanabad Districts, Sangli & Satara Districts, Sindhudurg District, Mumbai & Greater Mumbai, Pune City including Pimpri - Chichwad & adjoining contigeneous areas Hinjewadi, Chakan, Talegaon, Thane urban and adjoining Municipalities, Buldana, Nanded and Parbhani districts, Beed, Jalgaon and Jalna districts, Akola, Hingoli and Washim districts, Amravati and Yavatmal districts, Chandrapur and Wardha districts, Nagpur district, Bhandara, Gondiya and Garchiroli districts	34,29,926	4,864	999	34,35,789	890
27. Maharashtra & Madhya Pradesh	Alirajpur, Nandurbar and Barwani districts	-	-	-	-	16
28. Maharashtra & Gujarat	Valsad (EAAA), Dhule & Nashik Districts	1,87,645	10	33	1,87,688	71
29. National Capital Territory of Delhi (UT)	National Capital Territory of Delhi	15,64,294	4,046	1,916	15,70,256	491
30 .Odisha	Angul & Dhekanal Districts, Sundargarh & Jharsuguda Districts, Balasore, Bhadrak & Mayurbhanj Districts, Bargarh, Debagarh & Sambalpur Districts, Ganjam, Nayagarh & Puri Districts, Jagatsinghpur & Kendrapara Districts, Jajpur & Kendujhar Districts, Khordha District, Cuttack District, Koraput, Malkangiri, and Nabarangpur districts, Gajapati, Kandhamal, Boudh and Sonepur districts, Rayagada, Kalahandi, Bolangir and Nuapada districts	1,21,446	10	-	1,21,456	105
31. Puducherry	Puducherry District, Yanam	-	-	-	-	2
32. Puducherry & Tamil Nadu	Karaikal & Nagapattinam Districts	329	-	-	329	8
33. Punjab	Jalandhar, Ludhiana, Amritsar District, Bhatinda District, Rupnagar District, Fatehgarh Sahib District, SAS Nagar District (EAAA), Patiala & Sangrur Districts, Ludhiana District (EAAA), Barnala & Moga Districts, Jalandhar District (EAAA), Kapurthala & SBS Nagar Districts, Ferozepur, Faridkot and Sri Muktsar Sahib Districts, Hoshiarpur and Gurdaspur Districts, Pathankot district, Tarn Taran district	85,572	622	293	86,487	216
34. Punjab and Rajasthan	Fazilka (except area already authorized), Ganganagar and Hanumangarh districts	4,842	-	-	-	20
35. Rajasthan	Kota, Barmer, Jaisalmer & Jodhpur Districts, Alwar (Other than Bhiwadi) & Jaipur Districts, Kota District (EAAA), Baran & Chittorgarh (Only Rawatbhata Taluka) Districts, Bhilwara & Bundi Districts, Chittorgarh (Other than Rawatbhata Taluka) & Udaipur Districts, Dholpur District, Bhiwadi (in Alwar District), Ajmer, Pali and Rajsamand Districts, Jalore and Sirohi Districts, Bikaner and Churu districts, Jhunjhunu, Sikar and Nagaur districts, Dausa, Karauli, Sawai Madhopur and Tonk districts	3,08,973	207	1,702	3,10,882	317
36. Tamil Nadu	Kanchipuram District, Chennai & Tiruvallur Districts, Coimbatore District, Cuddalore, Nagapattinam & Tiruvarur Districts, Ramanathapuram District, Salem District, Tiruppur District, Dharmapuri and Krishnagiri districts, Tiruvannamalai, Villupuram and Kallakkurichi districts, Ariyalur and Perambalur districts, Namakkal and Tiruchirapalli districts, Pudukottai, Sivaganga and Thanjavur districts, Madurai, Theni and Virudhnagar districts, Kanyakumari, Thoothukudi, Tiruneveli Kattabo and Tenkasi districts, Dindigul and Karur districts, The Nilgiris and Erode districts	25,175	9	15	25,199	313
37. Telangana	Bhadradri Kothagudem & Khamman Districts, Jagtial, Peddapalli, Karimnagar & Rajanna Sircilla Districts, Jangaon, Jayashankar Bhupalpally, Mahabubabad, Warangal Urban & Warangal Rural Districts, Medak, Siddipet & Sangareddy Districts, Medchal-Malkajgiri, Ranga Reddy & Vikarabad Districts, Nalgonda Suryapet & Yadadri Bhuvanagiri Districts, Hyderabad, Nizamabad, Adilabad, Nirmal, Mancherial Kumuram Bheem Asifabad and Kamareddy districts	2,11,820	111	117	2,12,048	181

38. Telangana & Karnataka	Jogulamba Gadwal, Nagarkurnool, Mahabubnagar, Narayanpet, Wanaparthy and Yadgir districts	120	-	1	-	5
39. Tripura	Gomati District, West Tripura (EAAA) District, Agartala, South Tripura and Sepahijala district, Dhalai, North Tripura, Unakoti and Khowai	62,136	508	62	62,706	18
40. Uttar Pradesh	Mathura, Meerut, Allahabad, Bagpat District, Jhansi, Saharanpur District, Bulandshahr (part) District, Bulandshahr District (EAAA), Aligarh & Hathras Districts, Allahabad District (EAAA), Bhadohi & Kaushambi Districts, Amethi, Pratapgarh & Raebareli Districts, Auraiya, Kanpur Dehat & Etawah Districts, Faizabad & Sultanpur Districts, Gorakhpur, Sant Kabir Nagar & Kushinagar Districts, Meerut District (EAAA), Muzaffarnagar & Shamli Districts, Moradabad (EAAA) District, Unnao (EAAA) District, Varanasi District, Khurja, Moradabad, Bareilly, Kanpur, Agra, Lucknow, Ghaziabad & Hapur Districts, Azamgarh, Mau and Ballia Districts, Bareilly (EAAA) District, Pilibhit and Rampur Districts, Basti and Ambedkarnagar Districts, Farrukhabad, Etah and Hardoi Districts, Gonda and Barabanki Districts, Jaunpur and Ghazipur Districts, Kanpur (EAAA) District, Fatehpur and Hamirpur Districts, Mainpuri and Kannauj Districts, Mirzapur, Chandauli and Sonbhadra Districts, Shahjahanpur and Budaun Districts, Amroha (except area already authorized) & Sambhal (except area already authorized) districts, Kasganj district, Banda, Chitrakoot and Mahoba, Lakhimpur Kheri, Sitapur, Bahraich, Shrawasti, Balrampur, Siddharth Nagar & Maharajganj districts, Noida (including Greater Noida)	16,26,498	2,688	3,332	16,32,518	1,001
41. Uttar Pradesh & Rajasthan	Firozabad (Taj Trapezium Zone)	22,700	51	348	23,099	45
42. Uttar Pradesh and Uttrakhand	Bijnor and Nainital Districts	15,141	-	-	15,141	29
43. Uttrakhand	Dehradun District, Udham Singh Nagar District, Haridwar District, Pauri Garhwal, Uttarkashi, Rudraprayag and Tehri Garhwal districts, Pithoragarh, Champawat, Almora, Chamoli and Bageshwar districts	73,297	97	109	73,503	35
44. UT of Jammu and Kashmir	Jammu, Udhampur, Reasi, Samba and Kathua districts	-	-	-	-	1
45. West Bengal	Burdwan District, Kolkata Muncipal Corporation and Parts of Adjoining Districts, Darjeeling, Jalpaiguri and Uttar Dinajpur Districts, Howrah (EAAA) District and Hoogly (EAAA) District, Nadia (EAAA) District and North 24 Parganas (EAAA) District, South 24 Parganas (EAAA) District, Purulia and Bankura districts, East Mednipore, West Mednipore and Jhargram districts, Alipurduar and Koch Bihar, Birbhum, Murshidabad, Maldah & Dakshin Dinajpur districts	24,644	3	1	24,648	127
A. Total CGD Networks authorized by PNGRB (1 to 45)		**1,27,31,148**	**40,605**	**18,592**	1,27,90,345	6,792
46. Gujarat	Ahmedabad City (Only for CNG), Vadodara, Gandhinagar	1,64,662	618	102	1,65,382	44
47. Haryana	Gurugram	26,706	137	62	26,905	25
B. Total CGD Networks Operational based on Court Orders or NOC (46+47)		**1,91,368**	**755**	**164**	1,92,287	69
Total (A+B)		**1,29,22,516**	**41,360**	**18,756**	**1,29,82,632**	**6,861**

Source: PNGRB

Note: 1. All the GAs where PNG connections/CNG Stations have been established is considered as Operational.

2. Under normal conditions, Operation of any particular GA commences within around one year of authorization.

3. EAAA stands for Excluding/Except Area Already Authorized

4. As on March 2024, there are 300 GAs authorized by PNGRB for development of CGD Networks across the country.

5. 7 more GAs have been authorised by PNGRB in 12th Bidding Round in the month of April'24

CHAPTER-IV



Prices and Taxation

Chapter Highlights



Wholesale Price Index (WPI) inflation for all commodities reduce by 0.7% during the FY2023-34 (151.40) as compared to 2022-23 (152.50). The WPI growth during 2023-24, in Crude Petroleum, Natural Gas and Petroleum Products stood at **(-)7.8%, 9.8% and (-)8.0%** respectively.

Index of Eight Core Industries stood at 7.6% higher in 2023-24 as compared to 2022-23. During 2023-24, Crude Oil production (weight: 8.98%) increased by **0.6%**, Net Natural Gas production (weight: 6.88 per cent) increased by **6.1%** and Petroleum Refinery production (weight: 28.04 per cent) increased by **3.6%** over 2022-23.





Domestic price of Natural Gas increased by around 50.2% from **6.10 (USD/ MMBTU)** as on 1st April, 2022 to **9.16 (USD/ MMBTU)** as on 1st April, 2023. Further Domestic price of Natural Gas fixed 6.50 (USD/ MMBTU) as on 1st April, 2024. i.e. 29.0% lower than the price as on 1st April, 2023.

International crude oil price (Indian basket) decreased by **11.4%** from **102.97 US $/bbl** during 2022-23 to **83.76 US $/bbl** during 2023-24. Among major Petroleum products, the highest decrease (21.5%) in International FOB price is observed for LPG and the least decrease (3%) is observed for FO comparing 2023-24 vis-à-vis 2022-23.





As on 1st April, 2024, Retail Selling Prices of Liquefied Petroleum Gas (₹14.2 Kg Cylinder) for metropolitan cities of India namely Delhi, Kolkata, Mumbai and Chennai are **₹ 803.00**, **₹ 829.00**, **₹ 802.50** and **₹ 818.50** respectively.

Contribution by Oil and Gas major 15 companies of Petroleum Sector to the Governments' exchequer during 2023-24 was **₹7,51,156 crore** which is marginal increase 0.3% lower as compared to 2022-23 **(₹7,48,718 crore)**. Contribution of Petroleum sector to the Central Exchequer is ₹4,32,394 crore and contribution to the State exchequer is ₹3,18,523 crores.





During 2023-24, Sales tax/VAT payments paid by 15 Major Oil & Gas Companies was at **₹2,92,716 crore**, **1.6%** higher as compared to 2022-23 **(₹2,88,086 crore)**

GST payment paid by 15 Major Oil & Gas Companies during the year 2023-24 was at **₹12,289 crore**, 6.8% lower than the GST payment during 2022-23 **(₹13,188 crore)**.





During 2023-24, Sales tax/VAT payments paid on the Petrol by 15 Major Oil & Gas Companies was at **₹ 96,265 crore** which is 4.2% higher as compared to 2023-24 **(₹ 92,353 crore)**.

During 2023-24, Sales tax/VAT payments paid on Diesel by 15 Major Oil & Gas Companies was at **₹1,38,401 crore** which 3.3% lower as compared to 2023-24 **(₹1,43,132 crore)**



Introduction

India is the world's third-largest energy consumer, and with its growing economy, energy demand is expected to rise further. As per the report of Energy Institute Statistical Review of World Energy, 2024, around 90% of India's primary energy comes from fossil fuels, with coal accounting for about 56.34%, oil and gas combined accounts for ~32.88% and other sources making up the remainder. This heavy reliance on fossil fuels underscores the importance of the energy sector in India's economic growth. India relies on a diverse mix of energy sources, including coal, oil, natural gas, renewables, Hydrogen and nuclear energy. Coal still accounts for a significant portion of electricity generation, but there is a strong push to reduce dependence on fossil fuels and increase the share of renewable energy.



The pricing of petroleum products was brought under Administered Price Mechanism (APM) effective July 1975 when the pricing of petroleum products was shifted from import parity principles to cost plus principles. Under APM (1975 to 2002) various oil pool accounts were maintained with the objective to i) ensure stability in selling price; ii) insulate consumers against international price fluctuations; and iii) subsidization of consumer price of certain products like kerosene for public distribution and domestic LPG by cross subsidization from other products like petrol, Aviation Turbine Fuel (ATF) etc. and indigenous crude oil.

Effective 01.04.2002, the APM was dismantled and the Government decided to provide subsidy on sale of PDS kerosene and domestic LPG at specified flat rates under the Budget. To administer these budgetary subsidies, the Government formulated a PDS kerosene and domestic LPG subsidy scheme in 2002. Under this scheme, it was decided that these subsidies will be phased out in 3-5 years.

Even though APM was dismantled effective 1.4.2002, since 2004, the consumers of sensitive petroleum products viz. Petrol (decontrolled w.e.f. 26.06.2010), Diesel (decontrolled w.e.f. 19.10.2014), PDS kerosene and Domestic LPG were being insulated from the impact of unprecedented high international oil prices by the Public Sector Oil Marketing Companies (OMCs) namely IOCL, HPCL & BPCL.

Prices of petrol and diesel have been market-determined with effect from 26.06.2010 and 19.10.2014 respectively. Since then, the Public Sector Oil Marketing Companies (OMCs) take appropriate decision on pricing of petrol and diesel. India imports more than 55% of its LPG requirement. Prices of LPG in the country are based on Saudi Contract Price (CP), the benchmark for international prices of LPG. For domestic LPG, the Government continues to modulate the effective price to consumer to insulate the common-man from rise in international prices.

Pursuant to the decision of the Cabinet on 06.04.2016, the Public Sector Oil Marketing Companies formulate policies for import of crude oil in their best commercial interest and in accordance with the extant guidelines of procurement. Further, to ensure security of crude supplies and to mitigate the risk of dependence on crude from single region, Oil Public Sector Undertakings (PSUs) already procure varied crude grades from different countries in various geographical locations viz. Middle East, Africa, North America, South America, etc.

Over the years, PSU refiners have expanded their capacity with increased refinery complexity enabling them to process wide range of crude oil grades with focus on efficiency and profitability. Currently, every PSU refinery

has its own optimized procedure for procurement, transportation, and processing of crude oil, including contract signings and payments to suppliers and ship-owners. To fulfil their crude oil requirements, PSU refineries import crude oil from exporting countries through (i) Annual term contracts and (ii) Spot purchases.

Crude oil imports are mainly done in two forms. One is term contracts and the other is sport tenders. The term contracts are normally finalised on a yearly basis and this is done with majorly national oil companies. Whatever is the balance requirement which is not being covered in the term contracts, that is covered by spot tenders. So, the approving authority for the term contracts is the Board of Directors and for the spot tenders, it is the Empowered Standing Committee, that is, ESC."

(i) Annual Term Contracts Annual term contracts which are usually for one year are finalised considering major factors such as techno-economic analysis, supply security, international political and trade relations, geographical spread of supply sources etc. Imports under term contracts from National Oil Companies (NOCs) are done at Official Selling Prices (OSP) or at mutually agreed price formula. Mutually agreed price formulas are approved by Empowered Standing Committee (ESC). While NOCs typically sell crude oil at an Official Selling Price declared by them on a monthly basis; Oil Majors, Multi-national Trading Companies sell crude oil based on prevailing market prices at the time of cargo loading or discharge whether through term or spot contracts. OMCs apply LP (Linear programming) based optimization model to ascertain the types of crude oils required by Refineries. The preference for such crudes is based on parameters like Refinery configuration(s), technical compatibility, consistent value creation, required product slate, etc. The outcome of the annual crude optimization exercise is the quantities of different crude oil(s) that can be procured.

(ii) Spot purchases are done usually through tenders inviting all registered parties to participate and crude oil offering maximum value is finalised for imports. Spot contract is approved by Crude Oil Procurement Committee (COPC)/Empowered Standing Committee (ESC) based on economic ranking of crude grades. Spot purchase helps refineries to adjust their crude oil purchases to meet varying seasonal/market demand and to meet operational exigencies. Further, spot market offers opportunities to buy competitively priced crudes and explore new crude oil grades from diverse geographies. Spot purchases of crude oil are finalised based on the objective function for individual crude oil grades available for spot purchases. Objective function is the maximum value that is estimated to accrue to the company by processing a particular crude oil grade.



The Indian basket of Crude Oil represents a derived basket comprising of Sour grade (Oman & Dubai average) and Sweet grade (Brent Dated) of Crude oil processed in Indian refineries in the ratio of 78.50% and 21.50% respectively . The percentages of 75.62 and 24.38 was based on the ratio of low sulphur and high sulphur crude oil processed (indigenous and imported) by all the Indian refineries (PSU and Pvt.) during the financial year 2023-24.

Price of crude oil like any other commodity is dependent on demand and supply of crude oil. Any kind of disruption in any of the oil producing countries that lead to fall in production of crude oil may result into increase in prices. Further crude oil producing, and consuming countries are located across the globe and the crude oil is generally transported from one country to another either through oil tankers or pipelines. There could be various geopolitical risks which could have an adverse impact on smooth supply of crude oil and its prices such as:

- War in any oil producing country (Eg: Russia-Ukraine War)
- Political/Civil unrest/Strikes in any oil producing country adversely impacting the operation in production facilities and export terminals resulting in declaration of Force Majeure (Eg: Libya, Nigeria)
- Sanctions on any oil producing country (Eg: Iran, Venezuela, Russia). Planned/Unplanned maintenance in oil producing country
- Any bottleneck in transportation of crude oil (Eg: Delays in transit through Suez Canal, Panama Canal etc.)
- Attack on any oil production/storage facility or oil tanker
- Disruption in supply of other energy sources like natural gas, coal etc.

As a part of the crude oil import strategy to ensure security of supplies and cost optimisation, Oil PSUs look out for opportunities to increase its geographical spread of crude oil supply sources to enhance the crude oil basket.

The default payment currency for all contracts for import of crude oil is USD as per the international trade practice. Recently, Reserve Bank of India (RBI) vide circular RBI/2022-2023/90 dated July 11, 2022 on International Trade Settlement in Indian Rupees (INR), introduced additional arrangement for invoicing, payment, and settlement of exports / imports in INR. Authorised Dealer (AD) banks in India have been permitted to open Rupee Vostro Accounts of correspondent bank/s of the partner trading country with an approval from the RBI with details of the arrangement. Indian importers undertaking imports through this mechanism shall make payment in INR which shall be credited into the Special Vostro account of the correspondent bank of the partner country, against the invoices for the supply of goods or services from the overseas seller /supplier. Payments for crude oil can be made in INR, subject to the suppliers' complying with regulatory guidelines in this regard. Currently, Reliance and Oil PSUs do not have an agreement with any crude oil supplier to make purchases in Indian currency for supply of crude oil."

The issue of pricing and marketing freedom for domestic gas is under constant review in this Ministry. New Domestic Gas Pricing Guidelines (NDGPG), notified in October 2014, were based on the prices prevailing in major international gas hubs, to strike a balance between the requirements of both producing and consuming sectors. The prices are determined on pre-defined parameters in a transparent way without Government intervention. The Domestic Gas Price P (wellhead) is based on the weighted average price of the leading international benchmarks and is declared half yearly. The data used is last one year with one quarter lag and is based on the natural gas consumption data along with corresponding natural gas prices.

With the vision of moving towards a gas-based economy and increasing the share of natural gas in India's energy mix, a slew of measures have been taken in this direction, which are summarized below:

i. Marketing and Pricing Freedom for Gas produced from High Pressure-High Temperature (HP-HT) & Deepwater areas with price ceiling, Under HELP Policy (DSF & OALP), CBM blocks, North-Eastern Region, New Gas Discoveries having FDP approved after 28.02.2019

ii. Standard procedure to discover market price of gas through a transparent and competitive process and permitting Affiliates to participate in bidding process. Empanelled agencies for carrying out e-bidding have been notified.

iii. Freedom to sell small quantity of gas through PNGRB authorized gas exchanges- an additional mechanism has been provided to gas producers having pricing and marketing freedom, for selling small quantity of gas, upto 500 MMSCM or 10% of annual production from Contract Area, whichever is higher, per year through gas exchanges authorized by PNGRB.

iv. Detailed guidelines for monetization of Ad-hoc/Test Gas - as a further momentum to gas reforms and saving the environment, Government issued detailed guidelines for monetization of Ad-hoc/Test Gas produced during the Testing of oil and gas well vide OM dated 22.11.2021.



Finance Crude oil prices continue to be volatile on demand concerns and geopolitical tensions. Brent Crude prices had fallen to a near three-year low of around $70/bbl on 10 September, despite hefty supply cuts in Libya and continued crude oil inventory draws. The weakened global economic outlook, driven by subdued demand in the U.S. and China, along with OPEC+'s decision to raise production from December 2024, contributed to this drop. Subsequently Brent crude oil prices recovered and were hovering around $80/bbl in the first week of October due to increase middle east escalations between Israel-Hamas/Hezbollah/Iran. However, since then prices have subsequently cooled down and presently Brent crude oil prices are range bound and are hovering in $73/bbl to $76/bbl range.

The average price of Dated Brent during April-September 2024 decreased to $82.60/bbl from an average of $83.15/bbl during 2023-24 i.e., decreased by 0.67%. Similarly, the average price of Indian Basket of crude oil during April-September 2024 has decreased to $81.92/bbl from the average of $82.58/bbl during 2023-24 i.e.. decrease of 0.80%.

The Office of the Economic Adviser to the Government of India (Ministry of Industry) undertook to publish for the first time, an index number of wholesale prices, with base week ended August 19, 1939 = 100, from the week commencing January 10, 1942. The WPI was calculated as the geometric mean of the price relatives of 23 commodities. Each item was assigned equal weight and for each item, there was a single price quotation. From 1947, the series included as many as 78 commodities, covering 215 individual quotations, classified into five groups: food articles; industrial raw materials; semi-manufactures; manufactures; and miscellaneous.

The Wholesale Price Index represents the price of a basket of wholesale goods. WPI focuses on the price of goods that are traded between corporations. It does not concentrate on goods purchased by the consumers. The main objective of WPI is monitoring price drifts that reflect demand and supply in manufacturing, construction and industry. WPI helps in assessing the macroeconomic as well as microeconomic conditions of an economy.

The wholesale price index (WPI) is based on the wholesale price of a few relevant commodities of over 240 commodities available. The commodities chosen for the calculation are based on their importance in the region and the point of time the WPI is employed. The Government has revised the base year of All-India Wholesale Price Index (WPI) from 2004-05 to 2011-12.The revision of the base year of the macroeconomic indicators is a regular exercise to capture structural changes in the economy and to improve the quality, coverage and representativeness of the indices. The base year revision of WPI has aligned the series with the base year of other macroeconomic indicators such as the Gross Domestic Product (GDP) and Index of Industrial Production (IIP).



As WPI captures price movements in a most comprehensive way, it is widely used by Government, banks, industry and business circles. Significant monetary and fiscal policy changes are often linked to WPI movements. Similarly, the movement of WPI serves as an influential determinant, in the formulation of trade, fiscal and other economic policies by the Government of India.

The core sector in India comprises eight key industries: coal, crude oil, natural gas, refinery products, fertilizers, steel, cement, and electricity. Core sector growth refers to the growth rate or the increase in output/production from the core industries of an economy over a given period of time, typically measured on an annual or monthly basis. The core sector growth is calculated by combining the growth rates of these individual industries, using their respective weights in the overall Index of Core Industries (ICI)

The core sector's performance is considered a key indicator of a country's overall industrial and economic performance, serving as a barometer for gauging the health of the economy and predicting future economic trends. For example, steel is a critical material for construction, automobiles, and machinery. Electricity is essential for powering factories, homes, and businesses.

The Index of Eight Core Industries measures the combined and individual performance of production of eight core industries viz. Cement, Coal, Crude Oil, Electricity, Fertilizers, Natural Gas, Refinery Products and Steel. The Eight Core Industries comprise 40.27 percent of the weight of items included in the Index of Industrial Production (IIP)

The Index of Eight Core Industries (ICI) is prepared every month and released by the Office of the Economic Adviser (OEA), Department for Promotion of Industry and Internal Trade (DPIIT), and Ministry of Commerce & Industry. The ICI comprises various components that collectively reflect the performance and vitality of India's industrial sector.

These components include:

- Coal: Coal production, excluding Coking coal.
- Electricity: Electricity generation from thermal, nuclear, hydro sources, and imports from Bhutan.
- Crude Oil: Total crude oil production.
- Cement: Production in both large plants and mini plants.
- Natural Gas: Total production of natural gas.
- Steel: Production of alloy and non-alloy steel only.
- Refinery Products: Total refinery production.
- Fertiliser: Production of urea, ammonium sulphate, calcium ammonium nitrate, complex grade fertiliser, single superphosphate, among others.

Subsidy provided by the government and oil companies on petroleum products refers to financial assistance or support granted to reduce the cost of producing or purchasing petroleum products such as diesel, kerosene, and liquefied petroleum gas (LPG). These subsidies are typically aimed at stabilizing prices for consumers, particularly those in lower-income brackets, and promoting economic development by making essential energy resources more affordable. The subsidies can take various forms, including direct financial transfers, price discounts, or reimbursements to oil companies for selling petroleum products below market prices.

Central excise duties are levied by the Union Government on commodities manufactured or produced within the country and consumed within the country and Customs duty refers to the tax imposed on goods when they are transported across international borders. In simple terms, it is the tax that is levied on import and export of goods. The government uses this duty to raise its revenues, safeguard domestic industries, and regulate movement of goods. The Central Excise and Customs Tariff on petroleum products encompass various duties and taxes applicable to these commodities during importation and domestic production.



Sales tax is a tax imposed on the sale of goods and services. It is typically a percentage of the purchase price and is added to the final cost of the product or service. The rate of sales tax varies by location, with different states having their own rates. Also, it's a form of indirect tax, meaning that it is a tax that can be shifted to others. Sales tax rates applicable on crude oil, natural gas, and other petroleum products refer to the percentage of tax imposed by the government on the sale of these commodities. These taxes are typically levied by state governments and union territories in India and are an important source of revenue for them. The sales tax rates can vary depending on the specific petroleum product, its usage, and the region where the sale takes place.

Oil & Gas industry is one of the most important contributors to Central & State Exchequers. Under the Constitution, the central government has the powers to tax the production of petroleum products, while states have the power to tax their sale. Petroleum has been kept outside the purview of the Goods and Services Tax (GST), till the GST Council decides. Over the years, the central government has used taxes to prevent sharp fluctuations in the retail price of diesel and petrol. In the past, when global crude oil prices have increased, duties have been cut. Since 2014, as global crude oil prices declined, excise duties have been increased. During the FY 2023-24, Petroleum sector contributed ₹7,51,156 crores in which ₹432,394 crores to Central exchequer by way of various Taxes /duties on crude oil & petroleum products, Corporate Income tax and other ways like dividend, etc. The Contribution of petroleum sector to State exchequer during FY 2023-24 is ₹318,761 crores by way of VAT and other taxes, royalty, etc.

IV.1: Indices of Selected Oil & Gas Products (Base Year 2011-12=100)

Items	Weight (%)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wholesale Price Index							
All commodities	**100.00**	**119.80**	**121.80**	**123.40**	**139.40**	**152.50**	**151.40**
Crude Petroleum & Natural Gas	**2.41**	**92.40**	**85.30**	**70.40**	**110.30**	**158.40**	**153.60**
Crude Petroleum	1.95	84.30	73.60	62.00	110.30	143.30	132.10
Natural Gas	0.46	126.20	134.50	105.60	110.10	221.90	243.60
Total Petroleum Products (Mineral Oils)	**7.95**	**96.70**	**92.30**	**79.20**	**126.20**	**172.90**	**159.00**
LPG	0.64	92.10	84.50	82.20	117.80	130.90	116.80
Petrol	1.60	88.40	85.60	75.50	123.00	164.10	158.70
Naphtha	0.87	92.60	82.30	65.10	115.80	135.90	128.30
Kerosene	0.19	152.40	172.80	116.80	221.90	402.60	332.20
Aviation Turbine Fuel	0.32	102.80	97.20	62.50	112.40	188.50	158.60
High Speed Diesel Oil	3.10	97.10	93.70	80.20	128.20	191.40	171.90
Furnace Oil	0.67	94.70	81.00	67.90	108.20	127.20	127.30
Lube Oil	0.29	124.80	131.70	137.20	162.00	180.00	189.70
Bitumen	0.23	85.60	82.80	77.90	113.20	131.40	123.50
Petroleum Coke	0.05	149.70	128.60	132.40	220.10	293.60	204.90
Index of Eight Core Industries							
Overall Index	**100.00**	**131.18**	**131.65**	**123.24**	**136.07**	**146.67**	**157.81**
Index of Coal	10.33	134.10	133.62	131.13	142.34	163.47	182.70
Index of Crude Oil	**8.98**	**89.80**	**84.46**	**80.06**	**77.95**	**76.60**	**77.07**
Index of Natural Gas	**6.88**	**68.98**	**65.09**	**59.78**	**71.28**	**72.42**	**76.81**
Index of Petroleum Refinery Products	**28.04**	**129.11**	**129.40**	**114.88**	**125.14**	**131.18**	**135.85**
Index of Fertilizers	2.63	106.98	109.83	111.65	112.42	125.14	129.79
Index of Steel	17.92	147.67	152.62	139.40	163.02	178.12	200.21
Index of Cement	5.37	146.98	145.69	129.96	156.95	170.61	185.91
Index of Electricity	19.85	156.87	158.35	157.57	170.12	185.24	198.27

Source: Ministry of Commerce & Industry

IV.2: Consumer and Producer Prices of Natural Gas

Effective Date	Consumer Prices		Producer Prices			Calorific Value (K. Cal / SCM)	Domestic Price of Natural Gas	Gas Price Ceiling	NELP & PRE-NELP block*
	Off-shore (Landfall point) and On-shore	For North-East States	ONGC	ONGC (North-East States)	OIL (North-East States)				
	(in ₹/'000' cubic metre)						(USD/ MMBTU)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
01.04.2018	7895	4737	7895	7895	7895	10000	3.06	6.78	-
01.04.2019	10174	6093	10174	10174	10174	10000	3.69	9.32	-
01.04.2020	7052	4219	7052	7052	7052	10000	2.39	5.61	-
01.04.2021	5170	3091	5170	5170	5170	10000	1.79	3.62	-
01.04.2022	18455	11073	18455	18455	18455	10000	6.10	9.92	-
01.04.2023	29912	17960	29912	29912	29912	10000	9.16	12.12	-
01.04.2024	21409	12845	21409	21409	21409	10000	6.50	9.87	8.38
01.05.2024	21515	12909	21515	21515	21514	10000	6.50	9.87	8.90
01.06.2024	21510	12906	21510	21510	21509	10000	6.50	9.87	8.44

Notes: *:Where Govt approval of prices is required.

1. W e f 08.04.2023, GOI revised Domestic natural Gas Pricing Guidelines 2014 and has started declaring Domestic Gas Price on monthly basis. Prior to this, Domestic Gas Price was notified on half yearly basis according to the New Domestic Gas Pricing Guidelines, 2014 notified on 25.10.2014. As per revised Guidelines w e f 08.04.2023:

   (i) Domestic Natural Gas Price (APM price) shall be 10% of the Indian Crude Basket Price as defined by Petroleum Planning and Analysis Cell (PPAC) from time to time. (ii) For the gas produced by ONGC & OIL from their nomination fields, the APM price shall be subject to a floor and a ceiling. The initial floor and ceiling prices shall be $4/MMBTU and $6.5/MMBTU respectively. The ceiling would be maintained for the next two years (FY 2023-24 and 2024-25) and then increased by $0.25/MMBTU each year."

2. Producer Price as well as Consumer price of natural gas produced by the NOCs including ONGC is fixed by the MoPNG, Government of India from time to time. Till 31.10.2014, different gas prices were applicable for APM (Administrative Price Mechanism) and non-APM customers. MoPNG has notified "New Domestic Natural Gas Pricing Guidelines, 2014" on 25 Oct'2014. These guidelines are effective from 01 Nov'2014.

3. The New Domestic Natural Gas pricing guidelines 2014 (further revised w e f 08.04.2023) shall not be applicable to:

   i) The Gas to be produced from Discoveries in Deepwater, Ultra Deepwater, and High Pressure-High Temperature areas, in terms of MoPNG letter dated 21.03.16 (Marketing including pricing freedom).

   ii) CBM gas, in terms of Government Notification dt. 11.04.2017.

   iii) New discoveries in Nomination blocks whose FDP will be approved by DGH as per notifications dated 28.02.2019

   iv) Existing and Future discoveries in Pre-NELP and NELP fields in North East which will commence production on 01.07.2018 and after.

   v) Adhoc/ Test Gas as per guidelines dated 22.11.2021

Source: ONGC, OIL and PPAC

IV.3: Weighted Average Crude Oil Prices

(in ₹/MT)

Year	Particulars	Basic Price	Royalty	OID Cess	Sales Tax/VAT/CST
(1)	(2)	(3)	(4)	(5)	(6)
2018-19	Offshore crude	36494	3232	6074	1253
	Onshore crude	34579	5555	5755	1707
	Offshore and Onshore crude	35886	3968	5973	1397
2019-20	Offshore crude	31604	2819	5254	1077
	Onshore crude	30488	4781	5157	1570
	Offshore and Onshore crude	31237	3464	5222	1239
2020-21	Offshore crude	24187	2105	4018	783
	Onshore crude	23081	3806	3897	1151
	Offshore and Onshore crude	23832	2651	3979	901
2021-22	Offshore crude	43745	3738	7268	1270
	Onshore crude	41088	6278	6937	2042
	Offshore and Onshore crude	42874	4571	7160	1523
2022-23	Offshore crude	56837	5069	8637	1785
	Onshore crude	52719	8342	8161	2611
	Offshore and Onshore crude	55436	6183	8475	2066
2023-24	Offshore crude	51425	4499	7718	1607
	Onshore crude	47600	7600	7050	2483
	Offshore and Onshore crude	50116	5560	7490	1906

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. Basic Price up to 2017-18 is inclusive of VAT/CST.
3. VAT/CST and Royalty are worked out based on Gross (Pre-discount) Price. However, the above levies are actually paid on post- discount price. From the Second Quarter of 2015-16 onwards, no subsidy discount has been extended by ONGC to refineries /OMCs.
4. Royalty and OID Cess are production levies and are part of cost.
5. NCCD @ ₹ 50/MT & Excise Duty @ Re1/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 has been paid considering specific rate of ₹ 4,500/MT from 17.03.12 till Feb'16 and "20% ad-valorem" w.e.f. 01.03.2016

Source: ONGC

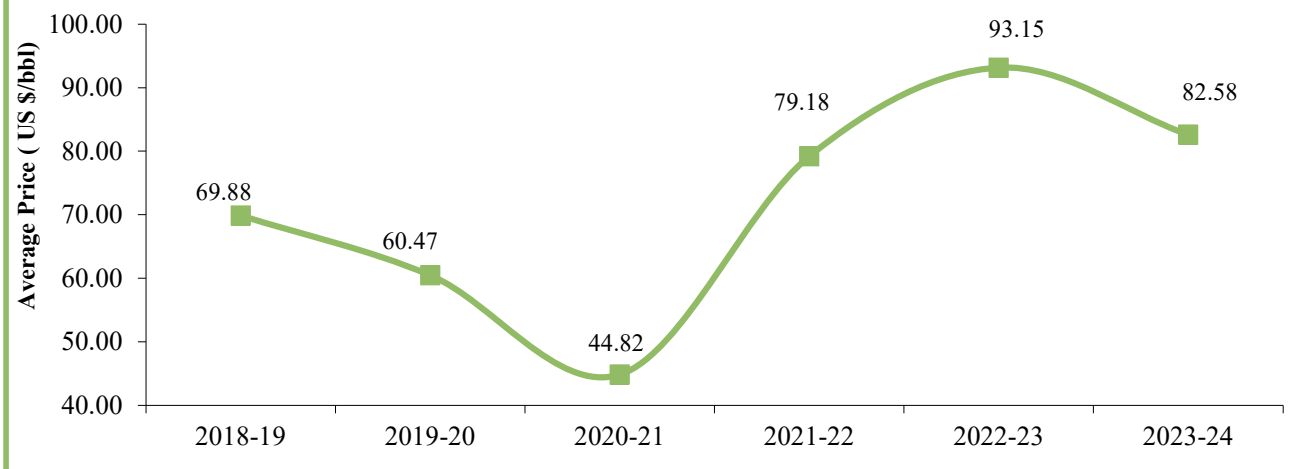
IV.4: Month-wise & Year-wise Average International Crude Oil Prices (Indian Basket)

Year/Month	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	% Growth in 2023-24 over 2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
April	69.22	71.00	19.90	63.40	102.97	83.76	-18.66
May	75.25	70.01	30.61	66.95	109.51	74.98	-31.53
June	73.83	62.37	40.63	71.98	116.01	74.93	-35.41
July	73.47	63.63	43.35	73.54	105.49	80.37	-23.82
August	72.53	59.35	44.19	69.80	97.40	86.43	-11.27
September	77.88	61.72	41.35	73.13	90.71	93.54	3.12
October	80.08	59.70	40.66	82.11	91.70	90.08	-1.77
November	65.40	62.53	43.34	80.64	87.55	83.46	-4.68
December	57.77	65.50	49.84	73.30	78.10	77.42	-0.87
January	59.27	64.31	54.79	84.67	80.92	79.22	-2.11
February	64.53	54.63	61.22	94.07	82.28	81.62	-0.80
March	66.74	33.36	64.73	112.87	78.54	84.49	7.57
Year Average	**69.88**	**60.47**	**44.82**	**79.18**	**93.15**	**82.58**	**-11.35**
Ratio	**74.77:25.23**	**75.50:24.50**	**75.62:24.38**	**75.62:24.38**	**75.62:24.38**	**75.62:24.38**	**-**

Note: 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 crude processed during previous financial year, e.g. ratio of crude processed as indicated in the table above.

Source: IOCL & PPAC

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



IV.5: International FOB Prices of Crude Oil & Major Petroleum Products

Period	Crude Oil (Indian Basket)	Petrol	Diesel	Kerosene	FO	Naphtha	LPG
	($/BBL)				($/MT)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2018-19	69.88	75.58	82.51	82.24	420.93	573.72	526.00
2019-20	60.47	66.94	71.78	70.56	321.19	471.08	453.75
2020-21	44.82	47.68	47.86	43.60	259.30	378.93	415.17
2021-22	79.18	89.66	88.45	85.31	445.25	698.25	692.67
2022-23	93.15	107.00	128.08	120.55	452.66	666.53	709.90
2023-24	**82.58**	**93.85**	**101.25**	**99.72**	**439.17**	**593.75**	**557.43**
% Growth in 2023-24 over 2022-23	-11.35	-12.28	-20.94	-17.28	-2.98	-10.92	-21.48

Notes: FOB: Freight on Board

1. Price of kerosene ,Diesel, Naphtha & FO is for Arab Gulf Market. LPG Price is Monthly Saudi Aramco CP based on 60:40 butane / propane ratio.
2. From 01.04.2017, the Diesel price is for 0.005% Sulphur, From 02.01.2013 the Diesel price in Arab Gulf Market is for 0.05% Sulphur, and for earlier years the price is for 0.5% Sulphur. Price of Petrol is 92 RON unleaded for Singapore market.
3. FOB prices does not include Trade premium/discounts.

Source: PPAC

IV.6: Rates of CPSEs 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)
01.08.2017	₹ 2674.74/KL + 0.859% of Product Billable Price	₹ 2031.38/KL + 0.257% of Product Billable Price	01.08.2017	47.48	23.74	0.06
			01.09.2017	47.48	23.74	0.16
			30.09.2017	48.89	24.20	0.16
			01.10.2017	48.89	24.20	0.23
			01.11.2017	48.89	24.20	0.36
			01.01.2018	48.89	24.20	0.35
			01.02.2018	48.89	24.20	0.34
			01.03.2018	48.89	24.20	0.28
			01.04.2018	48.89	24.20	0.23
			01.06.2018	48.89	24.20	0.29
			01.07.2018	48.89	24.20	0.36
			01.08.2018	48.89	24.20	0.42
			01.09.2018	48.89	24.20	0.46
			01.10.2018	48.89	24.20	0.54
			01.11.2018	48.89	24.20	0.63
			07.11.2018	50.58	25.29	0.63
			01.12.2018	50.58	25.29	0.45
			01.01.2019	50.58	25.29	0.28
			01.02.2019	50.58	25.29	0.24
19.02.2019 to 01.04.2024	₹ 2637.80/KL + 0.859% of Product Billable Price	₹ 2000.60/KL + 0.257% of Product Billable Price	01.03.2019	50.58	25.29	0.30
			01.04.2019	50.58	25.29	0.31
			01.06.2019	50.58	25.29	0.35
			01.07.2019	50.58	25.29	0.21
			01.08.2019	56.20	28.10	-
			01.09.2019	59.02	29.51	-
			01.10.2019	61.84	30.92	-
			19.05.2022	64.84	32.42	-
			04.10.2023	73.08	36.54	-

Source: PPAC

IV.7: Subsidy Provided by the Government & Oil Companies on Petroleum Products

(in ₹ crore)

Particulars		2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)
1. Under recovery on Diesel		-	-	-	-	-	-
2. Under recovery on PDS Kerosene		5,950	1,833	-	-	-	-
3. Under recovery on Domestic LPG		-	-	-	-	22,000	-
A. Total Under-recoveries (1 to 3)		**5,950**	**1,833**	**-**	**-**	**22,000**	**-**
4. DBTL subsidy		31,447	22,635	3,559	-	823	1,143
5. Permanent Advance		-	-	-	-	-	-
6. Project Management Expenditure		92	91	99	242	32	84
B. Total DBTL related subsidies (4 to 6)		**31,539**	**22,726**	**3,658**	**242**	**855**	**1,227**
7. PMUY		5,636	1,403	(34)	1,569	6,110	10,217
8. PME & IEC under PMUY		34	43	110	-	-	-
C. Total PMUY related subsidy (7+8)		**5,670**	**1,446**	**76**	**1,569**	**6,110**	**10,217**
D. DBTK subsidy		**98**	**42**	**-**	**-**	**-**	**-**
9. PDS Kerosene and Domestic LPG Subsidy Scheme, 2002	SKO	-	-	-	-	-	-
	LPG						
10. Freight Subsidy (For Far-Flung Areas) Scheme, 2002	SKO	-	-	-	-	-	-
	LPG						
11. Natural Gas Subsidy for North East		557	574	336	405	1,354	1,174
12. Scheme for Promotion of Flagging of Merchant Ships in India		-	-	-	22	76	78
E. Other Subsidies (9 to 12)		**557**	**574**	**336**	**427**	**1,431**	**1,253**
F. PMGKY		**-**	**-**	**8,162**	**-**	**-**	**-**
Total Subsidy/ Under-recovery on Petroleum Products & Natural Gas (A+B+C+D+E + F)		**43,814**	**26,620**	**12,231**	**2,237**	**30,396**	**12,696**
Compensation							
13. By the Government		43,814	26,620	12,231	2,237	30,396	12,696
14. Upstream/Midstream Oil/Gas Companies		-	-	-	-	-	-
15. Borne by the OMCs		-	-	-	-	-	-

Note: on payment basis.

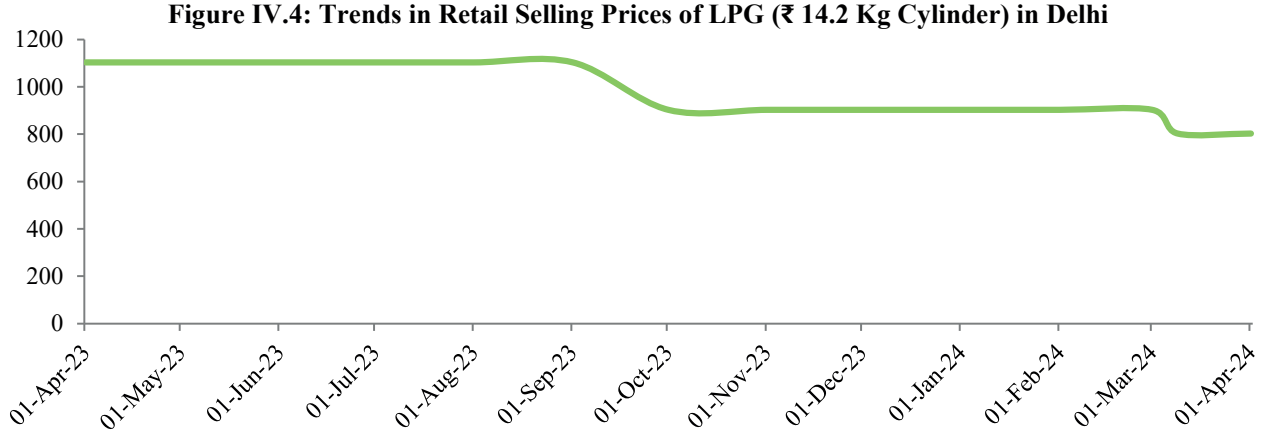
Source: PPAC

IV.8: Price Build-up and Retail Selling Prices of Liquefied Petroleum Gas in Metropolitan Cities in India

Elements/State	Delhi	Kolkata	Mumbai	Chennai
(1)	(2)	(3)	(4)	(5)
Trends in Retail Selling Prices of Liquefied Petroleum Gas (₹v 14.2 Kg Cylinder)				
01.04.2018	491.35	494.33	489.04	479.44
01.04.2019	706.50	732.50	678.50	722.00
01.04.2020	744.00	774.50	714.50	761.50
01.04.2021	809.00	835.50	809.00	825.00
01.04.2022	949.50	976.00	949.50	965.50
01.04.2023	1103.00	1129.00	1102.50	1118.50
01.04.2024	**803.00**	**829.00**	**802.50**	**818.50**
Price Build-up of Retail Selling Prices of Liquefied Petroleum Gas (₹ 14.2 Kg Cylinder) as on 01.04.2024				
1. Market Determined Price (as per PAHAL Scheme)	691.93	716.57	691.55	706.75
2. Add : GST (including GST on Distributor Commission)	38.25	39.48	38.23	38.99
3. Add : Distributor Commission	73.08	73.08	73.08	73.08
4. Retail Selling Price (1 to 3)	**803.26**	**829.13**	**802.86**	**818.82**
5. Retail Selling Price (Rounded)	803.00	829.00	802.50	818.50
6. Less: Cash Compensation to Consumer under DBTL	0.00	19.57	0.00	24.95
7. Effective Cost to Consumer after Subsidy (5-6)	**803.00**	**809.43**	**802.50**	**793.55**

Source: IOCL

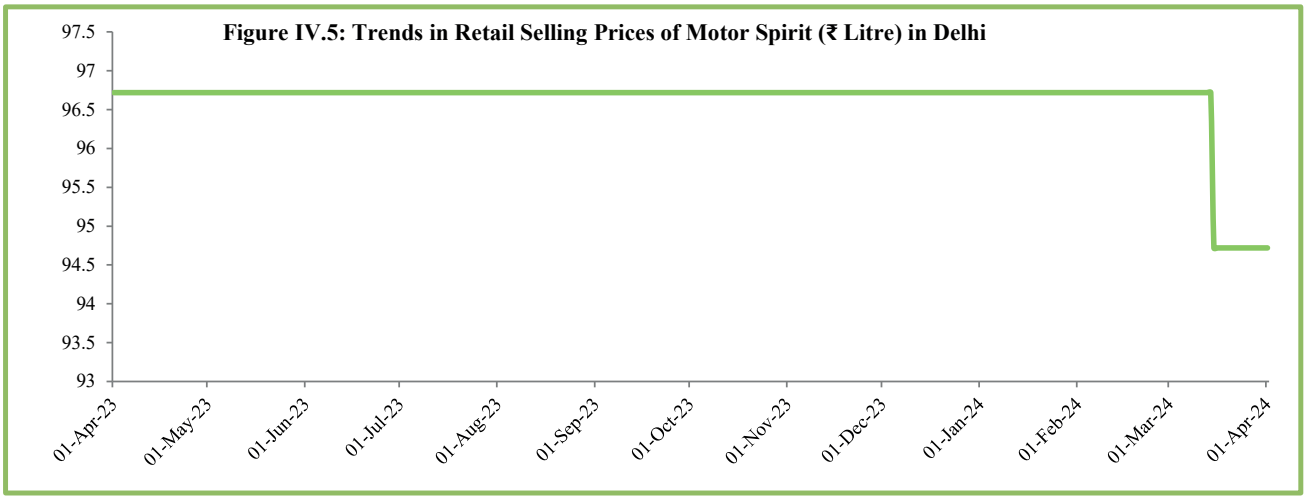
Figure IV.4: Trends in Retail Selling Prices of LPG (₹ 14.2 Kg Cylinder) in Delhi



IV.9: Price Build-up and Retail Selling Prices of of Motor Spirit in Metropolitan Cities in India

Elements/State	Delhi	Kolkata	Mumbai	Chennai
(1)	(2)	(3)	(4)	(5)
Trends in Retail Selling Prices of Motor Spirit (` Litre)				
01.04.2018	73.73	76.44	81.59	76.48
01.04.2019	72.86	74.88	78.43	75.62
01.04.2020	69.59	73.30	76.31	72.28
01.04.2021	90.56	90.77	96.98	92.58
01.04.2022	101.81	111.35	116.72	107.45
01.04.2023	96.72	106.03	106.31	102.63
01.04.2024	**94.72**	**103.94**	**104.21**	**100.75**
Price Build-up of Retail Selling Prices of Motor Spirit (₹ Litre) as on 01.04.2024				
1. Base Price	55.42	55.42	55.42	55.42
2. Freight etc	0.20	4.63	0.15	0.17
3. Price Charged to Dealers (excluding Excise Duty and VAT)	55.62	60.05	55.57	55.59
4. Add : Excise Duty	19.90	19.90	19.90	19.90
5. Add : Dealer Commission (Average)	3.81	3.90	3.90	3.87
6. Add : VAT (including VAT on Dealer Commission)	15.39	20.09	24.84	21.39
7. Retail Selling Price (`/Litre) (3 to 6)	**94.72**	**103.94**	**104.21**	**100.75**

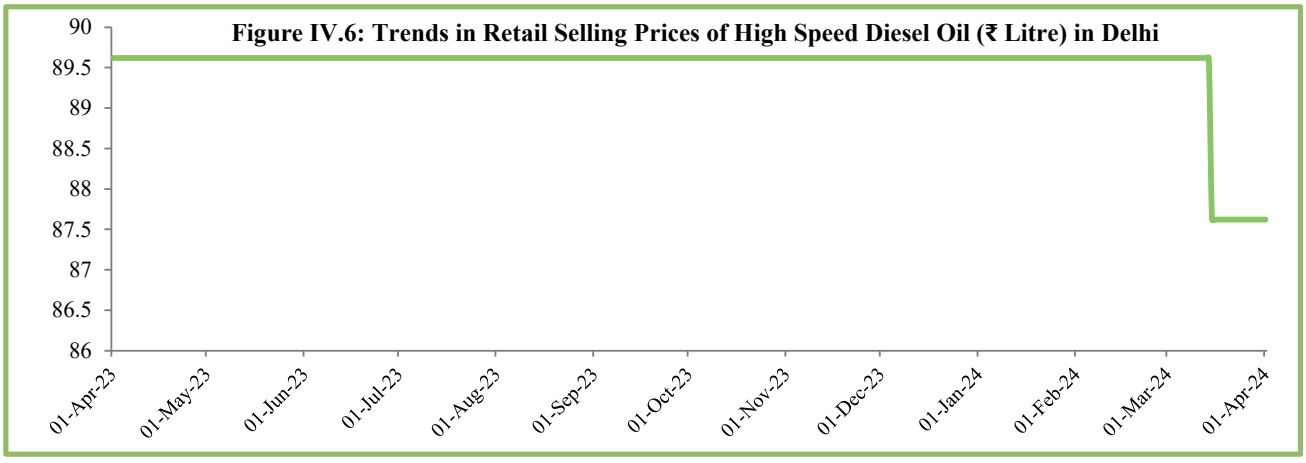
Source: IOCL



IV.10: Price Build-up and Retail Selling Prices of High Speed Diesel Oil in Metropolitan Cities in India

Elements/State	Delhi	Kolkata	Mumbai	Chennai
(1)	(2)	(3)	(4)	(5)
Trends in Retail Selling Prices of High Speed Diesel Oil (₹ Litre)				
01.04.2018	64.58	67.27	68.77	68.12
01.04.2019	66.09	67.83	69.17	69.78
01.04.2020	62.29	65.62	66.21	65.71
01.04.2021	80.87	83.75	87.96	85.88
01.04.2022	93.07	96.22	100.94	97.52
01.04.2023	89.62	92.76	94.27	94.24
01.04.2024	**87.62**	**90.76**	**92.15**	**92.34**
Price Build-up of Retail Selling Prices of High Speed Diesel Oil (` Litre) as on 01.04.2024				
1. Base Price	56.16	56.16	56.16	56.16
2. Freight etc	0.22	3.31	0.16	0.15
3. Price Charged to Dealers (excluding Excise Duty and VAT)	56.38	59.47	56.32	56.31
4. Add : Excise Duty	15.80	15.80	15.80	15.80
5. Add : Dealer Commission (Average)	2.62	2.63	2.63	2.63
6. Add : VAT (including VAT on Dealer Commission)	12.82	12.86	17.40	17.60
7. Retail Selling Price (`/Litre) (3 to 6)	**87.62**	**90.76**	**92.15**	**92.34**

Source: IOCL



IV.11: Price Build-up and Retail Selling Prices of Superior Kerosene Oil in Metropolitan Cities in India

Elements/State	Delhi	Kolkata	Mumbai	Chennai
(1)	(2)	(3)	(4)	(5)
Trends in Retail Selling Prices of Superior Kerosene Oil (` Litre)				
01.04.2018	-	26.30	23.96	13.60
01.04.2019	-	32.79	30.87	13.60
01.04.2020	-	27.85	25.72	13.60
01.04.2021	-	39.18	36.78	15.00
01.04.2022	-	79.62	76.36	15.00
01.04.2023	-	67.91	64.68	15.00
01.04.2024	-	68.48	65.23	15.00
Price Build-up of Retail Selling Prices of Superior Kerosene Oil (₹ Litre) as on 01.04.2024				
1. Ex-Storage Price	Kerosene free state	59,467.00	59,467.00	59,467.00
2. Siding Charge		19.37	-	-
3. Other State Levies/ State Govt Subsidy		-	-	(47,108.00)
4. Sales/GST Tax Amount		2,974.32	2,973.35	617.95
5. Sub Total (1 to 4)		62,460.69	62,440.35	12,976.95
6. Ex-Mi/ Depot Price/KL-Oil Co.		62,460.69	62,440.35	12,976.95
7. Ex-Mi/ Depot Price/KL-St. Govt.		62,460.69	62,440.35	12,976.95
8. Wholesales Margin		1,341.88	1,341.88	1,341.88
9. Transport Charges		816.60	465.37	216.80
10. Toll		-	70.00	-
11. Handling Charges		644.86	99.00	-
12. Rounding Up		-	5.56	-
13. GST On Wholesale Margin		140.17	99.09	67.09
14. Wholesales Price/KL (7 to 13)		65,404.20	64,521.25	14,602.72
15. Retailer Margin		1,048.30	675.00	360.00
16. Handling Charges		1,495.79	-	-
17. Retailer Transportation		386.60	-	40.00
18. GST On Retailer Margin		146.53	33.75	18.00
19. Retail Selling Price/KL (14 to 18)		68,481.42	65,230.00	15,020.72
20. Retail Selling Price (`/Litre)		**68.48**	**65.23**	**15.00**

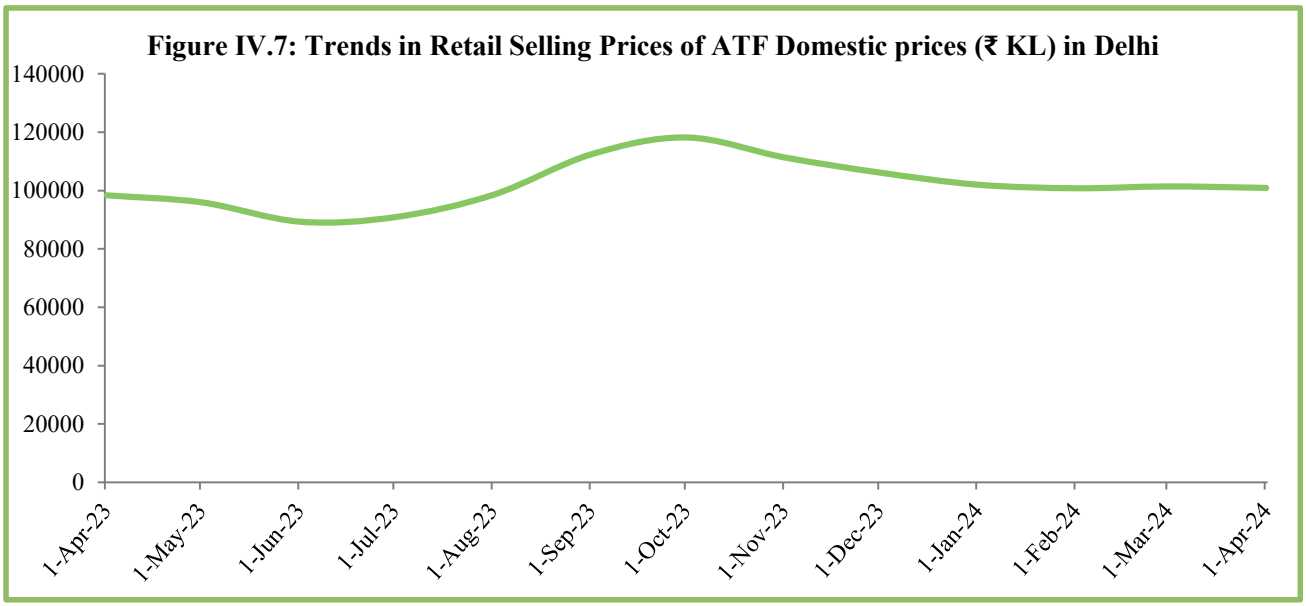
Note : (a) Selling price for Superior Kerosene Oil is for Public Distribution System (PDS)
(b) Delhi is declared as Kerosene free city, hence no PDS SKO rate declared.

Source: IOCL

IV.12: Price Build-up and Retail Selling Prices of ATF Domestic prices in Metropolitan Cities in India

Elements/State	Delhi	Kolkata	Mumbai	Chennai
(1)	(2)	(3)	(4)	(5)
Trends in Retail Selling Prices of ATF Domestic prices (₹ KL)				
01.04.2018	61,449.97	65985.36	61024.61	64615.19
01.04.2019	63,472.22	69242.21	63447.54	64713.18
01.04.2020	35,490.12	40902.59	35068.56	36923.17
01.04.2021	58,374.16	62732.69	56479.02	59541.72
01.04.2022	1,12,924.83	117353.71	111690.61	116583.70
01.04.2023	98,349.59	105228.98	91953.85	102491.86
01.04.2024	**1,00,893.63**	**1,09,898.61**	**94,466.41**	**1,04,973.36**
Price Build-up of Retail Selling Prices of ATF Domestic prices (₹ KL)as on 01.04.2024				
1. Base Price	65,340.00	69670.00	65020.00	65710.00
2. Freight & Cost etc	7,376.13	9536.21	7102.77	7600.53
3. Excise Duty and Cess	7,998.77	8712.68	7933.51	8064.16
4. State Taxes & Levies	20,178.73	21979.72	14410.13	23598.66
5. Retail Selling Price (₹/KL)(1 to 4)	1,00,893.63	1,09,898.61	94,466.41	1,04,973.35

Source: IOCL



IV.13: Central Excise and Customs Tariff (as on 01.04.2024)

Particulas	CUSTOMS			CENTRAL EXCISE			
	Basic Customs Duty	Additional Customs Duty (CVD)	Additional Customs Duty	Basic Excise Duty	Special Additional Excise Duty	Agriculture Infrastructure & Development Cess (AIDC)	Additional Excise Duty (Road and infrastructure Cess)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Petroleum Products on which GST is not levied (Non GST Products)							
Crude Petroleum	₹ 1/MT + ₹. 50/MT as NCCD	₹.1/MT	-	₹. 1/MT+ Cess @ 20% +₹.50/ MT as NCCD	₹.4900/MT	-	-
Petrol	2.50%	₹.1.40/ltr. + ₹.11.00/ ltr SAD+ ₹.2.50/ ltr AIDC	₹.5.00/ltr.	₹.1.40/ltr	₹.11.00/ltr	₹.2.50/ltr	₹.5.00/ltr.
Petrol (branded)	2.50%	₹.2.60/ltr. + ₹.11.00/ ltr SAD+ ₹.2.50/ ltr AIDC	₹.5.00/ltr.	₹.2.60/ltr	₹.11.00/ltr	₹.2.50/ltr	₹.5.00/ltr.
High Speed Diesel	2.50%	₹.1.80/ltr. + ₹.8.00/ ltr SAD+ ₹.4.00/ ltr AIDC	₹.2.00/ltr.	₹.1.80/ltr	₹.8.00/ltr	₹.4.00/ltr	₹.2.00/ltr.
High Speed Diesel (branded)	2.50%	₹.4.20/ltr. + ₹.8.00/ ltr SAD+ ₹.4.00/ ltr AIDC	₹.2.00/ltr.	₹.4.20/Ltr	₹.8.00/ltr	₹.4.00/ltr	₹.2.00/ltr.
Aviation Turbine Fuel 2	5.00%	11%	-	11%	-		-
Liquefied Natural Gas	2.50%	Nil	-	Nil	-		-
Natural Gas [Gasious state]	5.00%	Nil	-	Nil	-		-
Natural Gas [Compressed]	5.00%	14.00%	-	14.0%	-		-
Petroleum Products on which GST is levied							

Particular		Customs		GST
		Basic Customs Duty	CVD (in lieu of IGST)	
LPG	Domestic3	Nil	5.00%	5.00%
	Non - Domestic	5.00%	18.00%	18.00%
Kerosene	PDS	5.00%	5.00%	5.00%
	Non PDS	5.00%	18.00%	18.00%
Naphtha	Fertilizer	Nil	18.00%	18.00%
	Non- Fertilizer	2.50%	18.00%	18.00%
Butane / Propane	Domestic4	Nil	5.00%	5.00%
	Non-Domestic	2.50%	18.00%	18.00%
Bitumen & Asphalt		5.00%	18.00%	18.00%
Furnace Oil	Fertilizer	Nil	18.00%	18.00%
	Non- Fertilizer	2.50%	18.00%	18.00%
Light Diesel Oil		5.00%	18.00%	18.00%
Low Sulphur Heavy Stock/ HPS & other Res.	Fertilizer	Nil	18.00%	18.00%
	Non- Fertilizer	5.00%	18.00%	18.00%
Lube oil/greases		5.00%	18.00%	18.00%
Petroleum Coke		10.00%	18.00%	18.00%
Petroleum Jelly		5.00%	18.00%	18.00%
Transformer Oil		5.00%	18.00%	18.00%
Waxes all types		5.00%	18.00%	18.00%

NOTE:

1. In addition to the above , 10% Social Welfare Surcharge is also applicable on the total duties of Customs. However, where CVD is payable in lieu of IGST, social welfare surcharge is not applicable on the amount of CVD.
2. In case of ATF, Basic Excise Duty /Additional Customs Duty (CVD) is 2% in place of 11%, for supply to scheduled commuter airlines (SCA) from the regional connectivity scheme (RCS) airports.
3. An additional Basic Excise duty @Rs 2/ltr has been levied on unblended petrol (not blended with ethanol or methonal) intended for retail sale w.e.f. 01.11.2022.
4. 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. Basic Customs duty is Nil for import of Butane / Propane intended to be used as domestic LPG sold to household consumers (including NDEC) by PSU OMCs.

Source: www.cbic.gov.in & PPAC

IV.14: Sales Tax Rates Applicable on Crude Oil, Natural Gas and Select Petroleum Products (as on 01.04.2024)

State/U.T	Crude Oil	Natural Gas	MS	HSD	ATF Domestic
(1)	(2)	(3)	(4)	(5)	(6)
Andaman & Nicobar Islands	6.00%	10.00%	1.00%	1.00%	1.00%
Andhra Pradesh	5.00%	24.50%	31% + Rs 4 per Litre+Rs1 Per Litre Road Development Cess	22.25% + Rs 4 per Litre+Rs1 Per Litre Road Development Cess- 0.5% VAT on HSD supplied to Foreign going Vessel	1.00%
Arunachal Pradesh	4.00%	20.00%	14.50%	7.00%	1.00%
Assam	5%	15%	20.67% or Rs. 15.5 per litre whichever is higher	HSD - 18.32% or Rs. 11,500 per KL whichever is higher Rebate of Rs. 1.78 per litre subject to minimum tax of Rs. 11.50 per litre - For retails	24%
Bihar	5.00%	20.00%	23.58 percent or Rupees 16.65 per litre, Which ever is higher. Plus 30% Surharge	16.37 percent or Rupees 12.33 per litre, Which ever is higher. plus 30 % Surcharge	29.00% Gaya AFS- 4%
Chandigarh	12.50%	5.00%	15.24% or Rs 12.42 per liter which ever is higher +(MST Rs 10/- PER KL)	6.66% or Rs5.07 per liter which ever is higher +(MST Rs 10/- PER KL)	20.00% (MST:-Rs 10/- PER KL)
Chhattisgarh	5.00%	25.00%	24% + Rs 2 per ltr	23% + Re 1 per ltr	4.00%
Delhi	5.00%	0.00%	19.40%	16.75% plus Rs. 250 per KL Air Ambience Cess	25.00%
Goa	20%Goa Green Cess- 0.50% on Turnover excluding VAT	Piped Natural Gas for domestic use - 4% Regasified Liquefied Natural Gas - 12.50%Natural Gas other than above - 12.50 %Goa Green Cess- 0.50% on Turnover excluding VAT	20% Goa Green Cess- 0.50% on Turnover excluding VAT	17% Goa Green Cess- 0.50% on Turnover excluding VAT	8% Goa Green Cess- 0.50% on Turnover excluding VAT
Gujarat	5.00%	15.00%	13.70%, Motor Spirit Cess-4% on Turnover	14.90%, Motor Spirit Cess-4% on Turnover	ATF duty paid:-5%
Haryana	12.50%, Additional Tax on VAT 5%	" PNG for use in domestic sector 6%, Additional Tax on VAT 5% otherwise 12.50%, Additional Tax on VAT 5%"	18.20% or Fixed rate of Rs. 14.50 per litre, whichever is greater + 5% surcharge on tax	16% or Fixed rate of Rs. 11.86 per litre, whichever is greater + 5% surcharge on tax	For Passenger Flights = 1%, For Flights engaged in MRO and adventure activities = 1% For others = 20%, Additional Tax on VAT 5%
Himachal Pradesh	13.75%	4.00%	17.5% or Rs 13.5 per liter which ever is greater	9.96% or Rs 7.40 per liter which ever is greater	17.5 % or Rs 13.5 per liter which ever is greater for defence and 2% for scheduled Airlines & non scheduled airlines
J & K	14.50%	21.00%	MST 24.00%, Rebate Rs 4.5 per liter, Motor Spirit CESS RS 2/- PER LTR. Rs 50 per kl on MS leaving from jammu depot only & RS 50 per KL on MS Leaving from Srinagar Depot only	MST 16.00%, Rebate of Rs 6.5 per liter, Motor Spirit CESS RS 1/- PER LTR.Rs 50 per kl on HSD leaving from jammu depot only & RS 50 per KL on HSD Leaving from Srinagar Depot only	MST 1%

Jharkhand	5.00%	14.00%	22% on the sale price or Rs. 17.00 per litre , which ever is higher + Road Development Cess of Rs 1.00 per Ltr.	22% on the sale price or Rs. 12.50 per litre , which ever is higher + Road Development Cess of Rs 1.00 per Ltr.	4.00%
Karnataka	0.00%	14.5%, PNG IS 5.5%	25.92%	14.34%, 4% for captive power, 1% for foreign going vessel, Exempt up to 1,50,000 KL per year towards Supply to Fishermen	18.00%
Kerala	5.00%	5.00%	30.08%, Additional Sales Tax Rs 1/- per litre, SSC 1% on total tax Social Security Cess Rs. 2/ ltr	22.76% , Additional Sales Tax Rs 1/- per litre, SSC 1% on total tax Social Security Cess Rs. 2/ ltr	5%, , cess 1% on tax Tiruvananthpuram AFS: Sales Tax 1% and Cess @ 1% on Sales Tax (w.e.f 01.04.2020 for 10 years). ATF to domestic airlines Ex-Nedumbassery AFS and Calicut AFS: Sales Tax 1% and Cess @ 1% effective from 14.08.2020 for 10 years Ex-Kannur AFS is with Sales tax 1% + 1% cess (w.e.f 03.11.2018 for 10 years)
Ladakh	14.50%	21.00%	MST 15.00%, Rebate Rs 2.5 per liter, Motor Spirit CESS RS 5/- PER LTR.	MST 6.00%, Rebate of Rs 0.5 per liter ,Motor Spirit CESS RS 1/- PER LTR.	"MST 1 % FOR CIVIL FLIGHTS 26.25 % FOR DEFENCE AND OTHERS"
Lakshadweep	10.00%	10.00%	10.00%	10.00%	10.00%
Madhya Pradesh	5.00%	14.00%	29% + Re. 2.50 per ltr Additional Tax + Cess 1% over Turnover inc VAT & Addl tax	19% +Rs. 1.50 per ltr Additional Tax + Cess 1% over Turnover inc VAT & Addl tax	4.00%
Maharashtra	5.00%	3.00%	Within Municipal Limits of Thane, Mumbai, Navi Mumbai 26.00%+Rs. 5.12/ltr, Others 25%+Rs. 5.12/Ltr	"Within Municipal Limits of Thane, Mumbai, Navi Mumbai 24.00%, Others 21%"	ATF - duty paid Mumbai Pune, Raigad:-18.00%, ATF - duty paid, except Mumbai Pune, Raigad 5.00%
Manipur	5.00%	13.50%	25.00%	13.50%	1.00%
Meghalaya	4.00%	14.50%	13.5% or RS 12.50/ ltr whichever is higher + Rs 0.1/Ltr SURCHARGE on tax payable at ad valorem rate only	5% or RS 5.50/ ltr whichever is higher + Rs 0.1/ Ltr SURCHARGE on tax payable at ad valorem rate only	EXEMPT
Mizoram	5.00%	13.50%	16.36%	5.23%	1.00%
Nagaland	5.00%, surcharge on tax 5% (16.07.15)	5.00%, surcharge on tax 5% (16.07.15)	25% or Rs. 16..04 per litre whichever is higher Surcharge on tax 5% . Road Maintenance Cess Rs 2 /Ltr. Variable Rebate max to Rs. 5.5 per litre	16.5% or Rs. 10.51 per litre whichever is higher Surcharge on tax 5% . Road Maintenance Cess Rs 2 /Ltr. Variable Rebate max to Rs. 5.1 per litre	1%, Surcharge on tax 5%
Odisha	5.00%	"15% 5% when used for Industrial Purpose, piped or Domestic use"	28.00%	24.00%	5.00%

Pondicherry	14.50%	14.50%	Puducherry & Karaikal- 14.55% Mahe- 13.32% Yanam- 15.26%	Puducherry & Karaikal- 8.65% Mahe- 6.91% Yanam- 8.91%	14.50%
Punjab	13%, Surcharge on Tax 10%	3%, Surcharge on Tax 10%	14.75% PLUS SURCHARGE ON TAX 10% OR Rs. 13.40 PER LITRE WHICHEVER IS GREATER ,INFRASTRUCTURE DEVELOPMENT CESS Rs. 2.05 PER LTR , SPECIAL INFRASTRUCTURE DEVELOPMENT FEE 25 PAISE PER LITER, 10 PAISE PER LTR ADDITIONAL CESS ON SALE OF URBAN AREA	10.97 % PLUS SURCHARGE ON TAX 10 % OR Rs. 9.14 PER LITRE WHICHEVER IS GREATER, INFRASTRUCTURE DEVELOPMENT CESS Rs. 1.05 PER LTR , SPECIAL INFRASTRUCTURE DEVELOPMENT FEE 25 PAISE PER LITER, 10 PAISE PER LTR ADDITIONAL CESS ON SALE OF URBAN AREA	A) 4.00% + 10 % SURCHARGE ON TAX -When sold at Airports in Punjab to Scheduled & Non Scheduled Airlines carrying passengers, B)For others residual Rate is @13% + SURCHARGE ON TAX:-10.00%,
Rajasthan	5.00%	"10% w.e.f 10.07.2019"	31.04%, Road Develompment Cess Rs.1500/-per KL	19.30%, Road Development Cess Rs.1750/-per KL	A) 26% , B) 2 % when sale of Aviation Turbine Fuel (ATF) by a registered dealer to any airline which operates commercial flights in and/or from the State of Rajasthan
Sikkim	4.50%	4.50%	25% to others & 20% for retailers in sikkim, Infrastructure Development Cess Rs.3000 per Kl	15% to others & 10% for retailers in sikkim , Infrastructure Development Cess Rs.2500 per Kl	1.00%
Tamil Nadu	5.00%	5.00%	13% +Rs.11.52 per litre	11% + Rs.9.62 per litre	29.00%
Telangana	5.00%	14.50%	35.20%	27.00%	1.00%
Tripura	5.00%	4% & 19.5% Cess on Turnover (Taxable Value+VAT). Cess is w.e.f 13.05.2020	17.50% & 3% Road Development Cess on Turnover(Taxable Value +VAT) .	10.00% & 3% Road Development Cess on Turnover(Taxable Value+VAT)	1.00%
UT of Dadra Nagar Haveli and Daman & Diu	20.00%	20.00%	12.75%	13.50%	3.00%
Uttar Pradesh	4.00%	"When sold to industrial unit for use in process of chemical fertilizer- 14.5% and for other cases- 10%	19.36% or Rs.14.85 per litre whichever is greater.	"17.08% or Rs.10.41 per litre whichever is greater	1.00%
Uttarakhand	5.00%	20%	"16.97% or Rs 13.14 per liter whichever is greater	17.15% or Rs 10.41 per liter whichever is greater	2.00%
West Bengal	5.00%	5.00%	"25% or Rs. 13.12/Ltr whichever is higher, Infrastructure Development Cess Rs.1000 per Kl, Additional Tax on tax 20%, Rebate Available Rs 1000/Kl"	17% or Rs. 7.70/Litre whichever is higher, Infrastructure Development Cess Rs.1000 per Kl,Additional Tax on tax 20%, Rebate Available Rs 1000/KL	25.00% + 20% Add. Tax on tax. For Bagdogra AFS- nil (No tax). 0.84%+20% Add. Tax on Tax for Flights under RCS

Source: IOCL

IV.15: GST Rates applicable on Select Petroleum Products (as on 01.04.2024)

Product	For intra-state supply		For inter-state supply
	Central Tax	State / UT tax	Integrated Tax
(1)	(2)	(3)	(4)
Naphtha	9.00%	9.00%	18.00%
Superior Kerosene Oil - PDS	2.50%	2.50%	5.00%
Superior Kerosene Oil - Others	9.00%	9.00%	18.00%
LPG - Domestic	2.50%	2.50%	5.00%
LPG - Non-Domestic	9.00%	9.00%	18.00%
Fuel Oil	9.00%	9.00%	18.00%
IFO 180 CST & IFO 380 CST 1	2.50%	2.50%	5.00%
Low Sulphur Heavy Stock	9.00%	9.00%	18.00%
Light Diesel Oil	9.00%	9.00%	18.00%
Lubes/Greases	9.00%	9.00%	18.00%
Mineral Turpentine Oil	9.00%	9.00%	18.00%
Sulphur2	2.50%	2.50%	5.00%
Asphalt / Bitumen	9.00%	9.00%	18.00%

IFO: Intermediate Fuel Oil (For use in Bunker fuel)

Note: 1. Bunker fuel for use in ships or vessels- (i) IFO 180 CST, (ii) IFO 380 CST, (iii) Marine Fuel 0.5% (Fo).

2. GST Rate for Sulphur is 5%, Relevant entry abtract is as under-"Sulphur of all kinds, other than sublimed sulphur, precipitated sulphur and colloidal sulphur"

Source: Indian Oil Corporation Ltd.

IV.16: Contribution of Petroleum Sector to exchequer

(Value in ₹ Crore)

Particulars	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Contribution to Central Exchequer						
1. Cess on Crude Oil	17,741	14,789	10,676	19,214	21,445	19,580
2. Royalty on Crude Oil / Gas	6,062	5,602	3,590	5,639	9,822	9,286
3. Customs Duty	16,035	22,927	13,514	11,423	14,985	13,134
4. NCCD on Crude Oil	1,180	1,130	1,016	1,121	1,192	1,191
5. Excise Duty	2,14,369	2,23,057	3,72,970	3,63,305	2,87,575	2,73,684
6. Service tax	340	17	0	0	0	0
7. IGST	16,479	13,099	11,594	19,726	22,236	20,930
8. CGST	7,437	6,831	6,158	10,843	13,012	12,230
9. Others	204	88	365	338	59	52
A. Tax/ Duties on Crude oil & Petroleum products (1 to 9)	**2,79,847**	**2,87,540**	**4,19,884**	**4,31,609**	**3,70,326**	**3,50,086**
10. Corporate/ Income Tax	38,561	23,134	21,909	29,219	33,292	57,493
11. Dividend income to Central Govt.	15,525	12,270	10,393	22,612	15,673	19,310
12. Dividend distribution tax	6,415	5,462	0	0	0	0
13. Profit Petroleum on exploration of Oil/ Gas	7,694	5,909	2,883	8,862	8,776	5,505
B. Dividend to Government/ Income tax etc. (10 to 13)	**68,194**	**46,775**	**35,185**	**60,694**	**57,741**	**82,308**
C. Total Contribution to Central Exchequer (A+B)	**3,48,041**	**3,34,315**	**4,55,069**	**4,92,303**	**4,28,067**	**4,32,394**
2. Contribution to State Exchequer						
14. Royalty on Crude Oil / Gas	13,371	11,882	7,179	13,526	17,914	12,530
15. Sales Tax/ VAT on POL Products	2,01,265	2,00,493	2,02,937	2,56,248	2,88,086	2,92,716
16. SGST/UTGST	7,961	7,345	6,121	11,017	13,188	12,289
17. Octroi, Duties Incl. Electricity Duty	685	716	706	827	830	687
18. Entry Tax / Others	4,114	405	329	354	293	301
D. Tax/ Duties on Crude & Petroleum products (14 to 18)	**2,27,396**	**2,20,841**	**2,17,271**	**2,81,972**	**3,20,311**	**3,18,523**
19. Dividend Income to State Govt.	195	215	379	151	340	239
E. Dividend to Government/ Direct tax etc.	**195**	**215**	**379**	**151**	**340**	**239**
F. Total Contribution to State Exchequer (D+E)	**2,27,591**	**2,21,056**	**2,17,650**	**2,82,122**	**3,20,651**	**3,18,762**
Total Contribution of Petroleum Sector to Exchequer (C+F)	**5,75,632**	**5,55,370**	**6,72,719**	**7,74,425**	**7,48,718**	**7,51,156**

Note: As the amounts have been rounded off to the nearest crore, hence some amounts are zero. P:Provisional

Source: PPAC (Based on 15 major oil & gas companies)

IV.17: Sales Tax / VAT Payments by Oil & Gas Companies

(Value in ₹ Crore)

State & UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share during 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar islands	92	94	74	80	63	55	0.0
Andhra Pradesh	10,784	10,168	11,014	14,724	16,429	16,688	5.7
Arunachal Pradesh	49	26	104	136	158	177	0.1
Assam	3,879	3,641	3,747	3,901	5,073	5,670	1.9
Bihar	6,584	6,238	5,854	6,867	9,848	9,360	3.2
Chandigarh	62	60	60	87	99	97	0.0
Chhattisgarh	3,986	3,877	4,107	5,178	6,164	6,383	2.2
Dadra & Nagar Haveli and Daman & Diu	2	2	1	2	1	1	0.0
Delhi	4,379	3,833	2,653	3,659	4,398	4,002	1.4
Goa	694	754	682	994	1,278	1,183	0.4
Gujarat	16,229	15,337	15,141	20,697	24,631	23,605	8.1
Haryana	8,286	7,648	7,923	10,067	10,030	9,922	3.4
Himachal Pradesh	364	440	882	1,313	1,222	1,530	0.5
Jammu & Kashmir	1,449	1,459	1,444	1,859	1,543	1,621	0.6
Jharkhand	2,796	3,296	3,619	4,392	5,533	5,876	2.0
Karnataka	14,417	15,381	15,476	18,310	18,459	20,030	6.8
Kerala	7,995	8,074	6,924	9,265	11,827	12,240	4.2
Ladakh	-	14	49	81	68	77	0.0
Madhya Pradesh	9,485	10,720	11,908	14,157	15,573	15,038	5.1
Maharashtra	**27,191**	**26,791**	**25,430**	**34,002**	**37,619**	**36,359**	**12.4**
Manipur	181	192	265	319	331	264	0.1
Meghalaya	-	-	-	-	-	-	0.0
Mizoram	88	91	84	120	87	97	0.0
Nagaland	97	116	148	180	168	173	0.1
Odisha	5,660	5,495	6,224	7,656	9,328	9,761	3.3
Puducherry	8	5	10	11	9	1	0.0
Punjab	6,576	5,548	6,291	7,890	6,900	7,834	2.7
Rajasthan	12,714	13,319	15,119	17,401	18,574	19,236	6.6
Sikkim	134	129	111	155	179	186	0.1
Tamil nadu	18,143	18,175	17,063	20,586	24,309	24,471	8.4
Telangana	10,037	10,045	8,691	13,171	14,929	15,160	5.2
Tripura	277	384	445	474	624	578	0.2
Uttar Pradesh	19,168	20,112	21,956	26,333	28,170	30,411	10.4
Uttarakhand	1,595	1,495	1,524	1,847	2,073	2,390	0.8
West bengal	7,866	7,534	7,916	10,335	12,386	12,220	4.2
TOTAL	**2,01,265**	**2,00,493**	**2,02,937**	**2,56,248**	**2,88,086**	**2,92,716**	**100**

Note: As the amounts have been rounded off to the nearest crore, hence some amounts are zero. P:Provisional

Source: PPAC (Based on 15 major oil & gas companies)

IV.18: GST Payment by Oil & Gas Companies

(Value in ₹ Crore)

State & UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share during 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar islands	0	0	0	1	1	0	0.0
Andhra Pradesh	257	156	112	204	290	310	2.5
Arunachal Pradesh	6	0	0	0	1	1	0.0
Assam	559	475	332	414	445	364	3.0
Bihar	159	145	122	147	210	203	1.7
Chandigarh	1	1	1	1	2	1	0.0
Chhattisgarh	18	9	14	26	30	39	0.3
Dadra & Nagar Haveli and Daman & Diu	12	20	20	15	41	18	0.1
Delhi	52	51	37	54	56	72	0.6
Goa	3	9	11	15	10	18	0.1
Gujarat	**2,060**	**1,801**	**1,566**	**3,180**	**3,922**	**3,343**	**27.2**
Haryana	659	685	529	1,064	1,119	1,033	8.4
Himachal Pradesh	3	4	6	8	18	8	0.1
Jammu & Kashmir	20	17	40	35	24	27	0.2
Jharkhand	13	16	12	10	29	38	0.3
Karnataka	356	269	260	461	577	437	3.6
Kerala	146	171	136	255	333	315	2.6
Ladakh	-	1	1	1	6	1	0.0
Lakshadweep	0	0	0	1	0	0	0.0
Madhya Pradesh	87	98	68	117	174	175	1.4
Maharashtra	1,272	1,126	932	1,822	2,102	1,935	15.7
Manipur	1	1	2	2	2	2	0.0
Meghalaya	1	0	0	0	0	0	0.0
Mizoram	1	1	0	0	1	1	0.0
Nagaland	1	1	0	1	1	1	0.0
Odisha	93	192	195	421	579	587	4.8
Other territory (Offshore areas of India beyond 12 Nautical Miles)	11	11	7	9	15	48	0.4
Puducherry	1	1	1	1	4	4	0.0
Punjab	116	128	43	346	258	298	2.4
Rajasthan	205	176	145	196	260	424	3.4
Sikkim	2	0	0	0	0	0	0.0
Tamil nadu	642	562	439	640	861	769	6.3
Telangana	19	21	22	45	33	59	0.5
Tripura	20	17	38	17	23	24	0.2
Uttar Pradesh	616	619	603	827	859	958	7.8
Uttarakhand	6	7	8	7	8	7	0.1
West bengal	545	553	418	674	897	768	6.2
TOTAL	**7,961**	**7,345**	**6,121**	**11,017**	**13,188**	**12,289**	**100**

Note: As the amounts have been rounded off to the nearest crore, hence some amounts are zero. P:Provisional

Source: PPAC (Based on 15 major oil & gas companies)

IV.19: Sales Tax/VAT Payments on Crude Oil & Natural Gas by CPSEs

(Value in ₹ Crore)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24(P)	% Share during 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sales Tax /VAT on Crude Oil							
Andhra Pradesh	48	16	10	17	23	29	0.7
Assam	720	620	419	767	1,112	1,034	25.5
Gujarat	748	714	476	831	1,147	1,063	26.2
Maharashtra	**1,582**	**1,356**	**890**	**1,391**	**1,983**	**1,797**	**44.3**
Rajasthan	0	0	0	0	1	1	0.0
Tamil Nadu	75	66	47	77	79	133	3.3
West Bengal	-	-	0	0	0	0	0.0
TOTAL	**3,172**	**2,772**	**1,841**	**3,083**	**4,345**	**4,057**	**100.0**
Sales Tax /VAT on Natural Gas							
Andhra Pradesh	348	267	175	226	622	591	3.7
Assam	238	236	119	127	437	454	2.6
Bihar	-	1	5	25	313	584	1.9
Chandigarh	0	0	1	3	6	8	0.0
Dadra Nagar Haveli & Daman & Diu	0	1	1	2	3	2	0.0
Delhi	12	15	13	20	55	57	0.3
Goa	0	0	0	1	179	174	1.1
Gujarat	**2,544**	**2,636**	**2,157**	**3,433**	**6,670**	**5,216**	**40.0**
Haryana	147	149	89	201	386	348	2.3
Himachal Pradesh	1	1	1	2	3	2	0.0
Jharkhand	0	1	1	10	161	386	1.0
Karnataka	-	-	-	0	2	6	0.0
Kerala	8	23	37	19	22	15	0.1
Madhya Pradesh	162	162	119	318	636	711	3.8
Maharashtra	580	659	412	851	869	652	5.2
Odisha	0	0	2	3	7	135	0.0
Puducherry	-	-	-	-	0	0	0.0
Punjab	6	33	58	113	200	194	1.2
Rajasthan	233	436	425	671	1,059	1,129	6.3
Tamil Nadu	52	120	108	216	391	501	2.3
Telangana	5	9	4	12	24	45	0.1
Tripura	79	150	205	210	36	33	0.2
Uttar Pradesh	1,846	2,171	1,572	2,121	4,304	4,034	25.8
Uttarakhand	10	14	8	18	28	30	0.2
West Bengal	0	0	0	128	278	336	1.7
TOTAL	**6,272**	**7,084**	**5,515**	**8,732**	**16,691**	**15,644**	**100.0**

Note: As the amounts have been rounded off to the nearest crore, hence some amounts are zero. P:Provisional

Sources: CPSEs (ONGC, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, MRPL, NRL)

IV.20: Sales Tax/VAT Payments on Petrol by CPSEs

(Value in ₹ Crore)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24(P)	% Share during 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	9	9	7	6	2	2	0.0
Andhra Pradesh	3,098	3,147	3,725	5,172	5,601	5,672	5.9
Arunachal Pradesh	15	8	36	47	67	79	0.1
Assam	962	1,024	1,224	1,201	1,317	1,505	1.6
Bihar	2,233	2,281	1,839	2,256	3,126	3,432	3.6
Chandigarh	21	20	19	27	25	26	0.0
Chhattisgarh	1,157	1,267	1,378	1,734	1,454	2,209	2.3
Delhi	2,004	1,877	1,645	1,981	1,947	1,900	2.0
Goa	231	294	293	422	458	476	0.5
Gujarat	2,656	2,548	2,419	3,271	3,219	3,213	3.3
Haryana	2,051	2,092	2,147	2,765	2,660	2,757	2.9
Himachal Pradesh	133	172	372	560	571	543	0.6
Jammu & Kashmir	626	685	556	771	755	866	0.9
Jharkhand	846	935	1,087	1,288	1,561	1,788	1.9
Karnataka	4,880	5,011	5,349	6,506	6,887	7,363	7.6
Kerala	3,523	3,717	3,354	4,520	5,749	5,622	5.8
Ladakh	0	6	17	28	27	39	0.0
Lakshdeep	-	-	-	-	-	2	0.0
Madhya Pradesh	3,327	3,753	4,345	5,391	6,350	6,083	6.3
Maharashtra	**10,074**	**9,644**	**9,640**	**9,699**	**11,594**	**11,702**	**12.2**
Manipur	89	92	135	162	186	164	0.2
Meghalaya	0	0	0	0	0	0	0.0
Mizoram	37	39	38	49	50	58	0.1
Nagaland	50	58	50	68	73	80	0.1
Odisha	1,510	1,579	1,993	2,676	3,063	3,208	3.3
Puducherry	5	3	7	7	5	1	0.0
Punjab	2,403	1,861	2,255	2,992	2,427	2,731	2.8
Rajasthan	3,295	3,726	4,628	5,654	5,761	6,431	6.7
Sikkim	44	48	35	47	59	65	0.1
Tamil Nadu	6,537	6,669	6,992	8,018	9,172	7,819	8.1
Telangana	3,205	3,212	3,119	4,621	5,796	6,172	6.4
Tripura	92	114	104	112	110	116	0.1
Uttar Pradesh	6,335	6,830	7,652	8,699	8,220	9,172	9.5
Uttarakhand	687	667	713	770	757	1,005	1.0
West Bengal	2,268	2,335	2,273	2,704	3,303	3,961	4.1
TOTAL	**64,404**	**65,722**	**69,445**	**84,223**	**92,353**	**96,265**	**100.0**

Note: As the amounts have been rounded off to the nearest crore, hence some amounts are zero. P:Provisional

Sources: CPSEs (ONGC, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, MRPL, NRL)

IV.21: Sales Tax/VAT Payments on Diesel by CPSEs

(Value in ₹ Crore)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24(P)	% Share during 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	66	70	62	71	58	51	0.0
Andhra Pradesh	6,507	5,806	5,924	7,405	7,901	7,482	5.4
Arunachal Pradesh	31	17	66	87	90	97	0.1
Assam	1,422	1,425	1,690	1,422	1,663	2,104	1.5
Bihar	3,821	3,720	2,730	2,641	4,073	4,105	3.0
Chandigarh	12	11	14	15	10	10	0.0
Chhattisgarh	2,694	2,484	2,626	3,180	3,958	3,949	2.9
Delhi	1,254	980	663	916	1,024	884	0.6
Goa	375	383	359	488	490	419	0.3
Gujarat	5,630	5,419	5,216	6,997	8,381	7,153	5.2
Haryana	5,639	4,975	5,216	6,595	6,880	6,437	4.7
Himachal Pradesh	205	248	492	725	595	903	0.7
Jammu & Kashmir	726	698	660	847	626	742	0.5
Jharkhand	1,705	2,118	2,136	2,541	3,229	3,155	2.3
Karnataka	8,271	8,763	8,650	9,964	10,032	10,492	7.6
Kerala	4,006	3,944	3,088	4,003	5,476	4,521	3.3
Ladakh	0	5	18	33	22	29	0.0
Lakshdeep	-	-	-	-	3	17	0.0
Madhya Pradesh	4,782	4,902	5,369	6,027	7,893	6,822	4.9
Maharashtra	**13,013**	**12,672**	**12,928**	**15,284**	**17,691**	**17,527**	**13**
Manipur	78	81	126	151	141	99	0.1
Meghalaya	0	0	0	0	0	0	0.0
Mizoram	48	50	46	70	36	39	0.0
Nagaland	47	57	64	88	69	56	0.0
Odisha	3,976	3,839	4,178	4,894	6,187	6,281	4.5
Puducherry	3	2	3	3	3	0	0.0
Punjab	3,374	2,901	3,958	4,788	4,062	4,853	3.5
Rajasthan	6,820	7,044	7,378	8,298	8,956	8,378	6.1
Sikkim	84	81	62	79	83	83	0.1
Tamil Nadu	10,104	9,677	8,453	10,539	13,141	10,133	7.3
Telangana	6,433	5,897	4,805	7,613	8,555	8,209	5.9
Tripura	93	110	99	104	80	83	0.1
Uttar Pradesh	9,204	9,250	10,742	13,444	14,880	15,887	11.5
Uttarakhand	811	706	730	972	1,232	1,217	0.9
West Bengal	5,005	4,467	3,874	4,591	5,612	6,184	4.5
TOTAL	**1,06,241**	**1,02,804**	**1,02,420**	**1,24,874**	**1,43,132**	**1,38,401**	**100.00**

Note: As the amounts have been rounded off to the nearest crore, hence some amounts are zero. P:Provisional

Sources: CPSEs (ONGC, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, MRPL, NRL)

IV.22: Sales Tax/VAT Payments on ATF by CPSEs

(Value in ₹ Crore)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24(P)	% Share during 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	16	14	4	4	3	2	0.1
Andhra Pradesh	9	7	3	5	11	8	0.2
Arunachal Pradesh	2	1	2	2	1	0	0.0
Assam	225	202	99	180	308	254	5.9
Bihar	49	57	22	33	75	62	1.4
Chandigarh	28	29	28	45	64	59	1.4
Chhattisgarh	9	9	3	5	9	6	0.1
Dadra Nagar Haveli & Daman & Diu	2	1	1	2	0	0	0.0
Delhi	**1,199**	**1,031**	**322**	**759**	**1,459**	**1,205**	**28.0**
Goa	81	76	19	62	120	92	2.1
Gujarat	215	169	73	135	80	68	1.6
Haryana	52	33	23	39	68	58	1.3
Himachal Pradesh	12	10	9	7	18	6	0.1
Jammu & Kashmir	97	75	32	34	10	8	0.2
Jharkhand	10	12	10	33	32	16	0.4
Karnataka	384	536	185	340	523	452	10.5
Kerala	197	47	4	7	22	10	0.2
Ladakh	0	3	6	7	7	9	0.2
Lakshdeep	-	-	-	-	0	0	0.0
Madhya Pradesh	32	28	11	24	48	23	0.5
Maharashtra	849	658	181	423	971	758	17.6
Manipur	13	20	4	6	4	1	0.0
Meghalaya	0	0	0	0	0	0	0.0
Mizoram	3	2	1	1	1	0	0.0
Nagaland	1	0	0	0	1	10	0.2
Odisha	28	23	9	19	43	39	0.9
Puducherry	0	0	0	0	0	0	0.0
Punjab	55	55	30	62	112	89	2.1
Rajasthan	143	98	65	137	209	118	2.8
Sikkim	0	0	0	0	0	0	0.0
Tamil Nadu	341	402	117	243	539	430	10.0
Telangana	28	16	7	14	29	27	0.6
Tripura	12	10	2	4	2	2	0.0
Uttar Pradesh	211	192	101	168	23	23	0.5
Uttarakhand	17	18	6	8	6	35	0.8
West Bengal	249	315	98	237	486	429	10.0
TOTAL	**4,568**	**4,149**	**1,478**	**3,044**	**5,283**	**4,299**	**100**

Note: As the amounts have been rounded off to the nearest crore, hence some amounts are zero. P:Provisional

Sources: CPSEs (ONGC, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, MRPL, NRL)

CHAPTER-V



Consumption

Chapter Highlights



Total consumption of natural gas in 2023-24 stands at **67.51 Billion Cubic Metre (BCM)**, which is 12.6% higher than the consumption during 2022-23 (59.97 BCM). The Sectoral sale (energy and non-energy purpose) of Gas was 68.76 BCM during 2023-24, which was 17.1% higher than the 2022-23 (58.70 BCM). Consumption of Natural gas for energy purpose as fuel stands at 62.3% and 37.7% for non-energy purpose as feedstock.

Total consumption of petroleum products in the country during FY 2023-24 was **234.26 MMT** registering positive growth rate of 5% in comparison with FY 2022-23 (223.02 MMT). During the FY 2023-24, positive growth rate have been observed in all the products of petroleum products.





During FY 2023-24 across various States/UTs, highest total petroleum products consumption share contributed by Gujarat with 10.5% (24.65 MMT) followed by Maharashtra 9.4% (22.03 MMT) and Uttar Pradesh 8.7% (20.58 MMT).

During FY 2023-24, the Market share of Public and Private sector consumption of Petroleum Product stood at **78.6%** (184.22 MMT) and 21.4% (50.04 MMT) respectively. Similarly, Market share of Oil companies (OMCs) in India during FY 2023-24 was IOCL (37.3%) followed by BPCL (21.1%) and HPCL (18.5%).





Highest consumption of LPG in FY 2023-24 was in Domestic Distribution sector **(88.3%)**. Across various State/UTs, highest LPG consumption share contributed by Uttar Pradesh with 13.8% (3.78 MMT) followed by Maharashtra 11.5% (3.43 MMT) and Tamil Nadu 8% (2.38 MMT).

Highest consumption of Naphtha in FY 2023-24 was in Petrochemical sector **75.5% (10.42 MMT)**. Across various States/UTs, highest Naphtha consumption share contributed by Gujarat with 48.5% (6.69 MMT) followed by Haryana 24.1% (3.33 MMT) and West Bengal 5.2% (0.72 MMT).





During FY 2023-24, highest consumption of Kerosene was in Domestic PDS sector **(62.3%)**. Across various States/UTs, highest kerosene consumption share contributed by West Bengal with 40.7% (0.20 MMT) followed by Tamil Nadu 11.6% (0.06 MMT) and Ladakh 9.8% (0.05 MMT).

During FY 2023-24, highest consumption of Petrol and High Speed Diesel were majorly in Resellers/Retail sector i.e. 99.7% and 88.3% respectively. Across various States/UTs, Uttar Pradesh contributed the highest share in consumption of Petrol with **11.7% (4.37 MMT)** and High Speed Diesel with **11.5% (10.31 MMT)**.





During FY 2023-24, highest consumption of ATF was in Indian Airlines Sector **(74.7%)** followed by foreign airlines (24.9%). Across various States/UTs, maximum ATF consumption was contributed by Delhi with 25.8% (2.13 MMT) followed by Maharashtra 17.8% (1.47 MMT) and Karnataka 9.7% (0.80 MMT).

During FY 2023-24, highest consumption of LDO, Furnace Oil and LSHS were in Manufacturing Industry i.e. 27.4 % (0.21 MMT), 21.7% (1.23 MMT) and 25.8% (0.22 MMT) respectively.





During FY 2022-23, highest consumption of Lubes & Greases was in Maharashtra with 11.9% (.49 MMT), Petcoke in Rajasthan with 7.5% (1.51 MMT and Bitumen in Uttar Pradesh with 9% (0.79 MMT).

Introduction

The rapid population growth, rising per capita income and emerging consumer demands are contributing to a significant surge in energy consumption in India. The industry and residential sector consume major portion of India's total final energy consumption, followed by transport and the agriculture sector. India's rapid electrification is driven by increased appliance usage in the building sector and the swift adoption of electric vehicles to reduce carbon emissions in transportation. This surge in electrification is accompanied by a significant uptick in energy demand. India has taken proactive measures to meet the increasing energy demands of its population while staying committed to achieving sustainable development goals, considering the nation's growing energy needs. Simultaneously, it is transitioning towards clean and renewable energy and focussing on enhancing energy efficiency.



India is the world's third-largest energy consumer, and with its growing economy, energy demand is expected to rise further. As per IEA's publication 'World Energy Investment 2024' India with a GDP growth rate of 7.8%, India was the world's fastest growing major economy in 2023. Its economy is now the world's fifth largest, and is on track to become the third largest by 2030 behind the United States and China. However, per capita income is less than half of the world average, and India's development priorities remain focused on poverty alleviation, job growth and infrastructure creation. As a result of its GDP growth potential, urbanisation, growth in built spaces, and the increased demand for electricity as well as materials such as cement and steel, energy demand growth in India is on track to outpace all other regions of the world by 2050.

As per IEA's publication, 'World Energy Outlook-2024 India was the fastest growing major economy in 2023, with output increasing by 7.8%. It is on track to become the third-largest economy in the world by 2028. India overtook China in 2023 to become the most populous country in the world, even as its fertility rate dropped below replacement level.



The consumption volume of petroleum products in India was approximately 234.26 million metric tons in FY 2023-24. India's energy mix is dominated by fossil fuels, with coal, oil, and natural gas accounting for the majority of its energy consumption. Coal accounts for about 56.84%, oil and gas combined accounts for ~32.88% and other sources make up the remainder. The current oil and gas production is not sufficient to fulfill the country's energy demand and leads to the import of crude oil and natural gas. The present India's primary energy mix is as below:

	Oil	Natural Gas	Coal	Nuclear energy	Hydro electric	Renewables	Total
Total Energy (in Exajoules)	10.57	2.25	21.98	0.43	1.39	2.38	39.02
%	27.1	5.8	56.3	1.1	3.6	6.1	100

Source: Energy Institute Statistical Review of World Energy 2023

This heavy reliance on fossil fuels underscores the importance of the energy sector in India's economic growth. The import dependency on crude oil and natural gas based on consumption of petroleum products in 2023-24 was about ~87.8 % and 47.1 % respectively. Increasing oil and gas production and exploration is one of the approaches to reduce India's Energy dependence. The Government of India is driving its efforts in evolving a comprehensive energy security mechanism and to fully exploit its existing hydrocarbon resources through accelerated E&P (Exploration & Production) activities.

Government has adopted a multi-pronged strategy to maintain the stability in supply of petroleum products which, *inter alia*, include demand substitution by promoting usage of natural gas as fuel/feedstock across the country towards increasing the share of natural gas in economy and moving towards gas based economy, promotion of renewable and alternate fuels like ethanol, compressed bio gas and biodiesel, creating electric vehicle charging infrastructure, refinery process improvements, promoting energy efficiency and conservation, efforts for increasing production of oil and natural gas through various policies initiatives, etc. For promoting the use of Compressed Bio Gas (CBG) as automotive fuel, Sustainable Alternative Towards Affordable Transportation (SATAT) initiative has also been launched.



Hon'ble Prime Minister Narendra Modi's vision is to provide clean and affordable energy to all citizens, with a focus on accessibility and affordability, ensuring energy security and transitioning to a low-carbon economy are critical for India's sustainable development. While the challenges are significant, the opportunities for economic growth, environmental sustainability, and social well-being are immense. By adopting a comprehensive and inclusive approach, India can achieve its energy security goals and contribute to global efforts to combat climate change.



To ensure Energy Security, M/o Petroleum and Natural Gas has been investing heavily in expanding the oil and gas infrastructure in the country, including augmenting refining capacity, storage and pipelines to ensure an uninterrupted supply of petroleum products. The refining capacity shall increase from current 256.8 to 309.5 MMT by 2028. This will help country to meet its demand of petroleum fuels, which is expected to remain robust in near future.

Petroleum products have experienced a steady growth over time. From a figure of 157.06 MMT during 2012-13 to 214.13 MMT during 2019-20 i.e. a growth of 36% over a span of 7 years. However, during FY:2020-21 the same has decreased by 9.26% and stood at 194.30 MMT primarily because of COVID-19 pandemic. During FY:2023-24 the same has registered a positive growth rate of 5% over last year and stood at 234.26 MMT. Among all the products Diesel Oil (HSDO+LDO) accounted for 38.6% of total consumption, followed by Petrol (15.9%), LPG (12.7%) and Pet Coke (8.7%).

Among all the Petroleum Products the HSDO, which has the highest share of consumption (38.3%) during FY: 2023-24 (P), experienced a positive growth of 4.3% over last year. Petrol and Pet-Coke are also having a growth of 6.4% and 10.8% respectively over last year. HSD has also registered a positive growth during FY:2023-24(P); with a growth of 4.3% over last year it has stood at a figure of 89.63 MMT in 2023-24(P), as compared to 85.90 MMT during 2022-23.



The impact of energy policies of recent time is evident on the consumption of kerosene as a fuel in the country. The consumption of Kerosene has seen a steady decreasing trend. ATF consumption dipped in 2020-21 due to the COVID-19 pandemic but has since rebounded, surpassing pre-pandemic levels, rising from 6,662 TMT in 2016-17 to 8247 TMT in 2023-24.

Total consumption of natural gas in 2023-24 stands at 67.51 Billion Cubic Metre (BCM) which is 12.6% higher than the consumption during 2022-23 (59.97 BCM). The consumption of Natural Gas has experienced a fluctuation over time. During FY: 2022-23 the consumption against the Energy Purpose has growth of 21.1% (from 35.41 BCM during 2022-23 to 41.87 BCM during 2023-24(P)); the Non-Energy Purpose however has experienced a 11.1 % positive growth (from 25.89 BCM during 2022-23 to 23.30 BCM during 2023-24(P)). The fertilizer sector consumes the largest share of natural gas (30.6%) followed by the residential (CGD) and transport sector (19.6%), power generation (13.2%), refinery (8.5%), and others (15.9%).

V.1: Consumption of Natural Gas

(Figures in MMSCM)

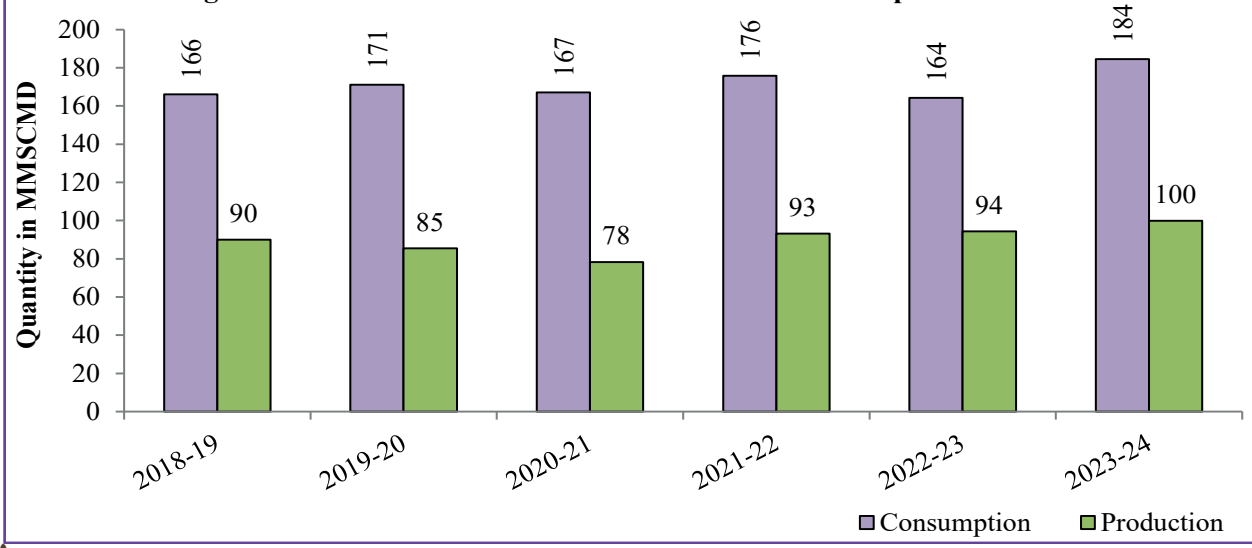
Sector	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) Energy Purpose							
Power	12005	11080	10836	10157	8153	9082	13.2
Industrial & Manufacturing	1086	701	555	829	865	1458	2.1
City or Local Natural Gas Distribution Network	9206	10883	9230	12175	12028	13491	19.6
Agriculture (Tea Plantation)	192	200	177	156	154	142	0.2
Internal Consumption for Pipeline System	541	525	439	486	1764	1924	2.8
Refinery	7047	7786	7911	5312	3909	5837	8.5
LPG Shrinkage	874	858	900	1070	976	1001	1.5
Miscellaneous	3393	4209	4569	9229	8534	10938	15.9
Total Consumption of Energy Purpose	**34343**	**36241**	**34617**	**39414**	**36383**	**43872**	**63.8**
(b) Non-Energy Purpose							
Fertilizer Industry	14987	16115	17781	18079	19400	21046	30.6
Petrochemical	3386	3569	3072	2864	1959	2667	3.9
Sponge Iron	1124	567	647	1134	960	1177	1.7
Total Consumption of Non-Energy Purpose	**19497**	**20251**	**21500**	**22077**	**22319**	**24890**	**36.2**
Total Sectoral Sales (a+b)	**53840**	**56492**	**56117**	**61491**	**58702**	**68761**	**100.0**
Total Consumption **	**60603**	**62609**	**60981**	**64159**	**59969**	**67512**	**-**
Total Consumption in MMSCMD	**166**	**171**	**167**	**176**	**164**	**184**	**-**

Note: Total may not tally due to rounding off. **: Availability Basis (Net Production+LNG Imports) 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 .
2. Sector-wise Sales/consumption of natural gas includes RLNG.
3. The reasons for the variation between the consolidated availability and the consumption can be attributed to stock changes, conversion factor (volume/energy) and the provisional data reported by the companies.
4. Data from the FY 2021-22 has been updated based on Under Reporting exercise carried out at the direction of MoPNG. ONGC , OIL and DGH sectoral consumption data added in table, includes I\C consumption data of these enities which inter-alia includes (i.e I\C) sectors like VAP shrinkage, LPG Shrinkage, Captive Power Generation, supply to power houses , supply to crematoriums & schools etc. And excludes remaining component of I\C

Source: PPAC

Figure V.1: Trend of Natural Gas Production & Consumption



V.2: Product-wise Consumption of Petroleum Products (Financial Year-wise)

(Figures in TMT)

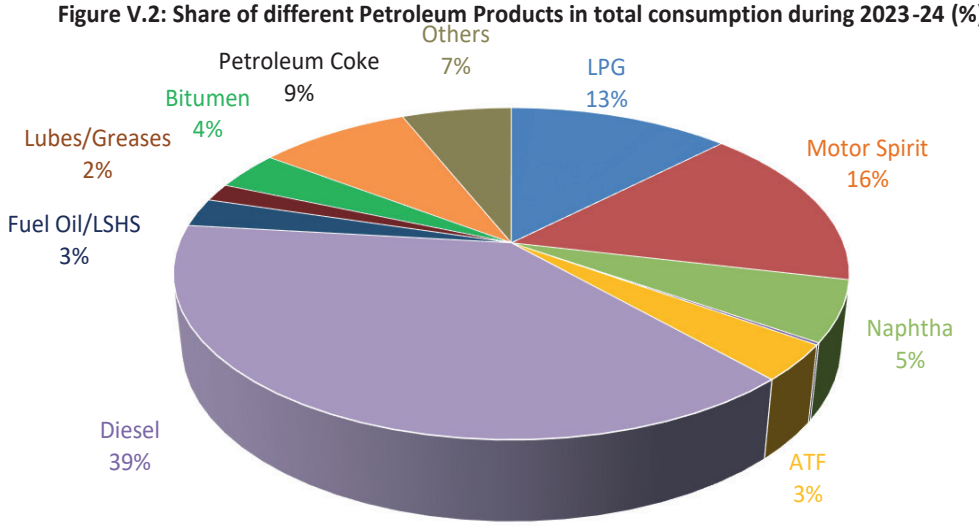
Products	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% to Total Cons. 2023-24	% Growth[2]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
LPG	24907	26330	27558	28253	28504	29664	12.7	4.1
Motor Spirit	28284	29975	27969	30849	34976	37219	15.9	6.4
Naphtha	14131	14268	14100	13246	12127	13812	5.9	13.9
SKO	3459	2397	1798	1493	490	479	0.2	-2.1
ATF	8302	7999	3698	5008	7378	8247	3.5	11.8
HSDO	83528	82602	72713	76659	85900	89626	38.3	4.3
LDO	598	628	855	1017	726	782	0.3	7.8
Furnace Oil (FO)	6195	5912	5208	5815	6185	5648	2.4	-8.7
LSHS	369	390	378	447	773	873	0.4	12.9
Fuel Oil (FO+LSHS)	6564	6302	5586	6262	6958	6520	2.8	-6.3
Lubes/Greases	3668	3833	4097	4540	3737	4087	1.7	9.4
Bitumen	6708	6720	7524	7816	8041	8807	3.8	9.5
Petroleum Coke	21346	21708	15605	14255	18343	20319	8.7	10.8
Waxes	11435	11087	12568	12066	15612	14466	6.2	-7.3
Others	286	278	223	231	230	230	0.1	-0.1
Total Consumption	**213216**	**214127**	**194295**	**201697**	**223022**	**234259**	**100**	**5.0**
Refinery fuel and losses (RBF)	21454	23613	22806	23498	26042	26649	-	-
Grand Total	**234670**	**237739**	**217101**	**225195**	**249064**	**260908**	**-**	**4.8**

Note: Total may not tally due to rounding off.

1. Consumption includes sales by oil companies, own consumption & direct private imports.
2. Growth rate in 2023-24 over 2022-23.

Source: Petroleum Planning & Analysis Cell.

Figure V.2: Share of different Petroleum Products in total consumption during 2023-24 (%)



V.3: Product-wise Consumption of Petroleum Products Across Public & Private Sector

(Figures in TMT)

Products	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% to Total Cons. 2023-24	% Growth[2]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. PUBLIC SECTOR								
LPG	24591	26126	27494	28253	28504	29650	12.7	4.0
Motor Spirit	25959	27179	25168	27905	32631	34152	14.6	4.7
Naphtha	5583	6479	6050	6426	5428	6621	2.8	22.0
SKO	3459	2397	1795	1493	490	479	0.2	-2.1
ATF	7685	7598	3525	4707	6960	7567	3.2	8.7
HSDO	75775	73825	64504	68411	81435	80700	34.4	-0.9
LDO	577	602	713	765	625	650	0.3	3.9
Furnace Oil	5278	4834	4594	5166	5492	4969	2.1	-9.5
LSHS	318	338	330	376	683	813	0.3	19.0
Lubes/Greases	1313	1317	1475	1563	1690	1806	0.8	6.9
Bitumen/Asphalt	5683	4995	5356	5093	5211	5576	2.4	7.0
Petroleum Coke	5770	5634	4415	5339	6549	6519	2.8	-0.4
Paraffin Wax	92	90	99	100	107	94	0.0	-11.9
Others	4095	4291	3858	4732	4727	4624	2.0	-2.2
Total (A)	**166178**	**165704**	**149378**	**160330**	**180531**	**184220**	**78.6**	**2.0**
B. PRIVATE SECTOR								
LPG	316	204	64	0	0	14	0.0	-
Motor Spirit	2326	2797	2801	2944	2345	3067	1.3	30.8
Naphtha	8548	7789	8051	6820	6699	7191	3.1	7.3
SKO	0	0	3	0	0	0	0.0	0.0
ATF	617	400	172	301	418	680	0.3	62.9
HSDO	7753	8777	8208	8248	4466	8926	3.8	99.9
LDO	21	25	142	252	100	132	0.1	31.6
Furnace Oil	917	1078	614	650	693	678	0.3	-2.1
LSHS	51	52	48	70	90	60	0.0	-33.4
Lubes/Greases	2355	2517	2622	2977	2047	2281	1.0	11.4
Bitumen/Asphalt	1024	1725	2168	2723	2830	3231	1.4	14.2
Petroleum Coke	15576	16074	11190	8917	11794	13799	5.9	17.0
Paraffin Wax	195	188	124	131	123	136	0.1	10.0
Others	7340	6795	8710	7334	10885	9843	4.2	-9.6
Total (B)	**47038**	**48422**	**44918**	**41366**	**42491**	**50039**	**21.4**	**17.8**
Total Consumption of Petroleum Products	**213216**	**214127**	**194295**	**201697**	**223022**	**234259**	**100.0**	**5.0**

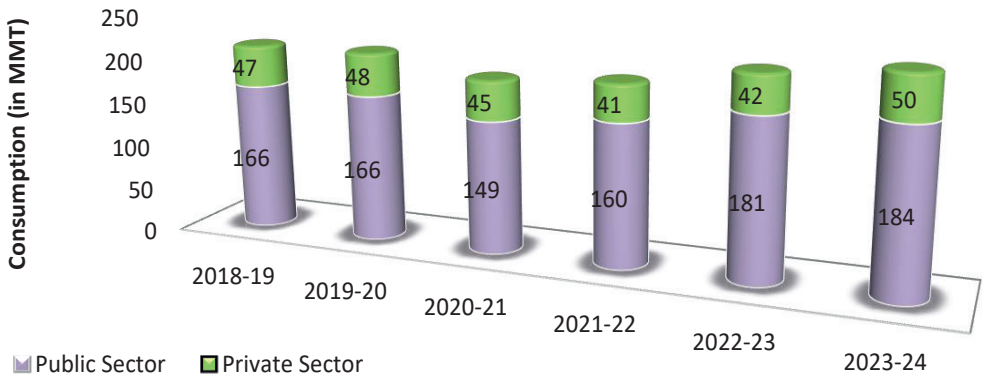
Note: Total may not tally due to rounding off. P: Provisional

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

2. Growth rate in 2023-24 over 2022-23.

Source: Petroleum Planning & Analysis Cell.

Figure V.3: Consumption of Petroleum Products Across Public & Private Sector



V.4: State-wise Consumption of Total Petroleum Products

(Figures in TMT)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	212	217	171	190	220	222	0.1
Andhra Pradesh	7820	7699	7266	7553	8036	8163	3.5
Arunachal Pradesh	248	263	276	302	346	375	0.2
Assam	2744	2823	2710	2923	3103	3197	1.4
Bihar	5242	5397	5518	5363	5572	5773	2.5
Chandigarh	435	436	312	370	415	468	0.2
Chhattisgarh	4110	3667	3421	3598	4156	4286	1.8
Dadra & Nagar Haveli And Daman & Diu	619	570	542	522	536	500	0.2
Delhi	4890	4621	2911	3405	4322	4516	1.9
Goa	798	790	556	680	779	834	0.4
Gujarat	**21216**	**22536**	**21940**	**24221**	**25674**	**24646**	**10.5**
Haryana	10523	10223	9853	10546	9454	10496	4.5
Himachal Pradesh	1559	1694	1528	1924	2130	2043	0.9
Jammu & Kashmir	1503	1487	1301	1500	1668	1776	0.8
Jharkhand	3409	3416	3139	3246	3381	3606	1.5
Karnataka	13206	13067	11121	12479	15012	15421	6.6
Kerala	6339	6533	5461	5902	6883	6892	2.9
Ladakh	0	13	141	159	176	206	0.1
Lakshadweep	15	17	18	18	18	22	0.0
Madhya Pradesh	8006	7860	7283	7534	8346	8797	3.8
Maharashtra	21017	20797	17849	19051	20953	22030	9.4
Manipur	241	255	237	254	314	250	0.1
Meghalaya	492	550	409	473	562	620	0.3
Mizoram	139	141	130	146	175	198	0.1
Nagaland	154	172	163	191	203	219	0.1
Odisha	5930	6030	5927	6154	6646	7418	3.2
Puducherry	542	517	413	531	821	860	0.4
Punjab	7063	7114	5964	6579	6560	6884	2.9
Rajasthan	11403	10921	9179	10242	10771	11257	4.8
Sikkim	126	130	108	130	152	151	0.1
Tamil Nadu	14421	14116	12195	13068	14549	15491	6.6
Telangana	7000	6953	6223	6859	7291	7567	3.2
Tripura	235	232	230	237	249	269	0.1
Uttar Pradesh	18180	18407	18090	18791	19401	20575	8.8
Uttarakhand	1725	1656	1534	1619	1761	1870	0.8
West Bengal	8789	9308	8491	8681	8898	9598	4.1
Total Sales	**190352**	**190627**	**172610**	**185439**	**199530**	**207494**	**88.6**
Private Imports	16920	19284	18280	12170	15560	19408	8.3
SEZ Imports	5945	4216	3405	4088	7932	7356	3.1
Total Consumption of Petroleum Products	**213216**	**214127**	**194295**	**201697**	**223022**	**234259**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.

V.5: State-wise & Product-wise Per Capita Consumption of Petroleum Products

(Figures in Kg)

State/UT & Product	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
State-wise Per Capita Consumption of Petroleum Products						
Andaman & Nicobar Islands	558.0	571.5	451.3	474.5	548.3	551.1
Andhra Pradesh	158.4	155.9	147.2	143.0	151.7	153.4
Arunachal Pradesh	179.7	190.5	199.5	197.1	223.4	239.4
Assam	88.0	90.6	86.9	83.4	87.7	89.2
Bihar	50.5	52.0	53.2	43.6	44.6	45.3
Chandigarh	412.6	413.3	295.9	305.9	340.3	378.9
Chhattisgarh	160.9	143.6	133.9	122.0	139.3	141.5
Dadra & Nagar Haveli And Daman & Diu	1056.5	973.7	924.7	484.3	457.9	386.3
Delhi	291.9	275.9	173.8	165.5	206.2	210.1
Goa	547.1	541.9	381.1	436.2	496.8	528.7
Gujarat	351.4	373.2	363.3	347.0	363.8	343.3
Haryana	415.0	403.2	388.6	357.7	316.7	346.0
Himachal Pradesh	227.4	247.0	222.8	260.2	286.6	273.2
Jammu & Kashmir	112.3	111.9	106.1	111.8	123.5	130.3
Jharkhand	103.4	103.6	95.2	80.4	86.8	91.0
Karnataka	216.0	213.8	181.9	182.8	223.1	227.3
Kerala	189.9	195.7	163.6	165.7	193.1	192.4
Ladakh	435.9	441.8	484.1	534.9	587.6	685.8
Lakshadweep	235.0	256.6	274.6	258.8	266.2	312.1
Madhya Pradesh	110.3	108.3	100.3	89.1	97.6	101.2
Maharashtra	187.0	185.1	158.8	152.8	167.1	173.9
Manipur	88.5	93.6	86.9	80.2	98.3	77.3
Meghalaya	166.0	185.7	138.1	143.7	169.2	184.7
Mizoram	127.2	129.2	119.5	120.1	142.5	159.4
Nagaland	77.9	86.6	82.1	87.0	91.7	97.7
Odisha	141.4	143.7	141.3	134.7	144.4	160.0
Puducherry	435.6	415.2	331.7	337.5	510.1	518.6
Punjab	255.0	256.8	215.3	216.8	214.8	223.5
Rajasthan	166.2	159.1	133.8	129.2	134.4	138.4
Sikkim	207.1	214.1	178.0	191.5	222.0	219.1
Tamil Nadu	199.9	195.7	169.0	170.9	189.5	201.4
Telangana	198.4	197.0	176.3	181.8	192.3	198.4
Tripura	64.0	63.1	62.6	58.3	60.7	64.7
Uttar Pradesh	91.1	92.2	90.6	81.4	83.2	87.0
Uttarakhand	170.6	163.7	151.6	142.0	152.9	160.2
West Bengal	96.2	101.9	92.9	88.3	90.2	96.7
All India	157.3	157.5	142.6	149.8	162.1	149.0
Product-wise Per Capita Consumption of Petroleum Products						
Naphtha	9.4	9.8	10.2	10.5	8.8	9.9
MS	23.4	24.8	23.1	22.6	25.4	26.7
SKO	2.9	2.0	1.5	1.1	0.4	0.3
HSDO	68.9	68.2	60.0	56.3	62.4	64.4
LDO	0.5	0.5	0.7	0.7	0.5	0.6
F.O (Regular)	4.6	4.2	4.0	4.3	4.5	4.1
LSHS/HHS	0.3	0.3	0.3	0.3	0.6	0.6
All India	157.3	157.5	142.6	149.8	162.1	149.0

Note: Total may not tally due to rounding off. (Consumption data is excluding Pvt. Imports & SEZ sales) P : Provisional

Source: Petroleum Planning & Analysis Cell.

V.6: Consumption of Petroleum Products and Market Share of Oil Companies in India

(Figures in TMT)

Year	Consumption	IOCL	BPCL	HPCL	Other	Private	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2018-19	in TMT	83184	41338	37678	3978	47038	213216
	in %	39.0	19.4	17.7	1.9	22.1	100
2019-20	in TMT	81935	41851	37416	4502	48422	214127
	in %	38.3	19.5	17.5	2.1	22.6	100
2020-21	in TMT	72740	37552	34942	4144	44918	194295
	in %	37.4	19.3	18.0	2.1	23.1	100
2021-22	in TMT	77942	41086	36713	4590	41366	201697
	in %	38.6	20.4	18.2	2.3	20.5	100
2022-23	in TMT	87158	47592	41269	4512	42491	223022
	in %	39.1	21.3	18.5	2.0	19.1	100
2023-24 (P)	**in TMT**	**87325**	**49392**	**43395**	**4109**	**50039**	**234259**
	in %	**37.3**	**21.1**	**18.5**	**1.8**	**21.4**	**100**

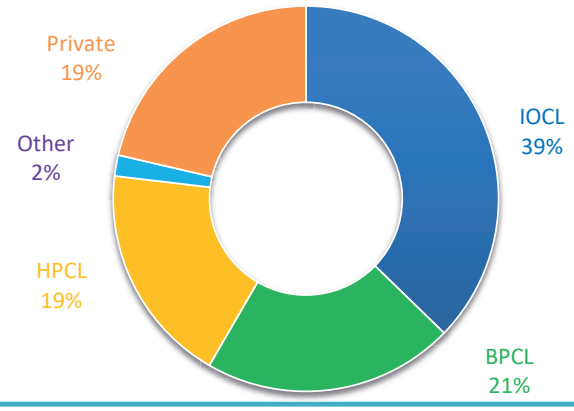
Note: Total may not tally due to rounding off. P : Provisional

1. Other 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.4: Market share of oil companies in India during 2023-24 (%)



V.7: Deliveries made to International/Coastal Bunkers

(Figures in TMT)

Items	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% to Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INTERNATIONAL BUNKERS							
F.O/LSHS	247	319	555	659	906	827	40.5
H.S.D	35	55	53	43	50	40	1.9
L.D.O	0	0	0	0	0	0	0.0
Total	282	374	609	702	956	867	42.4
COASTAL BUNKERS							
F.O/LSHS	422	401	313	351	450	475	23.3
H.S.D	635	701	558	542	649	691	33.8
L.D.O	5	2	2	4	6	9	0.4
Total	1062	1104	873	896	1104	1175	57.6
TOTAL BUNKERS							
F.O/LSHS	669	721	869	1010	1356	1302	63.8
H.S.D	670	756	611	585	699	731	35.8
L.D.O	5	2	2	4	6	9	0.4
Total	**1343**	**1479**	**1482**	**1598**	**2061**	**2042**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

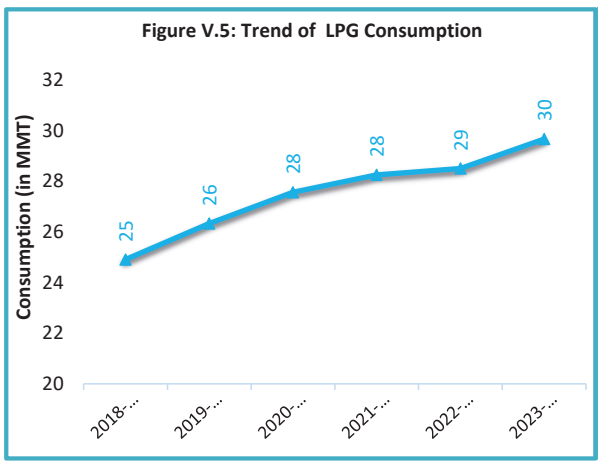
Source: Petroleum Planning & Analysis Cell.

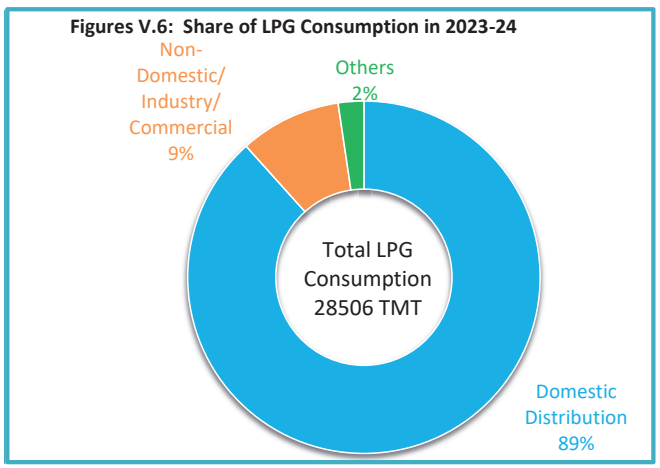
V.8: Sector-wise Consumption (end use) of Liquefied Petroleum Gas (LPG)

(Figures in TMT)

Sector	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Domestic Distribution	**21728.0**	**23076.0**	**25128.1**	**25501.6**	**25381.6**	**26207.4**	**88.3**
Non-Domestic/ Industry/Commercial	**2364.4**	**2614.4**	**1886.0**	**2238.8**	**2606.1**	**2759.9**	**9.3**
Transport	**181.1**	**172.8**	**119.0**	**123.0**	**108.4**	**89.5**	**0.3**
(i) Auto LPG	180.3	171.9	118.4	122.0	106.7	88.3	0.3
(ii) Railways	0.8	0.9	0.7	1.0	1.7	1.2	0.0
Power Generation	**1.8**	**1.5**	**0.4**	**0.4**	**0.6**	**0.3**	**0.0**
Agriculture Sector	**22.0**	**25.7**	**28.1**	**29.6**	**21.7**	**26.5**	**0.1**
Mining	**0.3**	**0.1**	**1.5**	**3.5**	**4.9**	**4.9**	**0.0**
Manufacturing (Bulk LPG)	**204.2**	**153.4**	**215.0**	**180.0**	**228.5**	**375.1**	**1.3**
(i) Chemicals	24.2	20.7	36.0	42.3	63.7	170.1	0.6
(ii) Engineering	3.0	3.0	2.7	2.0	1.2	1.3	0.0
(iii) Electronics	5.5	5.5	5.3	2.0	2.9	3.0	0.0
(iv) Mechanical	18.6	15.4	11.9	10.2	9.0	11.5	0.0
(v) Metallurgical	94.0	61.3	108.6	75.0	60.8	66.7	0.2
(vi) Textiles	2.3	2.6	2.1	2.4	1.4	1.6	0.0
(vii) Other Consumer/ Industrial Goods	56.7	45.0	48.4	46.2	89.6	120.9	0.4
Resellers/Retail	**0.0**	**0.0**	**0.9**	**2.5**	**1.8**	**0.3**	**0.0**
Miscellaneous (Bulk)	**88.9**	**81.9**	**115.4**	**174.1**	**150.1**	**185.7**	**0.6**
Total Sales	**24590.8**	**26125.7**	**27494.3**	**28253.4**	**28503.8**	**29649.5**	**100.0**
Private Imports	**316.0**	**204.0**	**64.2**	**0.1**	**0.1**	**14.1**	**0.0**
Total Consumption	**24906.8**	**26329.8**	**27558.4**	**28253.5**	**28503.8**	**29663.6**	**100**

Note: Total may not tally due to rounding off.
P: Provisional
Source: Petroleum Planning & Analysis Cell.





V.9: State-wise Consumption of Liquefied Petroleum Gas (LPG)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	11.0	12.2	12.1	13.1	13.6	13.8	0.0
Andhra Pradesh	1150.2	1190.0	1293.0	1325.5	1335.4	1329.7	4.5
Arunachal Pradesh	21.6	23.2	23.8	25.4	26.9	28.4	0.1
Assam	420.9	450.9	505.7	486.3	509.4	536.2	1.8
Bihar	1234.8	1404.4	1643.0	1625.0	1528.3	1607.2	5.4
Chandigarh	55.7	56.4	46.5	52.6	55.1	54.5	0.2
Chhattisgarh	272.5	294.8	344.2	332.0	330.2	346.2	1.2
Dadra & Nagar Haveli And Daman & Diu	29.2	31.3	30.5	29.2	33.2	33.2	0.1
Delhi	824.9	822.6	733.0	771.1	787.8	792.9	2.7
Goa	69.7	71.1	65.4	71.1	74.7	77.0	0.3
Gujarat	1105.2	1173.6	1186.3	1282.0	1405.0	1441.9	4.9
Haryana	805.0	858.2	869.4	930.8	981.7	1058.7	3.6
Himachal Pradesh	165.1	180.1	183.8	194.2	196.0	200.1	0.7
Jammu & Kashmir	204.7	210.6	210.0	215.8	217.5	237.0	0.8
Jharkhand	340.6	378.0	424.7	399.3	393.1	414.5	1.4
Karnataka	1687.3	1769.7	1840.7	1927.9	1996.8	2094.6	7.1
Kerala	989.2	1033.3	1071.7	1111.4	1133.3	1135.2	3.8
Ladakh	0.0	1.7	6.5	8.0	8.9	9.5	0.0
Lakshadweep	0.5	0.6	0.8	0.8	0.9	1.0	0.0
Madhya Pradesh	995.3	1068.2	1137.0	1140.2	1140.4	1192.6	4.0
Maharashtra	2989.6	3123.6	3089.1	3307.0	3363.6	3425.9	11.5
Manipur	35.7	40.8	48.6	51.9	55.6	53.6	0.2
Meghalaya	25.1	26.6	27.4	27.7	31.2	32.8	0.1
Mizoram	25.1	27.0	29.0	29.6	31.8	33.3	0.1
Nagaland	22.6	24.2	24.8	27.5	29.2	30.4	0.1
Odisha	548.5	553.1	692.0	638.4	627.2	683.6	2.3
Puducherry	44.2	44.9	47.2	47.8	46.9	49.0	0.2
Punjab	937.5	980.7	991.5	1027.1	1004.1	1048.3	3.5
Rajasthan	1292.5	1389.9	1412.7	1494.1	1534.8	1633.9	5.5
Sikkim	15.6	16.8	16.2	18.2	20.3	21.2	0.1
Tamil Nadu	2114.3	2178.1	2292.5	2375.6	2369.2	2375.4	8.0
Telangana	963.5	1001.4	1027.5	1086.9	1123.7	1133.1	3.8
Tripura	49.2	52.9	60.0	57.7	57.5	60.4	0.2
Uttar Pradesh	3166.2	3531.7	3819.4	3855.4	3778.8	4085.4	13.8
Uttarakhand	288.1	308.2	304.5	321.8	336.8	350.0	1.2
West Bengal	1689.7	1794.9	1983.9	1945.1	1924.7	2029.0	6.8
Total Sales	**24590.8**	**26125.7**	**27494.3**	**28253.4**	**28503.8**	**29649.5**	**100.0**
Private Imports	316.0	204.0	64.2	0.1	0.1	14.1	0.0
Total Consumption	**24906.8**	**26329.8**	**27558.4**	**28253.5**	**28503.8**	**29663.6**	**100**

Note: Total may not tally due to rounding off.

P: Provisional

Source: Petroleum Planning & Analysis Cell.

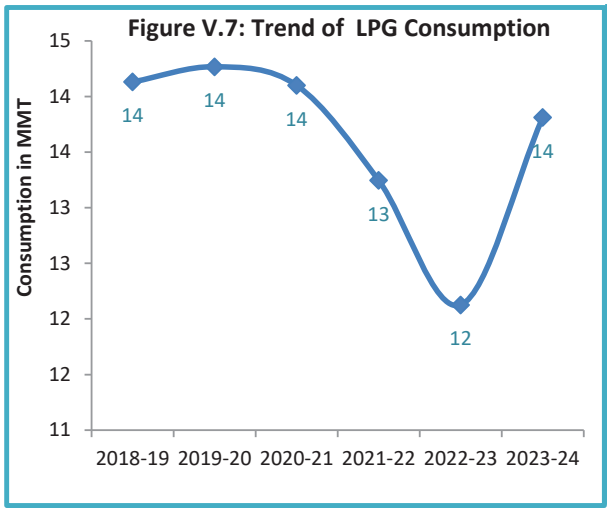
V.10: Sector-wise/State-wise Consumption (end use) of Naphtha

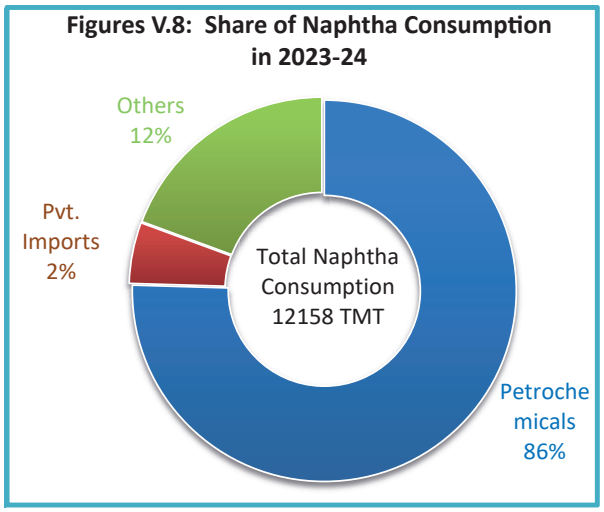
(Figures in TMT)

Sector & State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sector-wise Consumption (end use) of Naphtha							
Fertilizers	351.6	149.7	65.7	0.0	0.0	0.0	0.0
Petrochemicals	10601.6	10874.5	11339.4	11903.7	10402.4	10424.3	75.5
Power	5.3	0.4	70.2	6.1	19.3	0.0	0.0
Steel Plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Others	461.7	879.6	885.2	799.5	713.8	1037.5	7.5
Total Sales	**11420.2**	**11904.2**	**12360.4**	**12709.3**	**11135.5**	**11461.8**	**83.0**
Pvt Imports	1727.5	1305.5	1133.5	160.7	273.1	714.8	5.2
SEZ data	983.6	1058.0	606.5	375.6	717.9	1635.5	11.8
Total Consumption	**14131.2**	**14267.8**	**14100.4**	**13245.6**	**12126.5**	**13812.1**	**100.0**
State-wise Consumption (end use) of Naphtha							
Andhra Pradesh	24.7	26.1	26.5	27.7	23.7	27.1	0.2
Assam	204.6	303.2	320.1	297.4	217.5	260.1	1.9
Gujarat	**6107.4**	**6710.8**	**7791.7**	**7867.7**	**7464.7**	**6694.8**	**48.5**
Haryana	3444.1	3199.0	3003.9	3446.6	2540.5	3331.2	24.1
Jharkhand	0.6	1.5	2.6	0.9	0.0	4.0	0.0
Karnataka	146.4	157.5	65.7	0.0	0.0	0.0	0.0
Kerala	0.0	0.4	3.0	0.1	0.0	0.0	0.0
Madhya Pradesh	0.0	1.2	2.8	0.4	0.0	0.0	0.0
Maharashtra	363.1	344.7	290.9	279.4	328.5	376.7	2.7
Odisha	0.1	0.1	0.3	0.1	0.1	0.1	0.0
Punjab	0.0	0.0	0.0	0.0	7.1	38.4	0.3
Rajasthan	1.6	0.0	0.0	2.7	5.0	0.0	0.0
Sikkim	0.0	1.4	0.0	0.1	0.0	0.0	0.0
Tamil Nadu	179.1	1.7	3.7	1.7	5.4	6.4	0.0
Telangana	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Uttar Pradesh	1.3	0.0	0.0	1.3	8.3	0.0	0.0
West Bengal	947.2	1156.8	849.2	783.2	534.8	722.9	5.2
Total Sales	**11420.2**	**11904.2**	**12360.4**	**12709.3**	**11135.5**	**11461.8**	**83.0**
Private Imports	1727.5	1305.5	1133.5	160.7	273.1	714.8	5.2
SEZ Imports	983.6	1058.0	606.5	375.6	717.9	1635.5	11.8
Total Consumption	**14131.2**	**14267.8**	**14100.4**	**13245.6**	**12126.5**	**13812.1**	**100.0**

Note: Total may not tally due to rounding off. P: Provisional

Source: Petroleum Planning & Analysis Cell.





V.11: Sector-wise/State-wise Consumption (end use) of Kerosene

(Figures in TMT)

Sector & State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sector-wise Consumption (end use) of Kerosene							
Domestic PDS	**3231.2**	**2173.7**	**1586.6**	**1291.8**	**308.2**	**298.4**	**62.3**
Commercial/Industry	97.3	86.5	68.6	63.8	62.0	62.2	13.0
Others	131.0	136.6	142.6	137.9	119.3	118.4	24.7
Total Consumption	**3459.5**	**2396.8**	**1797.9**	**1493.4**	**489.6**	**479.1**	**100.0**
State-wise Consumption (end use) of Kerosene							
Andaman & Nicobar Islands	3.0	1.2	0.1	0.0	0.0	0.0	0.0
Andhra Pradesh	1.6	0.9	0.7	0.8	1.9	2.3	0.5
Arunachal Pradesh	12.0	10.0	10.5	9.7	8.1	8.8	1.8
Assam	190.1	138.8	120.3	92.3	10.7	8.8	1.8
Bihar	256.6	189.9	165.4	132.2	37.7	19.3	4.0
Chandigarh	0.2	0.1	0.1	0.1	0.1	0.2	0.0
Chhattisgarh	71.5	54.1	43.8	34.4	7.7	5.1	1.1
Dadra & Nagar Haveli And Daman & Diu	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Delhi	1.0	0.7	0.1	0.1	0.2	0.2	0.0
Goa	1.1	0.5	0.3	0.2	0.0	0.0	0.0
Gujarat	197.3	97.6	68.2	44.4	6.6	2.3	0.5
Haryana	3.2	2.5	1.5	0.9	0.6	0.7	0.1
Himachal Pradesh	14.7	11.9	8.7	5.4	3.7	3.6	0.7
Jammu & Kashmir	124.4	118.6	79.0	67.1	44.9	43.9	9.2
Jharkhand	117.0	83.5	64.8	53.7	14.8	8.4	1.7
Karnataka	99.8	64.5	41.4	26.3	14.7	15.5	3.2
Kerala	70.2	58.1	53.1	44.6	24.1	14.3	3.0
Ladakh	0.0	1.4	47.3	48.0	44.7	46.8	9.8
Lakshadweep	0.6	0.5	0.7	0.5	0.0	0.0	0.0
Madhya Pradesh	254.0	185.9	145.9	91.0	2.8	0.5	0.1
Maharashtra	200.2	54.0	23.8	14.9	5.8	3.9	0.8
Manipur	14.2	10.3	9.1	7.9	2.2	2.3	0.5
Meghalaya	15.1	14.9	14.0	12.5	2.1	2.4	0.5
Mizoram	3.7	2.8	2.5	2.1	0.1	0.1	0.0
Nagaland	7.8	7.1	6.7	6.1	1.0	0.9	0.2
Odisha	192.9	162.1	148.1	117.0	22.4	15.1	3.1
Puducherry	0.0	0.0	0.00	0.00	0.00	0.0	0.0
Punjab	2.3	4.5	1.2	0.7	0.4	0.3	0.1
Rajasthan	56.6	14.2	2.5	1.9	1.5	2.2	0.5
Sikkim	10.1	8.8	10.2	10.2	9.5	7.9	1.6
Tamil Nadu	196.4	153.9	130.4	104.9	73.8	55.8	11.6
Telangana	74.3	23.9	2.7	0.7	0.3	0.3	0.1
Tripura	22.8	20.4	19.5	17.5	6.5	7.1	1.5
Uttar Pradesh	686.4	353.5	23.8	2.5	1.7	1.2	0.2
Uttarakhand	11.5	3.8	4.1	3.5	4.0	3.8	0.8
West Bengal	**546.7**	**541.7**	**544.5**	**539.2**	**135.2**	**195.0**	**40.7**
Total Sales	**3459.5**	**2396.8**	**1795.1**	**1493.4**	**489.6**	**479.1**	**100.0**
Private Imports	-	-	2.8	-	-	-	0.0
Total Consumption	**3459.5**	**2396.8**	**1797.9**	**1493.4**	**489.6**	**479.1**	**100.0**

Note: Total may not tally due to rounding off. P: Provisional

Source: Petroleum Planning & Analysis Cell.

V.12: Sector-wise/State-wise Consumption (end use) MS (Petrol)

(Figures in TMT)

Sector & State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sector-wise Consumption (end use) of MS (Petrol)							
Retail/Resellers	**28156.2**	**29849.4**	**27847.1**	**30729.4**	**34870.7**	**37111.5**	**99.7**
Others	128.2	126.1	121.9	119.6	105.7	107.9	0.3
Grand Total	**28284.4**	**29975.5**	**27969.0**	**30849.0**	**34976.4**	**37219.4**	**100.0**
State-wise Consumption (end use) of MS (Petrol)							
Andaman & Nicobar Islands	18.1	18.9	13.8	15.7	19.4	20.2	0.1
Andhra Pradesh	1161.9	1278.4	1321.9	1419.4	1504.2	1571.4	4.2
Arunachal Pradesh	46.2	51.8	50.6	55.4	66.7	78.0	0.2
Assam	411.6	445.1	431.9	510.0	611.2	668.1	1.8
Bihar	793.0	852.1	848.9	926.7	1034.3	1081.7	2.9
Chandigarh	122.6	126.8	91.4	110.0	114.4	119.8	0.3
Chhattisgarh	559.6	613.1	604.3	660.9	743.4	798.1	2.1
Dadra & Nagar Haveli And Daman & Diu	42.8	38.9	30.0	38.6	44.2	46.3	0.1
Delhi	903.1	876.0	668.8	693.3	899.5	960.3	2.6
Goa	183.6	186.1	145.1	167.0	204.7	216.6	0.6
Gujarat	1976.0	2066.8	1860.2	2134.0	2397.8	2546.1	6.8
Haryana	978.5	1029.4	1011.6	1113.7	1203.3	1289.9	3.5
Himachal Pradesh	224.6	238.0	233.1	272.3	306.4	320.8	0.9
Jammu & Kashmir	274.7	300.4	273.1	316.3	354.7	380.2	1.0
Jharkhand	487.0	526.5	512.5	574.1	660.4	693.0	1.9
Karnataka	2142.7	2270.5	2123.9	2235.0	2648.1	2899.4	7.8
Kerala	1462.6	1558.8	1371.1	1495.8	1747.6	1791.5	4.8
Ladakh	0.0	3.6	12.5	16.8	20.3	21.7	0.1
Lakshadweep	0.0	0.0	0.0	0.0	0.7	1.3	0.0
Madhya Pradesh	1372.1	1463.7	1461.1	1542.7	1705.3	1825.1	4.9
Maharashtra	3358.1	3462.0	3014.4	3387.6	3815.2	4068.0	10.9
Manipur	61.2	68.2	62.1	67.5	88.4	75.5	0.2
Meghalaya	93.7	99.8	81.3	95.5	124.6	135.5	0.4
Mizoram	28.2	31.2	26.0	26.0	35.4	42.7	0.1
Nagaland	36.8	39.2	31.9	40.9	51.2	58.5	0.2
Odisha	775.9	834.5	782.4	863.9	992.6	1058.6	2.8
Puducherry	132.9	133.8	108.4	128.5	168.4	181.1	0.5
Punjab	879.2	960.2	888.4	1015.8	1133.6	1182.9	3.2
Rajasthan	1550.7	1657.0	1549.4	1621.5	1790.4	1896.4	5.1
Sikkim	19.7	21.1	15.8	19.4	26.5	28.9	0.1
Tamil Nadu	2602.0	2735.4	2580.6	2758.1	3152.9	3352.0	9.0
Telangana	1198.8	1288.3	1199.5	1357.3	1541.4	1675.1	4.5
Tripura	54.1	57.7	53.7	57.5	64.3	68.1	0.2
Uttar Pradesh	**3119.2**	**3319.9**	**3210.1**	**3696.1**	**4103.4**	**4368.6**	**11.7**
Uttarakhand	309.2	326.3	293.0	338.4	410.2	438.7	1.2
West Bengal	904.1	996.1	997.5	1076.9	1191.1	1259.1	3.4
Total Sales	**28284.5**	**29975.6**	**27960.3**	**30848.6**	**34976.2**	**37219.2**	**100.0**
Private Imports	-	-	8.7	0.0	0.0	0.0	0.0
Total Consumption	**28284.5**	**29975.6**	**27969.0**	**30848.6**	**34976.2**	**37219.2**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.

V.13: Sector-wise/State-wise Consumption (end use) of Aviation Turbine Fuel (ATF)

(Figures in TMT)

Sector & State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sector-wise Consumption (end use) of ATF							
Foreign airlines	1815.8	1853.4	733.3	994.3	1745.9	2057.0	24.9
Indian airlines	6216.2	6136.1	2955.3	4002.1	5595.4	6158.2	74.7
Others	11.3	9.1	8.3	10.7	35.5	30.4	0.4
Total Sales	**8043.3**	**7998.6**	**3696.9**	**5007.1**	**7376.7**	**8245.6**	**100.0**
Pvt Imports	258.8	0.0	0.9	0.9	1.3	1.5	0.02
Total Consumption	**8302.1**	**7998.6**	**3697.8**	**5008.0**	**7378.1**	**8247.0**	**100.0**
State-wise Consumption (end use) ATF							
Andaman & Nicobar Islands	25.1	22.3	7.9	12.1	17.3	20.5	0.2
Andhra Pradesh	79.6	73.7	38.3	58.1	78.8	73.7	0.9
Arunachal Pradesh	1.5	1.2	1.6	1.5	2.0	4.0	0.0
Assam	167.8	159.3	105.1	122.6	129.8	131.4	1.6
Bihar	38.3	38.5	19.8	26.6	35.5	34.5	0.4
Chandigarh	21.1	23.1	31.1	28.8	26.9	29.4	0.4
Chhattisgarh	42.8	42.3	21.8	28.5	32.4	29.4	0.4
Dadra & Nagar Haveli And Daman & Diu	1.3	1.3	1.2	1.2	1.2	1.5	0.0
Delhi	2064.8	2047.7	982.0	1314.4	1948.7	2125.0	25.8
Goa	154.0	159.5	48.6	87.7	132.9	197.2	2.4
Gujarat	274.8	250.1	117.1	172.0	293.7	339.2	4.1
Haryana	40.6	26.0	25.0	27.8	26.4	26.4	0.3
Himachal Pradesh	7.8	6.7	4.7	4.4	5.2	4.8	0.1
Jammu & Kashmir	50.0	46.0	29.8	53.4	93.7	85.1	1.0
Jharkhand	49.5	51.0	15.5	26.7	39.8	44.4	0.5
Karnataka	631.8	698.6	376.1	453.1	709.7	795.9	9.7
Kerala	475.1	533.1	181.1	302.0	498.2	544.4	6.6
Ladakh	0.0	1.1	4.1	3.8	7.1	6.2	0.1
Lakshadweep	0.0	0.0	0.06	0.12	0.16	0.1	0.0
Madhya Pradesh	65.6	78.4	49.6	75.9	117.9	119.9	1.5
Maharashtra	1639.0	1399.5	550.6	699.3	1125.4	1468.4	17.8
Manipur	9.4	10.5	3.6	3.3	10.7	11.3	0.1
Meghalaya	0.2	0.3	0.1	0.8	1.0	1.3	0.0
Mizoram	1.8	1.8	0.5	0.9	3.3	4.4	0.1
Nagaland	3.1	2.9	1.9	5.0	5.3	4.3	0.1
Odisha	102.1	92.0	54.2	63.3	83.8	90.0	1.1
Puducherry	0.7	0.5	0.0	0.0	0.1	0.1	0.0
Punjab	165.4	163.9	97.6	131.8	172.8	174.5	2.1
Rajasthan	194.5	171.4	93.2	141.4	157.2	169.3	2.1
Sikkim	0.1	0.1	0.2	0.8	0.3	0.4	0.0
Tamil Nadu	614.3	638.5	250.6	340.6	486.8	522.1	6.3
Telangana	531.0	541.1	242.3	314.9	459.1	498.8	6.0
Tripura	9.5	9.2	2.8	4.4	13.0	16.9	0.2
Uttar Pradesh	243.7	256.3	165.4	211.1	273.2	288.2	3.5
Uttarakhand	13.4	15.6	5.6	15.5	28.7	26.0	0.3
West Bengal	323.5	435.6	168.2	273.4	358.8	356.7	4.3
Total Sales	**8043.3**	**7998.6**	**3696.9**	**5007.1**	**7376.8**	**8245.5**	**100.0**
Private Imports	258.8	0.0	0.9	0.8	1.3	1.5	0.02
Total Consumption	**8302.1**	**7998.6**	**3697.8**	**5008.0**	**7378.1**	**8247.0**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.

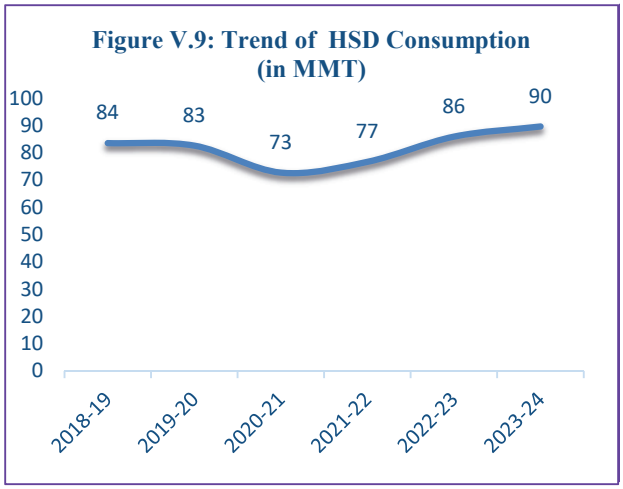
V.14: Sector-wise Consumption (end use) of High Speed Diesel (HSD) Oil

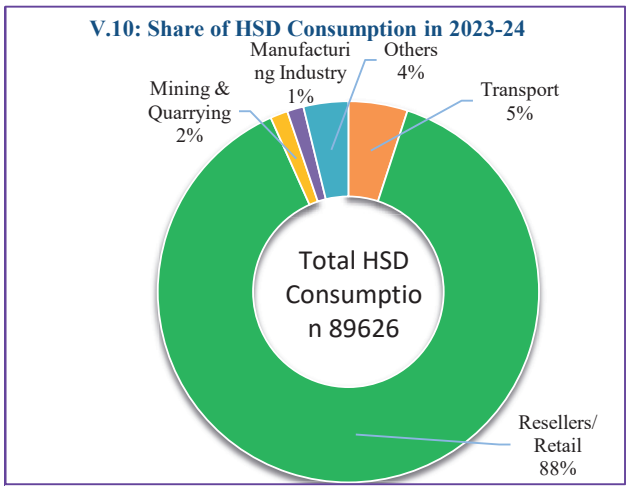
(Figures in TMT)

Sector	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Transport	**6209.5**	**6011.0**	**3256.7**	**4089.0**	**2607.7**	**4504.8**	**5.0**
(i) Road Transport	2727.4	2659.8	1373.8	1694.1	146.5	2282.0	2.5
(ii) Aviation	3.2	3.5	2.3	2.7	1.2	1.2	0.0
(iii) Shipping	763.3	808.4	658.3	643.8	744.6	764.0	0.9
(iv) Railways	2715.6	2539.3	1222.3	1748.4	1715.4	1457.6	1.6
Agriculture	**638.7**	**615.9**	**570.6**	**530.4**	**298.6**	**412.9**	**0.5**
Power Generation	**222.4**	**214.0**	**203.6**	**213.4**	**165.9**	**202.0**	**0.2**
Mining & Quarrying	**1465.0**	**1542.1**	**1642.2**	**1540.4**	**1053.2**	**1328.2**	**1.5**
Manufacturing Industry	**1263.7**	**1334.2**	**1355.1**	**1290.5**	**439.4**	**1252.6**	**1.4**
(i) Iron & Steel (Metallurgy)	148.2	134.9	125.9	136.3	70.3	101.3	0.1
(ii) Textile	25.2	20.0	15.6	15.9	2.9	6.2	0.0
(iii) Cement	254.8	266.4	265.7	235.5	124.4	501.7	0.6
(iv) Ceramic & Glass	7.7	6.9	5.3	5.4	2.6	3.7	0.0
(v) Chemicals & Allied	119.5	123.2	106.0	97.6	57.4	71.6	0.1
(vi) Aluminium	15.5	12.9	15.1	20.3	11.2	10.8	0.0
(vii) Civil Engineering	480.4	582.3	654.7	605.0	86.1	364.1	0.4
(vii) Elec./Electronics	15.0	13.0	8.6	9.5	7.4	8.8	0.0
(ix) Mechanical	135.0	116.6	106.4	114.6	45.1	81.4	0.1
(x) Fertilizers	5.2	6.1	5.2	4.6	3.9	4.7	0.0
(xi) Other Consumer/ Industrial Goods	57.2	51.9	46.6	45.8	28.1	98.3	0.1
Resellers/ Retail	**71697.2**	**70704.1**	**63373.6**	**66404.4**	**80026.2**	**79135.1**	**88.3**
Miscellaneous	1938.2	2064.1	2232.3	2552.0	1242.0	2749.0	3.1
Total Sales	**83434.7**	**82485.4**	**72634.1**	**76620.1**	**85833.0**	**89584.6**	**100.0**
Private Imports	93.5	116.7	78.5	38.5	67.7	41.4	0.0
Total Consumption	**83528.2**	**82602.1**	**72712.6**	**76658.6**	**85900.7**	**89626.0**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.





V.15: State-wise Consumption of High Speed Diesel (HSD) Oil

(Figures in TMT)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	149	157	132	142	163	161	0.2
Andhra Pradesh	3947	3834	3405	3432	3461	3640	4.1
Arunachal Pradesh	150	162	175	193	227	245	0.3
Assam	985	1024	904	1123	1328	1312	1.5
Bihar	2442	2367	2137	2055	2398	2367	2.6
Chandigarh	192	198	127	171	211	245	0.3
Chhattisgarh	1699	1648	1608	1657	1930	2126	2.4
Dadra & Nagar Haveli And Daman & Diu	291	234	162	175	213	183	0.2
Delhi	1021	835	499	598	662	614	0.7
Goa	316	306	233	276	294	274	0.3
Gujarat	5430	5608	5090	5780	6927	7179	8.0
Haryana	4847	4717	4435	4450	4206	4275	4.8
Himachal Pradesh	646	668	610	777	1003	795	0.9
Jammu & Kashmir	697	676	576	699	822	916	1.0
Jharkhand	1901	1968	1742	1661	1755	1889	2.1
Karnataka	6905	6602	5575	6204	8042	8351	9.3
Kerala	2576	2557	1923	2101	2486	2413	2.7
Ladakh	0	5	56	68	80	97	0.1
Lakshadweep	14	15	16	16	16	19	0.0
Madhya Pradesh	3798	3655	3369	3375	3885	4164	4.6
Maharashtra	9292	9529	8031	8322	9291	9927	11.1
Manipur	116	118	109	119	150	104	0.1
Meghalaya	344	356	281	331	397	438	0.5
Mizoram	73	75	69	83	101	111	0.1
Nagaland	78	90	89	101	110	122	0.1
Odisha	2613	2662	2535	2594	2929	3287	3.7
Puducherry	314	290	211	300	553	573	0.6
Punjab	3217	3214	2742	3113	3265	3467	3.9
Rajasthan	5440	5272	4337	4452	5074	5495	6.1
Sikkim	78	78	60	74	91	90	0.1
Tamil Nadu	6354	6191	5007	5371	5999	6287	7.0
Telangana	3753	3622	3253	3556	3529	3668	4.1
Tripura	94	87	89	95	101	109	0.1
Uttar Pradesh	9453	9485	9385	9496	9859	10308	11.5
Uttarakhand	762	744	657	700	780	815	0.9
West Bengal	3449	3439	3008	2962	3497	3522	3.9
Total Sales	**83435**	**82485**	**72634**	**76620**	**85833**	**89585**	**100.0**
Private Imports	94	117	79	39	68	41	0.0
Total Consumption	**83528**	**82602**	**72713**	**76659**	**85901**	**89626**	**100**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.

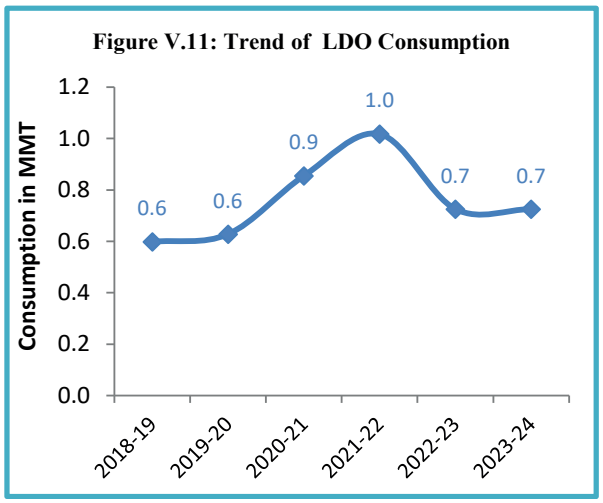
V.16: Sector-wise Consumption (end use) of Light Diesel Oil (LDO)

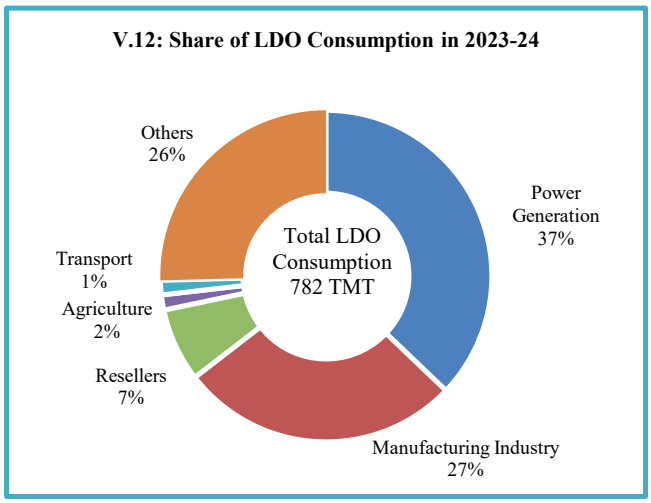
(Figures in TMT)

Sector	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Transport	**10.0**	**4.5**	**5.0**	**6.1**	**7.6**	**11.0**	**1.4**
(i) Road Transport	4.5	1.9	1.5	1.6	1.7	1.5	0.2
(ii) Shipping	5.0	2.2	3.2	4.2	5.5	9.1	1.2
(iii) Railways	0.5	0.4	0.3	0.3	0.4	0.4	0.1
Agriculture	**15.6**	**12.5**	**15.3**	**17.7**	**13.8**	**11.5**	**1.5**
Power Generation	**276.5**	**342.1**	**252.3**	**288.6**	**260.6**	**290.4**	**37.1**
Mining & Quarrying	**22.4**	**14.4**	**7.7**	**10.3**	**12.5**	**10.6**	**1.4**
Manufacturing Industry	**174.7**	**153.2**	**308.4**	**296.8**	**233.3**	**214.3**	**27.4**
(i) Civil Engineering	41.9	43.1	136.6	101.6	66.1	48.6	6.2
(ii) Metallurgical	67.7	64.0	78.2	91.8	87.4	78.5	10.0
(iii) Textile & Fibre	2.4	1.9	3.9	3.1	2.1	0.8	0.1
(iv) Cement	4.8	11.7	17.0	23.7	16.6	32.7	4.2
(v) Ceramic & Glass	0.4	0.5	0.9	6.2	4.7	2.0	0.3
(vi) Chemicals & Allied	17.4	16.5	50.4	33.5	24.3	24.6	3.1
(vii) Aluminium	28.4	5.4	5.7	6.9	9.7	8.7	1.1
(viii) Elec./Electronics	1.0	0.1	1.1	1.8	2.8	1.3	0.17
(ix) Mechanical	6.1	6.2	8.6	13.7	8.8	4.8	0.6
(x) Other Consumer/ Industrial Goods	4.6	3.8	6.0	14.5	10.8	12.3	1.6
Resellers	**33.3**	**37.5**	**124.8**	**206.0**	**60.6**	**56.1**	**7.2**
Miscellaneous	**65.3**	**63.3**	**128.9**	**187.2**	**131.7**	**187.2**	**23.9**
Total Sales	**597.8**	**627.5**	**842.4**	**1012.7**	**720.1**	**781.1**	**99.9**
Pvt Imports	**0.0**	**0.0**	**12.4**	**4.9**	**5.2**	**0.9**	**0.1**
Total Consumption	**597.8**	**627.5**	**854.8**	**1017.6**	**725.3**	**782.0**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.





V.17: State-wise Consumption (end use) of Light Diesel Oil (LDO)

(Figures in TMT)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	21.9	20.4	35.5	36.2	22.1	28.0	3.6
Arunachal Pradesh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Assam	5.1	3.6	3.8	5.0	3.3	4.1	0.5
Bihar	23.7	42.8	40.4	33.7	28.3	30.9	4.0
Chandigarh	0.5	0.4	0.4	0.5	0.5	0.4	0.1
Chhattisgarh	42.4	42.5	43.2	42.4	49.0	45.8	5.9
Dadra & Nagar Haveli And Daman & Diu	0.3	0.6	0.6	1.6	0.8	4.2	0.5
Delhi	2.2	0.7	2.1	2.4	0.0	0.0	0.0
Goa	0.6	0.2	0.3	1.5	1.2	1.2	0.2
Gujarat	34.5	29.4	108.4	146.2	73.2	60.1	7.7
Haryana	35.0	25.4	23.1	25.1	21.1	21.6	2.8
Himachal Pradesh	0.3	0.2	1.3	1.3	0.3	0.0	0.0
Jammu & Kashmir	1.1	0.9	2.7	1.9	0.1	0.2	0.0
Jharkhand	19.1	18.9	38.9	49.4	62.6	53.5	6.8
Karnataka	17.3	20.2	22.3	24.3	15.9	17.8	2.3
Kerala	2.0	5.8	16.5	12.8	8.7	9.1	1.2
Ladakh	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Madhya Pradesh	34.0	55.2	34.3	28.5	21.7	21.1	2.7
Maharashtra	77.8	80.7	140.5	213.4	106.8	121.6	15.6
Manipur	0.0	0.1	0.2	0.3	0.1	0.1	0.0
Meghalaya	0.0	0.1	0.3	0.4	0.2	0.0	0.0
Mizoram	0.0	0.0	0.4	0.2	0.0	0.0	0.0
Nagaland	0.1	0.1	0.4	0.7	0.0	0.0	0.0
Odisha	48.5	55.9	48.7	59.9	57.2	56.6	7.2
Puducherry	0.3	0.1	0.6	0.9	0.5	1.2	0.2
Punjab	9.4	9.2	12.3	11.5	8.1	7.3	0.9
Rajasthan	61.6	48.6	70.2	82.2	44.2	44.0	5.6
Sikkim	0.1	1.7	3.7	5.9	3.8	2.6	0.3
Tamil Nadu	14.4	19.5	35.4	35.8	27.8	29.0	3.7
Telangana	16.5	14.2	28.8	22.1	28.5	35.5	4.5
Tripura	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uttar Pradesh	83.9	85.9	82.0	99.5	83.4	118.9	15.2
Uttarakhand	2.3	1.0	7.1	2.9	0.8	0.9	0.1
West Bengal	43.4	43.6	38.5	64.2	50.1	65.1	8.3
Total Sales	**598.3**	**627.9**	**843.0**	**1012.7**	**720.3**	**780.8**	**99.9**
Private Imports	0.0	0.0	12.4	4.9	5.2	0.9	0.1
Total Consumption	**598.3**	**627.9**	**855.4**	**1017.6**	**725.5**	**781.7**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.

V.18: Sector-wise Consumption (end use) of Furnace Oil

(Figures in TMT)

Sector	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Transport	786.3	849.2	1022.4	1209.0	1561.3	1484.2	26.3
(i) Road Transport	110.0	120.5	132.1	172.4	178.3	173.7	3.1
(ii) Shipping	676.3	728.7	890.3	1036.2	1382.6	1310.4	23.2
(iii) Railways	0.1	0.0	0.0	0.4	0.4	0.1	0.0
Other Transport (incl. Agri. Retail Trade)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agriculture	**78.5**	**70.9**	**80.0**	**64.8**	**50.3**	**23.7**	**0.4**
Power Generation	**338.8**	**302.7**	**226.1**	**311.5**	**418.1**	**170.1**	**3.0**
Mining & Quarrying	**54.3**	**84.0**	**91.7**	**127.4**	**94.3**	**114.9**	**2.0**
Manufacturing Industry	**2577.4**	**2142.5**	**1874.5**	**2091.8**	**1966.1**	**1226.4**	**21.7**
(i) Civil Engineering	52.1	48.8	58.0	52.8	42.1	20.6	0.4
(ii) Metallurgical	885.2	778.5	666.2	758.4	684.4	389.2	6.9
(iii) Textile & Fibre	48.6	41.0	35.7	26.9	14.2	8.4	0.1
(iv) Cement	20.3	25.3	22.1	23.2	20.4	11.6	0.2
(v) Ceramic & Glass	202.5	79.0	59.9	99.3	126.7	79.6	1.4
(vi) Chemicals & Allied	295.2	240.4	226.5	232.7	201.3	113.6	2.0
(vii) Aluminium	386.4	338.6	348.8	390.3	384.5	233.2	4.1
(viii) Electrical	3.3	1.4	1.9	1.5	2.5	1.0	0.02
(ix) Mechanical	27.5	23.0	16.8	15.6	11.6	8.3	0.1
(x) Fertilizers	460.4	386.9	294.9	341.3	317.5	282.0	5.0
(xi) Other Consumer/ Industrial Goods)	196.0	179.7	143.6	149.7	161.0	78.7	1.4
Resellers	**298.4**	**289.6**	**267.8**	**211.2**	**153.1**	**125.1**	**2.2**
Miscellaneous	**1449.5**	**1398.1**	**1329.9**	**1388.0**	**1404.8**	**1985.0**	**35.1**
Total Sales	**5583.1**	**5137.1**	**4892.3**	**5403.7**	**5648.0**	**5129.5**	**90.8**
Private Imports	**611.4**	**774.9**	**316.0**	**411.4**	**536.8**	**518.1**	**9.2**
Total Consumption	**6194.5**	**5912.0**	**5208.3**	**5815.1**	**6184.8**	**5647.6**	**100.0**

Note: Total may not tally due to rounding off. P : Provisional

Source: Petroleum Planning & Analysis Cell.

Figure V.13: Trend of Furnace Oil Consumption

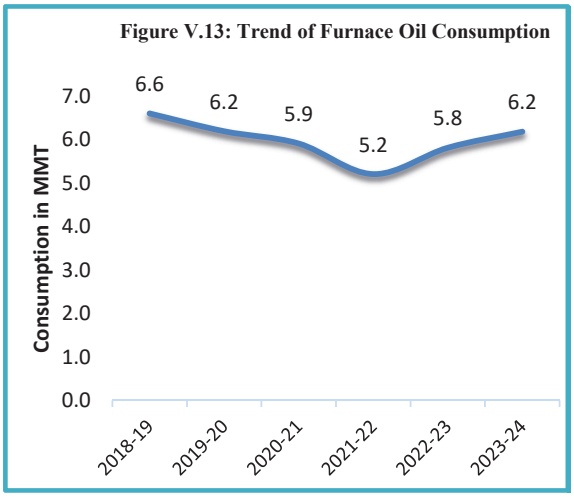
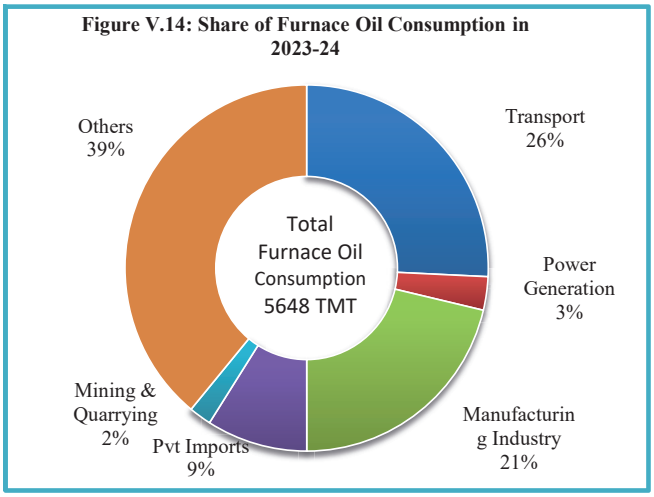


Figure V.14: Share of Furnace Oil Consumption in 2023-24



V.19: State-wise Consumption of Furnace Oil

(Figures in TMT)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Andhra Pradesh	283.0	258.5	242.7	239.4	357.0	391.1	6.9
Arunachal Pradesh	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Assam	4.7	4.9	6.7	6.5	5.6	4.7	0.1
Bihar	27.2	28.6	25.9	28.5	25.9	44.5	0.8
Chandigarh	4.4	2.0	1.3	1.0	1.5	1.0	0.0
Chhattisgarh	199.6	161.4	149.9	165.6	173.1	151.4	2.7
Dadra & Nagar Haveli And Daman & Diu	115.6	104.8	124.8	89.2	43.7	48.5	0.9
Delhi	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Goa	43.7	39.2	30.6	28.1	0.0	0.0	0.0
Gujarat	685.4	748.3	823.0	1021.7	1223.3	949.5	16.8
Haryana	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Himachal Pradesh	47.7	40.4	43.6	40.8	27.6	2.5	0.0
Jammu & Kashmir	2.5	4.2	3.5	4.0	3.6	1.9	0.0
Jharkhand	141.5	112.2	106.9	122.2	136.3	142.3	2.5
Karnataka	354.4	291.8	259.0	271.4	275.2	309.3	5.5
Kerala	258.9	278.0	332.7	344.2	422.6	439.2	7.8
Ladakh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lakshadweep	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Madhya Pradesh	120.9	93.8	85.8	88.2	77.1	71.1	1.3
Maharashtra	815.3	766.3	666.6	716.6	667.1	546.5	9.7
Manipur	0.1	0.6	0.5	0.5	0.4	0.0	0.0
Meghalaya	0.0	0.0	0.0	0.0	0.3	0.6	0.0
Mizoram	0.0	0.0	0.0	0.0	0.4	0.2	0.0
Nagaland	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Odisha	856.1	921.8	901.1	1017.7	1016.6	1069.4	18.9
Puducherry	39.6	38.9	35.1	37.0	36.3	38.5	0.7
Punjab	209.1	171.0	146.7	160.7	138.0	127.6	2.3
Rajasthan	8.8	0.0	0.0	0.0	0.0	0.0	0.0
Sikkim	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Tamil Nadu	655.3	502.7	382.7	433.0	493.2	399.2	7.1
Telangana	129.3	109.6	102.2	117.2	139.1	96.3	1.7
Tripura	0.0	0.0	0.6	0.1	0.0	0.0	0.0
Uttar Pradesh	7.2	0.0	0.0	0.0	0.0	0.0	0.0
Uttarakhand	146.0	67.9	72.7	99.0	109.2	118.6	2.1
West Bengal	426.0	390.0	347.5	371.2	274.8	175.7	3.1
Total Sales	**5583.1**	**5137.1**	**4892.3**	**5403.7**	**5648.0**	**5129.5**	**90.8**
Private Imports & SEZ State	611.4	774.9	316.0	411.4	536.8	518.1	9.2
Total Consumption	**6194.5**	**5912.0**	**5208.3**	**5815.1**	**6184.8**	**5647.6**	**100.0**

Note: Total may not tally due to rounding off. P: Provisional

Source: Petroleum Planning & Analysis Cell.

V.20: Sector-wise/State-wise Consumption (end use) of Low Sulphur Heavy Stock

Sector & State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sector-wise Consumption of Low Sulphur Heavy Stock							
Agriculture	**7.9**	**6.4**	**6.8**	**6.5**	**3.5**	**10.9**	**1.2**
Power Generation	**9.3**	**17.9**	**10.7**	**29.7**	**18.9**	**37.5**	**4.3**
Mining	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Manufacturing Industry	**175.0**	**202.0**	**196.3**	**191.2**	**250.3**	**224.8**	**25.8**
(i) Civil Engineering	3.1	6.1	7.4	7.4	4.3	1.7	0.2
(ii) Metallurgical	60.3	78.7	66.2	66.8	63.8	46.8	5.4
(iii) Iron & Steel	71.9	86.3	93.9	88.3	123.0	121.1	13.9
(iv) Textile & Fibre	2.7	2.5	3.5	6.5	10.1	10.3	1.2
(v) Cement	0.9	0.8	0.9	0.7	0.0	0.0	0.0
(vi) Chemicals & Allied	13.6	12.4	10.2	6.5	3.8	6.6	0.8
(vii) Electrical	0.0	0.7	0.1	0.4	1.4	0.0	0.0
(viii) Mechanical	0.5	0.8	2.3	2.0	2.9	5.3	0.6
(ix) Fertilizers	0.5	1.0	0.5	0.6	2.1	5.8	0.7
(x) Other Consumer/ Industrial Goods)	21.5	12.7	11.3	12.0	38.9	27.2	3.1
Miscellaneous	**128.7**	**113.0**	**116.0**	**151.9**	**416.7**	**534.7**	**61.3**
Resellers	**48.0**	**50.3**	**48.5**	**67.4**	**83.6**	**64.8**	**7.4**
Total Sales	**368.9**	**389.6**	**378.3**	**446.7**	**773.0**	**872.7**	**100.0**
Pvt Imports	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total Consumption	**368.9**	**389.6**	**378.3**	**446.7**	**773.0**	**872.7**	**100.0**
State-wise Consumption of Low Sulphur Heavy Stock							
Andhra Pradesh	59.6	69.1	82.0	74.4	75.6	76.0	8.7
Bihar	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chandigarh	0.6	0.0	0.0	0.0	0.0	0.3	0.0
Chhattisgarh	0.0	0.0	0.0	0.0	0.1	16.5	1.9
Dadra & Nagar Haveli And Daman & Diu	0.0	0.0	0.0	0.5	0.2	0.0	0.0
Delhi	38.2	13.5	0.0	0.0	0.0	0.0	0.0
Goa	0.0	0.0	0.0	4.1	22.7	32.9	3.8
Gujarat	0.6	1.3	1.7	20.6	54.0	40.3	4.6
Haryana	49.1	57.1	59.1	77.5	82.3	75.9	8.7
Himachal Pradesh	0.7	1.3	3.3	4.0	5.6	16.1	1.8
Jammu & Kashmir	0.0	0.0	0.0	0.0	0.1	1.1	0.1
Jharkhand	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Karnataka	0.1	0.0	0.0	0.0	0.1	0.3	0.0
Kerala	1.3	2.1	0.1	5.2	7.9	0.0	0.0
Ladakh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Madhya Pradesh	0.1	0.0	1.6	4.8	1.9	1.2	0.1
Maharashtra	3.8	6.2	14.2	47.6	154.3	187.0	21.4
Odisha	0.0	0.0	0.0	0.0	13.2	1.0	0.1
Puducherry	1.4	1.0	0.0	0.4	1.4	0.6	0.1
Punjab	4.3	2.9	2.0	0.9	5.7	9.3	1.1
Rajasthan	67.7	78.9	68.0	72.1	82.0	87.4	10.0
Tamil Nadu	1.6	0.9	0.7	0.0	43.9	25.5	2.9
Telangana	0.6	0.6	0.0	0.0	0.0	0.0	0.0
Uttar Pradesh	130.4	148.0	138.1	130.7	142.3	137.2	15.7
Uttarakhand	9.1	6.5	7.3	3.8	6.4	13.2	1.5
West Bengal	0.0	0.0	0.0	0.1	73.4	151.2	17.3
Total Consumption	**369.0**	**389.5**	**378.2**	**446.7**	**773.0**	**872.8**	**100.0**

Note: Total may not tally due to rounding off. P: Provisional

Source: Petroleum Planning & Analysis Cell.

V.21: State-wise Consumption of Lubes & Greases

(Figures in TMT)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	0.7	0.7	0.8	0.6	0.8	0.6	0.0
Andhra Pradesh	30.8	27.2	31.3	36.3	39.1	42.4	1.0
Arunachal Pradesh	0.6	0.5	0.5	0.5	0.7	0.7	0.0
Assam	22.3	28.5	39.2	37.8	39.2	53.2	1.3
Bihar	14.5	13.7	13.4	13.5	13.6	16.4	0.4
Chandigarh	1.7	4.4	2.4	2.7	2.6	3.1	0.1
Chhattisgarh	20.5	20.3	20.3	22.7	25.8	26.9	0.7
Dadra & Nagar Haveli And Daman & Diu	123.5	147.2	181.2	164.2	191.4	175.7	4.3
Delhi	17.2	15.6	13.9	13.8	13.1	14.2	0.3
Goa	4.7	4.6	4.6	4.8	5.1	5.9	0.1
Gujarat	96.6	96.4	109.3	127.5	125.2	134.6	3.3
Haryana	49.9	53.1	50.5	55.4	65.8	58.9	1.4
Himachal Pradesh	15.6	12.5	15.1	10.7	12.8	16.5	0.4
Jammu & Kashmir	8.8	7.5	7.3	9.5	9.7	11.0	0.3
Jharkhand	33.3	30.5	30.1	30.4	33.4	40.1	1.0
Karnataka	51.8	46.0	55.0	61.0	61.7	69.8	1.7
Kerala	43.6	41.2	45.5	43.9	41.3	43.5	1.1
Ladakh	0.0	0.0	0.3	0.3	0.3	0.3	0.0
Lakshadweep	0.1	0.1	0.1	0.1	0.0	0.1	0.0
Madhya Pradesh	44.8	42.6	41.5	42.1	43.8	48.2	1.2
Maharashtra	285.5	303.3	330.2	380.7	449.5	486.8	11.9
Manipur	0.4	0.4	0.4	0.5	0.5	0.3	0.0
Meghalaya	1.0	0.7	0.8	0.9	1.0	1.2	0.0
Mizoram	0.2	0.2	0.1	0.2	0.2	0.3	0.0
Nagaland	0.5	0.5	0.6	0.6	0.6	0.6	0.0
Odisha	24.2	21.0	22.1	25.3	26.2	30.2	0.7
Puducherry	2.0	2.1	1.9	3.1	2.9	3.1	0.1
Punjab	49.2	40.9	40.6	42.8	37.5	40.5	1.0
Rajasthan	52.5	49.9	59.1	57.7	55.1	61.0	1.5
Sikkim	0.1	0.1	0.1	0.1	0.2	0.2	0.0
Tamil Nadu	111.1	99.1	132.7	144.3	167.6	175.3	4.3
Telangana	40.7	46.3	52.8	43.8	44.0	47.1	1.2
Tripura	1.1	0.8	0.9	0.9	0.9	1.4	0.0
Uttar Pradesh	76.7	76.4	82.8	89.6	85.6	83.1	2.0
Uttarakhand	18.0	17.0	21.9	14.5	15.1	17.3	0.4
West Bengal	68.9	65.2	66.5	80.4	77.9	96.1	2.4
Total Sales	**1312.8**	**1316.6**	**1475.4**	**1563.0**	**1690.4**	**1806.3**	**44.2**
Private Imports	2355.1	2516.8	2621.9	2977.3	2046.7	2280.9	55.8
Total Consumption	**3667.9**	**3833.4**	**4097.3**	**4540.3**	**3737.2**	**4087.2**	**100.0**

Note: Total may not tally due to rounding off. P:Provional

Source: Petroleum Planning & Analysis Cell.

V.22: State-wise Consumption of Petcoke

(Figures in TMT)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	587.7	541.3	402.1	524.9	775.0	599.1	2.9
Assam	267.0	183.4	205.9	182.3	184.0	158.6	0.8
Bihar	188.6	194.4	198.0	155.0	185.2	240.1	1.2
Chandigarh	28.4	21.8	10.3	1.8	2.9	14.3	0.1
Chhattisgarh	927.0	634.0	395.5	442.3	595.1	457.2	2.3
Dadra & Nagar Haveli And Daman & Diu	0.0	0.0	0.0	0.0	0.0	0.0	0
Delhi	0.0	0.0	0.0	0.0	0.0	0.0	0
Goa	4.0	6.5	12.6	6.3	11.9	5.0	0.0
Gujarat	1480.9	1594.1	904.5	1161.8	1104.8	981.3	4.8
Haryana	0.2	0.0	0.0	0.0	0.0	0.0	-
Himachal Pradesh	356.3	463.0	343.7	532.3	497.0	617.2	3.0
Jammu & Kashmir	72.4	73.4	75.3	87.9	87.2	55.5	0.3
Jharkhand	96.1	65.2	30.6	9.2	3.5	33.5	0.2
Karnataka	833.9	865.2	518.3	804.0	774.6	576.7	2.8
Kerala	14.7	15.3	26.7	15.3	20.7	24.7	0.1
Madhya Pradesh	869.5	822.2	580.0	725.7	1022.5	955.6	4.7
Maharashtra	187.3	125.9	69.6	93.0	124.1	108.2	0.5
Meghalaya	3.2	48.1	0.0	0.0	0.0	0.0	0.0
Odisha	407.8	356.4	406.5	424.8	520.0	697.4	3.4
Puducherry	0.0	0.0	0.0	0.0	0.4	1.5	-
Punjab	1317.6	1249.3	783.8	801.8	621.6	614.4	3.0
Rajasthan	2211.1	1835.5	1197.7	1924.6	1670.2	1514.4	7.5
Tamil Nadu	824.9	815.6	538.7	736.0	828.9	965.3	4.8
Telangana	44.7	77.0	75.8	161.3	234.8	196.5	1.0
Uttar Pradesh	43.3	108.8	105.0	38.4	43.7	34.0	0.2
Uttarakhand	121.2	111.3	73.4	77.8	27.8	37.1	0.2
West Bengal	53.8	67.0	115.9	214.7	230.8	322.6	1.6
Total Sales	**10941.8**	**10274.7**	**7070.1**	**9121.2**	**9566.6**	**9210.1**	**45.3**
Private Imports	7925.6	10674.1	8256.2	4213.4	8663.7	10955.8	53.9
SEZ data	2478.5	759.4	278.8	920.9	112.6	152.7	0.8
Total Consumption	**21345.9**	**21708.2**	**15605.2**	**14255.4**	**18342.9**	**20318.5**	**100.0**

Note: Total may not tally due to rounding off.

P : Provisional

Source: Petroleum Planning & Analysis Cell.

V.23: State-wise Consumption of Bitumen

(Figures in TMT)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Share of Total Cons. 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andaman & Nicobar Islands	4.9	4.7	4.4	6.4	6.7	6.0	0.1
Andhra Pradesh	250.0	190.6	207.2	184.3	184.2	201.0	2.3
Arunachal Pradesh	16.2	15.0	14.0	17.2	14.5	9.7	0.1
Assam	46.5	30.3	23.1	20.6	19.9	21.9	0.2
Bihar	217.5	260.1	421.2	361.6	276.8	314.2	3.6
Chandigarh	7.3	3.2	1.8	0.8	0.2	0.4	0.0
Chhattisgarh	244.9	130.5	162.5	180.5	236.4	249.5	2.8
Dadra & Nagar Haveli And Daman & Diu	8.5	5.2	2.4	1.7	3.3	1.8	0.0
Delhi	0.7	1.4	3.1	3.7	2.7	1.4	0.0
Goa	16.4	12.9	9.0	27.3	26.3	19.9	0.2
Gujarat	524.7	374.7	391.2	537.7	741.3	612.2	7.0
Haryana	146.1	135.4	253.8	279.3	187.7	198.1	2.2
Himachal Pradesh	71.3	64.9	74.4	74.7	64.3	58.1	0.7
Jammu & Kashmir	59.8	43.4	37.7	39.8	29.7	38.4	0.4
Jharkhand	212.5	170.2	160.3	153.5	217.3	260.1	3.0
Karnataka	228.8	190.8	156.5	127.5	110.2	123.0	1.4
Kerala	245.1	242.7	269.5	239.0	219.2	184.1	2.1
Ladakh	0.0	0.1	13.8	14.3	14.5	24.3	0.3
Lakshadweep	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Madhya Pradesh	308.8	227.9	259.9	249.0	191.4	242.6	2.8
Maharashtra	711.7	653.2	663.3	560.6	585.8	617.0	7.0
Manipur	4.1	5.4	3.0	2.4	6.5	3.1	0.0
Meghalaya	9.8	4.0	4.3	3.6	3.8	7.6	0.1
Mizoram	7.1	3.1	3.1	4.3	2.9	5.5	0.1
Nagaland	6.0	7.0	7.3	8.8	5.9	1.9	0.0
Odisha	89.8	99.9	112.1	113.0	113.2	130.9	1.5
Puducherry	1.6	1.1	1.6	1.2	0.6	0.0	0.0
Punjab	168.6	232.2	153.2	149.7	90.5	80.5	0.9
Rajasthan	403.0	335.8	309.4	325.1	280.1	278.1	3.2
Sikkim	1.8	2.1	1.7	1.4	0.3	0.3	0.0
Tamil Nadu	493.7	464.8	517.5	428.0	565.9	728.9	8.3
Telangana	202.5	188.2	197.0	153.7	155.9	168.1	1.9
Tripura	4.5	4.0	3.5	4.4	5.5	5.9	0.1
Uttar Pradesh	854.0	721.9	776.2	770.3	690.3	790.0	9.0
Uttarakhand	33.5	44.2	78.6	32.3	31.0	37.9	0.4
West Bengal	228.7	227.2	194.9	163.5	210.6	208.8	2.4
Total Sales	**5830.4**	**5097.7**	**5492.4**	**5241.1**	**5295.5**	**5631.3**	**63.9**
Private Imports	877.3	1622.6	2031.5	2575.3	2745.6	3175.9	36.1
Total Consumption	**6707.7**	**6720.4**	**7523.9**	**7816.3**	**8041.1**	**8807.2**	**100.0**

Note: Total may not tally due to rounding off. P:Provional

Source: Petroleum Planning & Analysis Cell.

CHAPTER-VI



Trade-Import & Exports

Chapter Highlights

The export increased from ₹23,07,726 Crore in 2018-19 to ₹36,21,550 Crore in 2022-23, with a slight decrease to ₹36,19,292 Cr. in 2023-24. The import increased from ₹35,94,675 Crore in 2018-19 to ₹57,49,801 Crore in 2022-23, with a slight decrease to ₹55,92,877 Cr. in 2023-24. Over all India's trade deficit was lower by 6.6% at **₹19,73,585 crore** in 2023-24 from **₹21,13,328 crore** during 2022-23.

India's import bill on import of Crude Oil, LNG, and Petroleum Products decreased by 12.8% in value terms from ₹ 16,13,435 crore in 2022-23 to ₹14,06238 crore in 2023-24. And in quantity term, import of crude oil, LNG and petroleum products increased by 3.3% from **297.15 MMT** in 2022-23 to **306.95 MMT** during 2023-24.



Import of crude oil in the country during 2023-24 was 234.26 MMT valued at ₹11,05,176 crore, which was higher by 0.7% (quantity-terms) as compared to 2022-23, **232.70 MMT** valued at ₹12,60,372 crores. It was decreased by 12.3% in value term over the same period.

Import of LNG in the country during 2023-24 was 24.0 MMT valued at ₹1,10,994 crore, which was 20.9% (quantity-terms) higher than the imports of LNG during 2022-23 **(19.85 MMT)** valued at ₹ 1,37,210 crore. However, it decreased 19.1% in value terms over the same period.



Import of petroleum products in the country during 2023-24 was 48.69 MMT valued 1,90,069 crore, which was higher by 9.2% (quantity-terms) over the imports of petroleum products of **44.60 MMT** valued 2,15,854 crore during 2022-23. However, it decreased by 11.9% in value terms over the same period.

Exports of petroleum products in the country during 2023-24 was 62.59 MMT, which was higher by 2.6% over the exports of petroleum products of **61.02 MMT** during 2022-23. However, it decreased 14.0% in value terms over the same period.





Crude oil imports by Public Sector Oil Companies accounted for **60.7%** during 2023-24 and **39.3%** for petroleum product. Public Sector Oil Companies exports of petroleum products accounted for **20.9%**.

Self-sufficiency in Crude Oil and Gas is **12.2%** and **52.9%** respectively. India's Oil and Oil Equivalent Gas (O+OEG) import dependency increased to **79.2%** in FY 2023-24 from **78.6%** during the FY 2022-23.





FDI inflow received was ₹270 crore in the P&NG Sector contributing 0.1% of total FDI inflow (₹3,67,899 Crore) in the economy during 2023-24. FDI inflows in India was decreased by 0.02% in the entire sector during the FY 2023-24 as compare FY 2022-23. The FDI equity inflow in the Oil & Gas Sector decreased from ₹1017 Crore in 2018-19 to **₹876 Crore** in 2022-23,with a decrease to **₹270 Crore** in 2023-24.

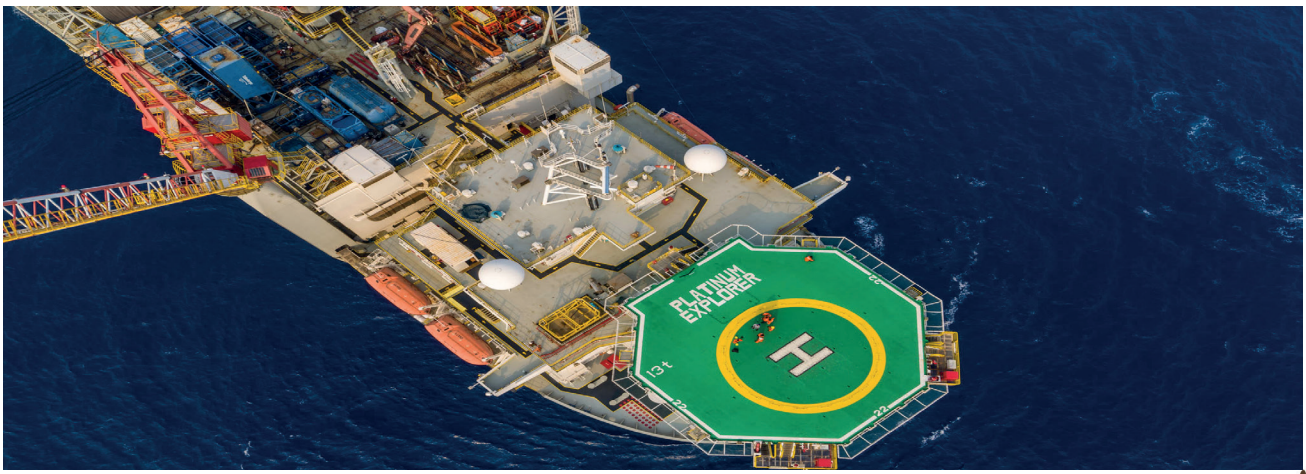
Introduction

India has powered through to emerge as the fifth largest economy in the world. International trade has played a key role in fueling India's economic growth. The world bank estimates shows that share of merchandise and services trade in India's GDP increased from 15% in 1980 to 46% in 2023. As per the statistics of ITC Trade Map, the growing emphasis on export-led growth is reflected in the improved share of India's exports in global trade – from 0.4% in 1980 to 1.85% to 2023. The Government of India has established an ambitious objective to achieve merchandise exports worth USD 1 trillion by the fiscal year 2030 (FY30).



India is amongst the world's leading energy consumer and is widely considered as the emerging energy superpower as a demand driver of both conventional and clean energy resources. The domestic petroleum sector was under Administered Pricing Mechanism (APM) prior to 01.04.2002. Import of crude oil was fully canalized through the Indian Oil Corporation Limited (IOCL) on behalf of all Oil Public Sector Units (PSUs) and controlled by the Empowered Standing Committee (ESC) of the Government of India (GOI). IOCL was the single entity for all the contract signings and payments made to suppliers and ship owners. All other PSU refiners were reimbursing payments for crude oil procured for them to IOCL on back-to-back basis.

The Union Cabinet approved the dismantling of the APM for the petroleum sector w.e.f. 01.04.2002. Since then each Oil PSU is procuring crude on its own. One of the key objectives of dismantling APM was to create a vibrant and globally competitive oil industry with PSU refiners competing with global and domestic private refiners by improving their efficiency to global benchmarks. Since dismantling of APM, each Oil PSU started making their own arrangements for import of crude oil. However, the crude import arrangements were finalized through Empowered Standing Committee (ESC) of each company wherein representative of Government of India were members. Since April 2016, with the approval of Union Cabinet, Public Sector Oil Companies have been empowered to evolve their own policies for import of crude oil, consistent with CVC guidelines and get them approved by the respective Boards. This measure, which is in keeping with the principle of Minimum Government Maximum Governance, will increase the operational and commercial flexibility of the oil companies and enable them to adopt the most effective procurement practices for import of crude oil.



Scenario: "India imports about 87.8% of its crude oil requirement and only 12.2% is met through indigenous sources. India's crude oil import dropped 12.3% in the FY 2023-24 due to lower international rates, but the dependency on overseas suppliers rose to a new high. India imported 234.26 million tonnes of crude oil, which is refined into fuels like petrol and diesel, in the FY 2023-24, almost the same as in the previous financial year. However, it paid $133.37 billion for the imports in FY 2023-24 as against $157.53 billion import bill in 2022-23. Import dependence soared to 87.8% in 2023-24, up from 87.4%. Domestic crude oil production was almost unchanged at 29.36 million tonnes in 2023-24. Besides crude oil, India spent $22.93 billion on import of 48.69 million tonnes of petroleum products like LPG, Fuel oil, Petcoke etc. It also exported 62.59 million tonnes of products for $47.72 billion.

Other than oil, India also imports gas in its liquid form, called LNG. After the price shock of 2022-23, import of 24.0 million tonnes of gas cost $13.31 billion in the FY 2023-24. This compared with $17.11 billion spent on the import of 19.85 million tonnes of gas in 2022-23 when energy prices shot up to record levels in the aftermath of Russia's invasion of Ukraine.

Net oil and gas import bill (crude oil plus petroleum product plus LNG import bill minus exports) stood at USD 121.99 billion in 2023-24, down from USD 144.23 billion. India's substantial petroleum imports directly influence the nation's consumption patterns. The import volume reflects the critical role petroleum and its products play in meeting the country's energy demands. The consumption volume of petroleum products in the country amounted to around 234.26 million metric tons in fiscal year 2023.

Government Strategy to reduce import dependency

To fill the supply and demand gaps of petroleum Products, Oil & Gas Organisation imports the Oil & Gas. Oil and Gas Public Sector Undertakings (PSUs) have diversified their crude basket and procure crude from countries located at various geographical locations viz. Middle East, Africa, North America, South America, etc.

The Government has implemented a comprehensive, multi-pronged strategy to reduce import dependency on crude oil. This approach includes, among other measures, the substitution of demand by promoting the use of natural gas as fuel and feedstock across the country to increase its share in the economy and transition towards a gas-based economy. Additionally, the strategy emphasizes the promotion of renewable and alternative fuels such as ethanol, compressed biogas (CBG), and biodiesel, alongside the establishment of electric vehicle charging infrastructure. Notably, to encourage the adoption of CBG as an automotive fuel, the Government has launched the **Sustainable Alternative Towards Affordable Transportation (SATAT)** initiative.

During the last ten years, Ethanol Blending Program (EBP) by Public Sector OMCs has achieved significant outcomes, including estimated foreign exchange savings of more than Rs. 1,08,655 crore of foreign exchange as on 30.09.2024. The ethanol produced from sugar-based feedstock has helped sugar factories to reduce its surplus sugar inventory and generate revenue early to clear the dues of cane farmers. During the last ten years, EBP has helped in expeditious payment of approx. Rs. 92,409 crore to the farmers as on 30.09.2024. Furthermore, it is projected that achieving a 20% ethanol blending target in petrol will result in annual payments exceeding ₹35,000 crore to farmers, reinforcing their economic well-being and supporting agricultural sustainability.

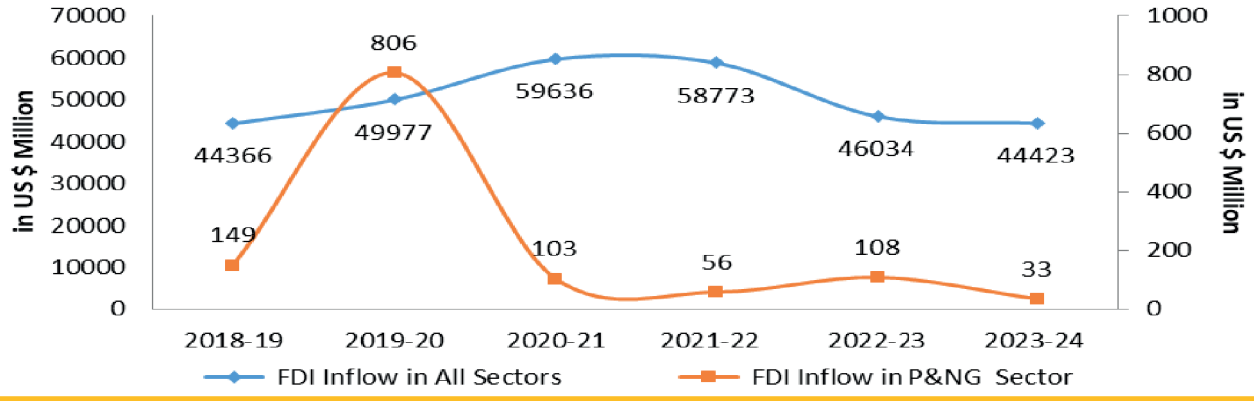


Foreign Direct Investment Inflows: The Government of India permits Foreign Direct Investment (FDI) across the hydrocarbon value chain covering the upstream, downstream and midstream sectors. Accordingly, the Government is encouraging participation of the private sector, including foreign companies in exploration, production and transportation network for petroleum and natural gas, in order to supplement the domestic investment as well as the efforts of the national oil companies in meeting the rising demand of oil and gas and reducing import dependence. 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.

During the year 2023-24, FDI inflow received was 33 USD Million in the P&NG Sector contributing 0.1% of total FDI inflow (70,954 USD million) in the economy.

The trend in **FDI Inflows in India** have been depicted as follows: -

Figure VI.10: Trend of FDI Equity Inflow in the India in all Sector vis-a-vis PNG Sector



As the global energy landscape evolves, India's ability to manage its import dependence while increasing exports will be key to ensuring energy security and economic stability. By effectively optimizing trade in these essential resources, India can not only meet its domestic energy demands but also enhance its role as a key player in the global energy market, driving sustainable growth and long-term prosperity.

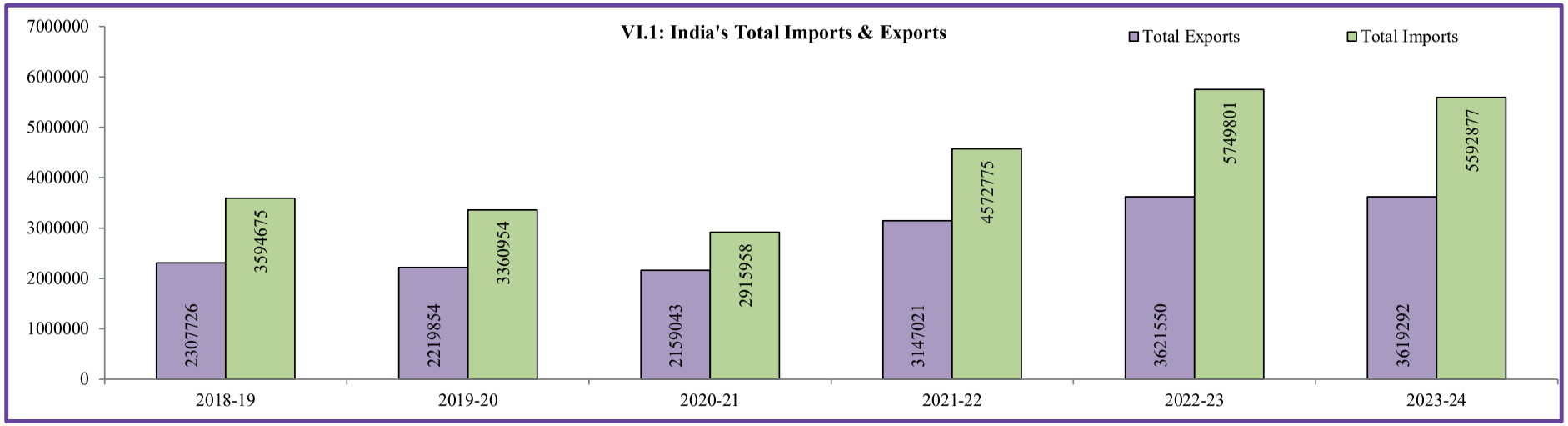
VI.1: India's Oil & Gas Trade and India's overall Trade Balance

(Value in ₹ Crore)

Year	India's Oil & Gas Trade*					India's Overall Trade					% of Oil & Gas trade to India's total trade	
	Exports	Imports	Trade Balance	% variation over preceding year		Exports	Imports	Trade Balance	% variation over preceding year			
				Exports	Imports				Exports	Imports	Exports	Imports
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2018-19	267697	896848	**-629152**	18.77	26.82	2307726	3594675	**-1286948**	17.95	19.78	11.60	24.95
2019-20	254018	842743	**-588725**	-5.11	-6.03	2219854	3360954	**-1141100**	-3.81	-6.50	11.44	25.07
2020-21	157168	569208	**-412041**	-38.13	-32.46	2159043	2915958	**-756914**	-2.74	-13.24	7.28	19.52
2021-22	331801	1078097	**-746296**	111.11	89.4	3147021	4572775	**-1425753**	45.76	56.82	10.54	23.58
2022-23	458729	1476226	**-1017497**	38.25	36.95	3621550	5749801	**-2113328**	15.08	25.74	12.67	25.67
2023-24 (P)	**394723**	**1295244**	**-900521**	**-13.95**	**-12.26**	**3619292**	**5592877**	**-1973585**	**-0.06**	**-2.73**	**10.91**	**23.16**

P: Provisional * Contains Crude, LNG & POL imports and POL exports

Source: PPAC & RBI/Ministry of Commerce



VI.2: Import / Export of Crude Oil and Petroleum Products

(Figures in TMT)

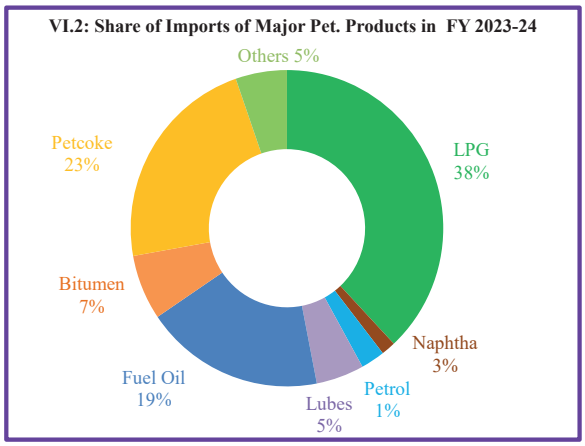
Import/Export	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Growth in 2023-24 over 2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crude Oil Import	**226498**	**226955**	**196461**	**212382**	**232700**	**234262**	**0.7**
LNG Imports	**21545**	**24417**	**25055**	**23417**	**19852**	**23996**	**20.9**
Total Imports of Petroleum Product	**33348**	**43788**	**43248**	**39017**	**44598**	**48693**	**9.2**
Product Imports							
LPG	13235	14809	16476	17043	18335	18514	1.0
Petrol	670	2146	1351	671	1069	717	-32.9
Naphtha	2082	1662	1199	237	897	1211	35.1
Aviation Turbine Fuel	259	65	0	0	0	0	0.0
Kerosene	0	0	3	0	0	0	0.0
Diesel	555	2796	648	43	322	42	-87.0
Lubes	2457	2675	2693	3058	2152	2412	12.1
Fuel Oil	1419	4583	6454	8980	8563	9053	5.7
Bitumen	877	1630	2055	2581	2797	3244	15.9
Petcoke	7926	10674	8256	4213	8664	10956	26.5
Others1	3869	2749	4112	2189	1799	2544	41.4
Total Imports in Oil & Gas Sector	**281391**	**295159**	**264763**	**274815**	**297151**	**306951**	**3.3**
Product Export							
LPG	417	463	452	513	540	525	-2.6
Petrol	12885	12710	11606	13482	13127	13472	2.6
Naphtha	6963	8897	6509	6861	5714	5275	-7.7
Aviation Turbine Fuel	7389	6906	3544	5186	7264	8579	18.1
Kerosene	19	176	15	14	11	11	0.5
Diesel	27931	31653	30576	32407	28496	28204	-1.0
Lubes	8	8	15	10	14	15	7.3
Fuel Oil	2197	1527	1177	1757	1841	2103	14.2
Bitumen	23	25	7	6	9	18	99.9
Petcoke/CBFS	1124	465	577	187	284	28	-90.3
Others2	2140	2854	2290	2330	3717	4362	17.4
Total Export of Petroleum Products	**61096**	**65685**	**56769**	**62755**	**61015**	**62593**	**2.6**
Net Import (Imports-Export)	**220295**	**229474**	**207995**	**212061**	**236136**	**244358**	**3.5**
Net Petroleum Product Export	**27747**	**21898**	**13521**	**23738**	**16417**	**13900**	**-15.3**

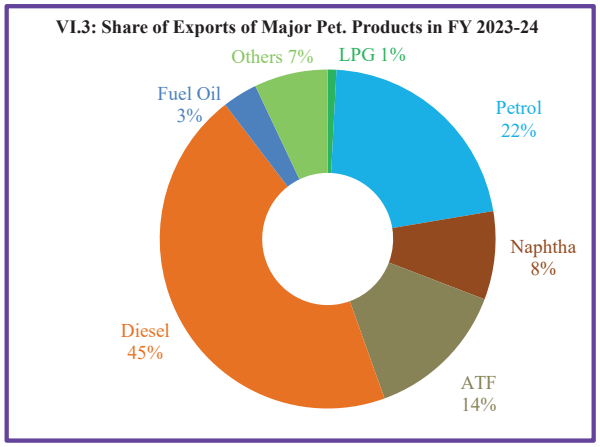
Note: Some figures mentioned as zero may containin significant figutres after decimal P: Provisional

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

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

Source: Petroleum Planning & Analysis Cell.





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

(Value in ₹ Crore)

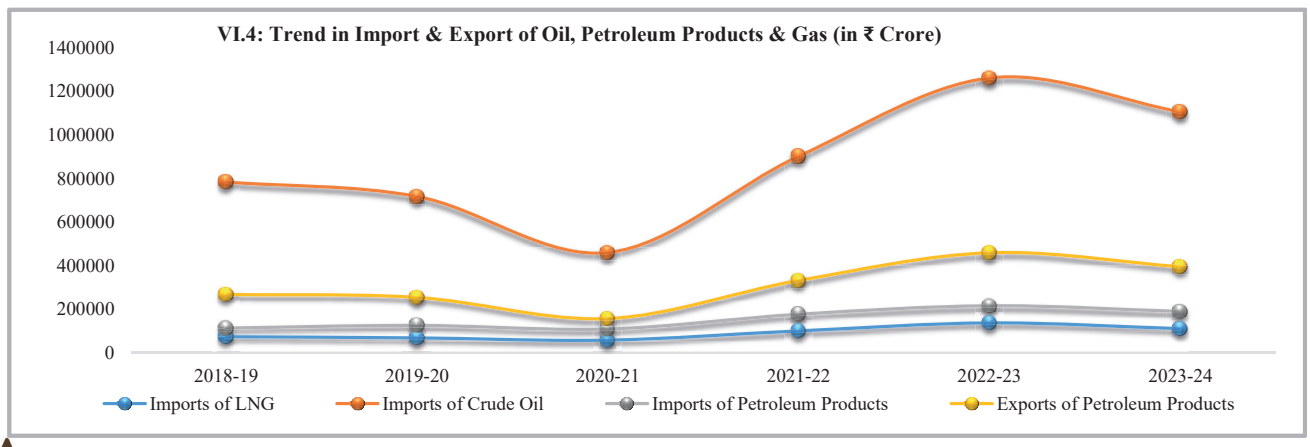
Import/Export	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Growth in 2023-24 over 2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crude Oil Import	**783183**	**717001**	**459779**	**901262**	**1260372**	**1105176**	**-12.3**
LNG Imports	**73888**	**68467**	**58329**	**100521**	**137210**	**110994**	**-19.1**
Total Imports of Petroleum Product	**113665**	**125742**	**109430**	**176835**	**215854**	**190069**	**-11.9**
Product Import							
LPG	49939	50347	53752	91468	107191	86361	-19.4
Petrol	3104	9610	4950	3895	8846	5500	-37.8
Naphtha	9665	6678	3844	1499	4781	6627	38.6
Aviation Turbine Fuel	1392	309	0	0	0	0	0.0
Kerosene	0	0	12	0	0	0	0.0
Diesel	2486	11619	1960	253	3584	312	-91.3
Lubes	13349	11869	12170	19704	18449	19129	3.7
Fuel Oil	4782	11791	14312	32815	33474	33669	0.6
Bitumen	2149	3634	4325	7678	9945	10875	9.3
Petcoke	10350	9713	6410	8203	18157	14310	-21.2
Others1	16449	10172	7695	11319	11425	13286	16.3
Total Imports in Oil & Gas Sector	**970736**	**911209**	**627537**	**1178618**	**1613435**	**1406238**	**-12.8**
Product Export							
LPG	1976	1970	1797	3214	3891	3215	-17.4
Petrol	60419	54512	36530	81649	102800	92957	-9.6
Naphtha	28893	31509	18643	37231	33357	27019	-19.0
Aviation Turbine Fuel	34030	28458	9377	27112	58598	57959	-1.1
Kerosene	98	560	48	77	100	82	-18.0
Diesel	123882	123919	81611	164741	230826	182400	-21.0
Lubes	106	96	93	114	205	200	-2.2
Fuel Oil	6537	3811	2318	6633	7834	7961	1.6
Bitumen	72	89	23	28	42	72	70.6
Petcoke/CBFS	3255	1096	292	553	648	23	-96.4
Others2	8429	7998	6436	10449	20427	22835	11.8
Total Export of Petroleum Products	**267697**	**254018**	**157168**	**331801**	**458729**	**394723**	**-14.0**
Net Import (Imports-Export)	**703040**	**657192**	**470369**	**846817**	**1154707**	**1011515**	**-12.4**
Net Petroleum Product Export	**154031**	**128276**	**47738**	**154966**	**242875**	**204655**	**-15.7**

Note: Some figures mentioned as zero may containin significant figutres after decimal P: Provisional

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

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

Source: Petroleum Planning & Analysis Cell.



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

(Value in Million US$)

Import/Export	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)	% Growth in 2023-24 over 2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crude Oil Import	**111915**	**101376**	**62248**	**120675**	**157531**	**133366**	**-15.3**
LNG Imports	**10558**	**9663**	**7881**	**13472**	**17114**	**13405**	**-21.7**
Total Imports of Petroleum Product	**16341**	**17689**	**14770**	**23656**	**26912**	**23046**	**-14.4**
Product Import							
LPG	7178	7070	7242	12235	13344	10412	-22.0
Petrol	445	1357	674	519	1094	663	-39.4
Naphtha	1391	941	518	199	593	800	34.8
Aviation Turbine Fuel	200	45	0	0	0	0	1450.0
Kerosene	0	0	2	0	0	0	0.0
Diesel	360	1632	265	34	454	38	-91.7
Lubes	1910	1673	1647	2642	2301	2310	0.4
Fuel Oil	696	1650	1936	4379	4202	4061	-3.4
Bitumen	309	510	586	1029	1237	1314	6.3
Petcoke	1494	1374	861	1097	2263	1729	-23.6
Others1	2358	1438	1038	1521	1425	1606	12.7
Total Imports in Oil & Gas Sector	**138814**	**128728**	**84899**	**157803**	**201557**	**169817**	**-15.7**
Product Export							
LPG	283	277	241	430	486	389	-19.9
Petrol	8641	7708	4977	10879	12868	11249	-12.6
Naphtha	4137	4439	2530	4984	4184	3262	-22.0
Aviation Turbine Fuel	4867	4021	1287	3661	7285	6994	-4.0
Kerosene	14	78	7	10	13	10	-20.8
Diesel	17675	17481	11132	22088	28861	22062	-23.6
Lubes	15	13	12	15	26	24	-6.8
Fuel Oil	923	537	313	890	973	959	-1.4
Bitumen	10	13	3	4	5	9	67.7
Petcoke/CBFS	463	155	39	74	81	3	-96.5
Others2	1208	1128	865	1402	2542	2756	8.4
Total Export of Petroleum Products	**38236**	**35848**	**21406**	**44438**	**57323**	**47717**	**-16.8**
Net Import (Imports-Export)	**100578**	**92880**	**63493**	**113365**	**144234**	**122100**	**-15.3**
Net Petroleum Product Export	**21895**	**18159**	**6636**	**20782**	**30411**	**24672**	**-18.9**

Note: Some figures mentioned as zero may containin significant figutres after decimal P: Provisional

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

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

Source: Petroleum Planning & Analysis Cell.

VI.5: Product-wise Volume of Imports by Public & Private Sector

(Figures in TMT)

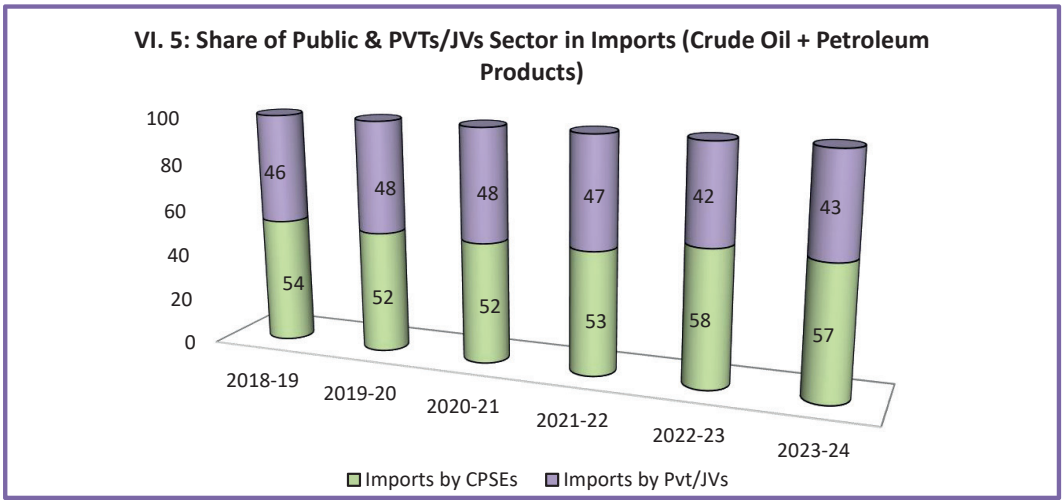
Products	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. PUBLIC SECTOR						
Crude Oil Imports	**124665**	**121102**	**105506**	**114318**	**141234**	**141153**
LPG	12919	14605	16412	17043	18335	18500
Petrol	670	2146	1343	671	1069	717
Naphtha	140	145	66	0	0	0
ATF	0	65	0	0	0	0
Kerosene	0	0	0	0	0	0
Diesel	462	2679	557	0	249	0
Lubes	102	158	71	81	106	132
Fuel Oil	225	122	188	114	8	29
Bitumen	0	7	23	5	52	68
Petcoke	0	0	0	0	0	0
Others1	62	43	18	155	35	1
Total PSUs Petroleum Product Imports	**14580**	**19969**	**18677**	**18069**	**19854**	**19447**
Total PSUs Imports (Oil+Products)	**139245**	**141071**	**124184**	**132387**	**161089**	**160600**
B. PRIVATE/JVs SECTOR						
Crude Oil Imports	101832	105852	90955	98063	91466	93108
LPG	316	204	64	0	0	14
Petrol	0	0	9	0	0	0
Naphtha	1941	1517	1133	237	897	1211
ATF	259	0	0	0	0	0
Kerosene	0	0	3	0	0	0
Diesel	93	117	91	43	73	42
Lubes	2355	2517	2622	2977	2047	2281
Fuel Oil	1195	4461	6267	8867	8555	9023
Bitumen	877	1623	2032	2575	2746	3176
Petcoke	7926	10674	8256	4213	8664	10956
Others1	3807	2706	4094	2034	1764	2543
Total PVTs Petroleum Product Import	**18769**	**23819**	**24570**	**20947**	**24744**	**29246**
Total PVTs Imports (Oil+Products)	**120601**	**129671**	**115525**	**119011**	**116210**	**122354**
Total Imports of Oil & Petroleum Products	**259846**	**270742**	**239709**	**251398**	**277298**	**282954**

Note: Some figures mentioned as zero may containin significant figutres after decimal P: Provisional

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

2. BORL merged with BPCL during FY 2022-23. Subsequently, data related to BORL is categorized as Joint Venture (JV) until FY 2021-22 and as Public Sector Undertaking (PSU) thereafter from 2022-23.

Source: Petroleum Planning & Analysis Cell.



VI.6: Product-wise Volume of Exports by Public & Private Sector

(Figures in TMT)

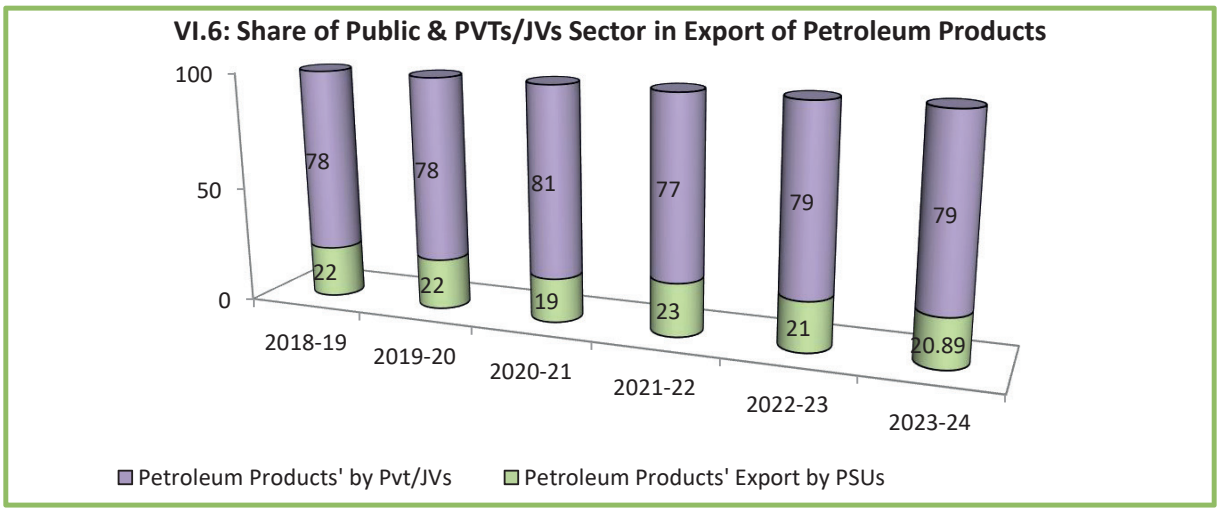
Products	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. PUBLIC SECTOR						
LPG	417	463	452	513	540	525
MS/ Petrol	873	690	842	1809	1703	782
Naphtha/ NGL	3101	4089	2537	2422	2506	2178
Aviation Turbine Fuel	1585	1228	575	903	1804	1861
SKO/ Kerosene	19	176	15	14	11	11
HSD/ Diesel	4845	5667	4720	6551	3455	4081
LDO	99	0	0	0	1	0
LOBS/ Lube Oil	8	8	15	10	14	15
Fuel Oil/LSHS	1849	1492	951	1147	1595	2103
Bitumen	23	25	7	6	9	18
Petcoke/CBFS	0	0	0	44	0	0
Others1	494	329	537	778	1243	1500
Total PSUs Exports of Petroleum Products	**13312**	**14168**	**10649**	**14197**	**12881**	**13074**
B. PRIVATE/JVs SECTOR						
MS/ Petrol	12012	12020	10764	11674	11424	12690
Naphtha/ NGL	3862	4808	3972	4439	3208	3097
Aviation Turbine Fuel	5804	5678	2970	4283	5460	6719
HSD/ Diesel	22988	25986	25856	25856	25039	24123
Fuel Oil/LSHS	348	35	227	610	246	0
Petcoke/CBFS	1124	465	577	143	284	28
Others1	1646	2525	1753	1553	2473	2862
Total PVTs Exports of Petroleum Products	**47783**	**51517**	**46119**	**48557**	**48134**	**49519**
Total Exports of Petroleum Products	**61096**	**65685**	**56769**	**62755**	**61015**	**62593**

Note: Some figures mentioned as zero may containin significant figutres after decimal P: Provisional

1: Other exports include VGO, Benzene, MTO & Sulphur.

2. BORL merged with BPCL during FY 2022-23. Subsequently, data related to BORL is categorized as Joint Venture (JV) until FY 2021-22 and as Public Sector Undertaking (PSU) thereafter from 2022-23.

Source: Petroleum Planning & Analysis Cell.



VI.7: Product-wise Value of Imports by Public & Private Sector

(Value in ₹ Crore)

Products	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. PUBLIC SECTOR						
Crude Oil Imports	**443629**	**396186**	**254432**	**492179**	**786911**	**671938**
LPG	48636	49617	53501	91465	107187	86283
Petrol	3104	9610	4911	3894	8845	5499
Naphtha	668	616	207	0	0	0
ATF	0	309	0	0	0	0
Diesel	2016	11116	1654	0	2925	0
Lubes	553	753	361	563	919	1069
Fuel Oil	761	345	508	371	54	122
Bitumen	0	18	78	16	210	422
Others1	439	315	112	772	310	15
Total PSUs Petroleum Product Imports	**56178**	**72699**	**61332**	**97082**	**120452**	**93410**
Total PSUs Imports (Oil+Products)	**499808**	**468885**	**315763**	**589260**	**907363**	**765349**
B. PRIVATE/JVs SECTOR						
Crude Oil Imports	**339553**	**320815**	**205347**	**409083**	**473461**	**433237**
LPG	1303	730	251	3	4	78
Petrol	0	0	39	1	1	1
Naphtha	8997	6062	3637	1499	4781	6627
ATF	1392	0	0	0	0	0
Kerosene	0	0	12	0	0	0
Diesel	470	503	306	253	659	312
Lubes	12796	11116	11809	19141	17530	18060
Fuel Oil	4021	11446	13804	32444	33420	33547
Bitumen	2149	3615	4248	7662	9735	10452
Petcoke	10350	9713	6410	8203	18157	14310
Others1	16009	9857	7583	10548	11115	13271
Total PVTs Petroleum Product Import	**57487**	**53042**	**48098**	**79753**	**95402**	**96658**
Total PVTs Imports (Oil+Products)	**397041**	**373857**	**253445**	**488836**	**568863**	**529896**
Total Imports of Oil & Petroleum Products	**896848**	**842743**	**569208**	**1078097**	**1476226**	**1295244**

Note: Some figures mentioned as zero may containin significant figutres after decimal P: Provisional

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

2. BORL merged with BPCL during FY 2022-23. Subsequently, data related to BORL is categorized as Joint Venture (JV) until FY 2021-22 and as Public Sector Undertaking (PSU) thereafter from 2022-23.

Source: Petroleum Planning & Analysis Cell.

VI.8: Product-wise Exports by Public & Private Sector

(Value in ₹ Crore)

Products	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. PUBLIC SECTOR						
LPG	1976	1970	1797	3214	3891	3215
MS/ Petrol	4237	3123	2768	11446	14000	5827
Naphtha/ NGL	12698	14448	7205	13074	14262	11145
Aviation Turbine Fuel	7317	5083	1566	5282	14555	12623
SKO/ Kerosene	98	560	48	77	100	82
HSD/ Diesel	22097	23068	12790	35448	30265	28049
LDO	364	0	0	0	13	0
LOBS/ Lube Oil	106	96	93	114	205	200
Fuel Oil/LSHS	5648	3700	1876	4213	6394	7961
Bitumen	72	89	23	28	42	72
Petcoke/CBFS	0	0	0	33	0	0
Others1	1528	1004	1541	3845	9078	9979
Total PSUs Exports of Petroleum Products	**56140**	**53141**	**29708**	**76775**	**92805**	**79154**
B. PRIVATE/JVs SECTOR						
MS/ Petrol	56182	51389	33761	70203	88800	87130
Naphtha/ NGL	16195	17061	11437	24157	19095	15873
Aviation Turbine Fuel	26713	23375	7811	21829	44043	45336
HSD/ Diesel	101422	100851	68821	129293	200549	154350
Fuel Oil/LSHS	889	111	443	2420	1440	0
Petcoke/CBFS	3255	1096	292	520	648	23
Others1	6901	6994	4894	6604	11348	12856
Total PVTs Exports of Petroleum Products	**211557**	**200876**	**127460**	**255026**	**365923**	**315569**
Total Exports of Petroleum Products	**267697**	**254018**	**157168**	**331801**	**458729**	**394723**

Note: Some figures mentioned as zero may containin significant figutres after decimal P: Provisional

1: Other exports include VGO, Benzene, MTO & Sulphur.

2. BORL merged with BPCL during FY 2022-23. Subsequently, data related to BORL is categorized as Joint Venture (JV) until FY 2021-22 and as Public Sector Undertaking (PSU) thereafter from 2022-23.

Source: Petroleum Planning & Analysis Cell.

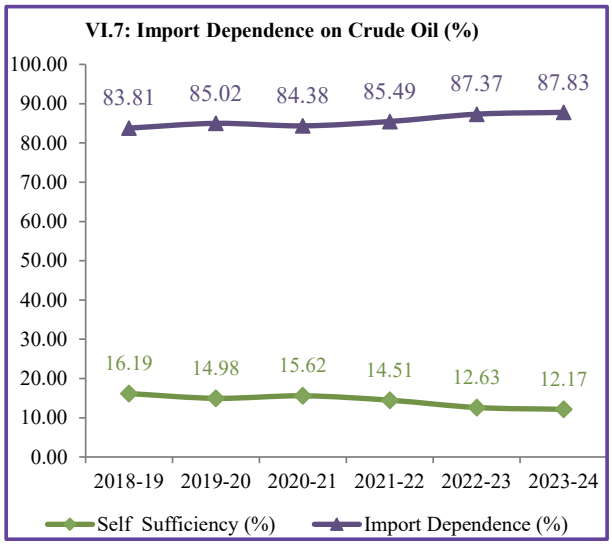
VI.9: Oil & Gas Import Dependency

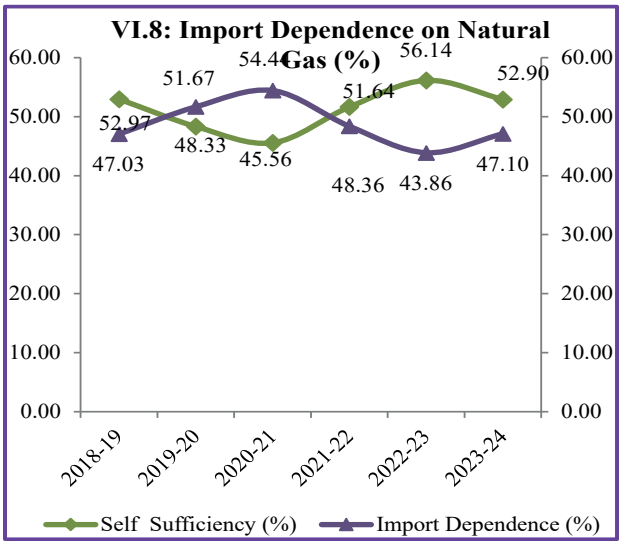
Elements	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Import dependence on crude oil (in MMT)						
Total Consumption	213.22	214.13	194.30	201.70	223.02	234.26
Indigenous crude oil processing	31.72	29.28	28.01	27.02	26.45	26.83
Products from Indigenous crude	29.59	27.31	26.14	25.21	24.68	25.04
Products from Fractionators	4.93	4.76	4.21	4.05	3.49	3.48
Total Indigenous production (4+5)	34.52	32.07	30.35	29.26	28.17	28.52
Self Sufficiency (%)	16.19	14.98	15.62	14.51	12.63	12.17
Import Dependence (%)	**83.81**	**85.02**	**84.38**	**85.49**	**87.37**	**87.83**
Import dependence on natural gas (in BCM)						
Total Consumption	60.60	62.61	60.98	64.16	59.97	67.51
Indigenous gas production	32.10	30.26	27.78	33.13	33.66	35.72
Import of LNG	28.55	32.35	33.20	31.03	26.30	31.80
Self Sufficiency (%)	52.97	48.33	45.56	51.64	56.14	52.90
Import Dependence (%)	**47.03**	**51.67**	**54.44**	**48.36**	**43.86**	**47.10**
Import dependence on oil and oil equivalent gas (O+OEG)(in MMTOE)						
Total Consumption	289.33	293.65	269.23	280.34	299.01	318.59
Indigenous O+OEG production	69.10	64.63	60.31	64.49	63.86	66.28
Self Sufficiency (%)	**23.88**	**22.01**	**22.40**	**23.00**	**21.36**	**20.80**
Import Dependence (%)	76.12	77.99	77.60	77.00	78.64	79.20

Note: 1 BCM of Natural gas =1 Mtoe P:Provisional

1. SION norms has been taken as 93.3% of crude oil processed for working out products output from indigenous crude oil processed.
2. For converting production of petroleum products from fractionators, SION norms has been taken as 93.3%.
3. Net production and consumption of natural gas is inclusive of internal gas consumption but excluding flare and loss.

Source: Petroleum Planning & Analysis Cell.





VI.10: Annual Growth of Foreign Direct Investment Equity Inflows

Year	FDI Equity Inflow in P&NG Sector								% share of P&NG in All sector's FDI	FDI Equity Inflow in All Sectors		FDI Inflow in All Sectors	% FDI Growth in All Sector
	in ₹ Crore	in US $ Million	in ₹ Crore	in US $ Million	in ₹ Crore	in US $ Million	in ₹ Crore	in US $ Million		in ₹ Crore	in US $ Million	in US $ Million	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2018-19	33	5	573	84	411	61	1017	149	0.3	309867	44366	62001	1.7
2019-20	317	45	89	12	5559	749	5965	806	1.6	353557	49977	74391	20.0
2020-21	36	5	67	9	664	89	767	103	0.2	442569	59636	81973	10.2
2021-22	29	4	13	2	378	51	420	56	0.1	437188	58773	84835	3.5
2022-23	0	0	125	16	751	92	876	108	0.2	367435	46034	70970	-13.4
2023-24 (P)	0	0	14	2	256	31	270	33	0.1	367899	44423	70954	-16.4

Note: Total FDI inflow includes equity inflow, equity capital of unincorporated bodies, re-invested earnings, and other capital. P: Provisional

"Source: Foreign Direct Investment Cell, Department for Promotion of Industry and Internal Trade

"

Figure VI.9: Sectorial Share of FDI Equity Inflow during 2023-24

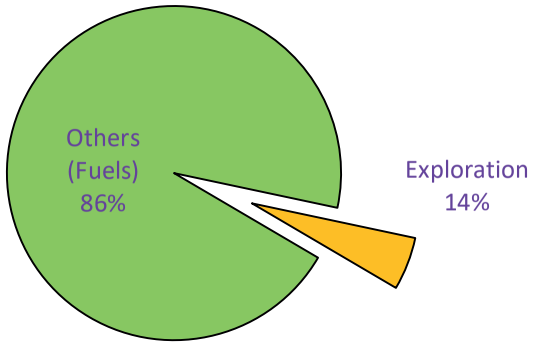
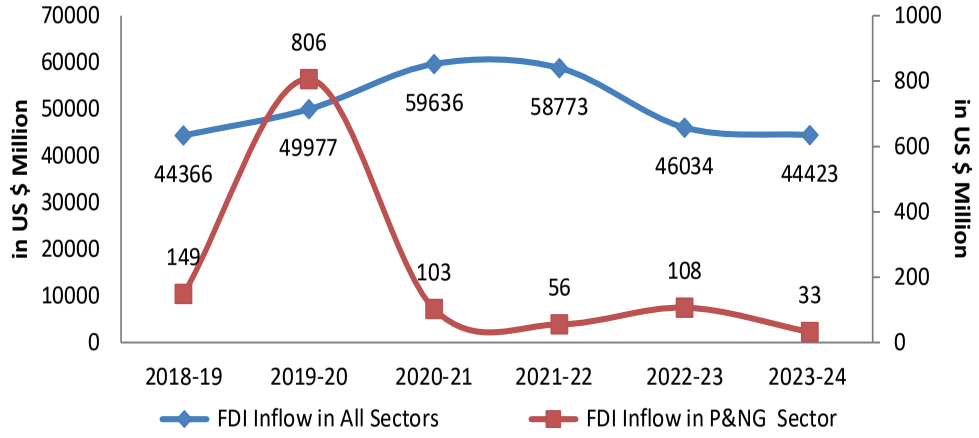


Figure VI.10: Trend of FDI Equity Inflow in the India in all Sector vis-a-vis PNG Sector



CHAPTER-VII



Biofuels

Chapter Highlights



Ethanol Blending with Petrol by Oil's CPSEs during Ethanol Supply Year (ESY) 2023-24 (upto Oct,2024) was 14.60%. Ethanol blended in the country during ESY 2023-24 was **707.38 Crore** Litres which is **62.9%** higher as compared to **433.6 crore** litres in ESY 2022-23.

During the Ethanol Supply Year (ESY) 2023-24, total **₹32,833** forex currency save by the ethanol blending. During ESY 2022-23 total **₹24,368 crores** forex currency saved by ethanol blending which is **2.4%** higher than the revenue saved during ESY 2021-22 was **₹23,788 cr**.





Uttar Pradesh consistently had high blending rates, starting from **8.9%** in 2018-19 to **14.79%** in 2023-24, being a major sugarcane-producing state. Bihar improved from **6.6%** in 2018-19 to **14.91%** in 2023-24. This is largely due to government efforts to enhance ethanol production in sugarcane and grain surplus states.

Ethanol received by Oil's CPSEs under the Ethanol blending Programme during ESY 2023-24 was **674.39 crore** litres which is 33.2% higher as compared to **506.42 crore** litres in ESY 2022-23. IOCL consistently received the highest volumes, rising from **84.11 crore liters** in ESY-2018-19 to **294.25 crore liters** in ESY-2023-24, accounting for **43.6%** of the total share.





Bio-Diesel Blending with Diesel by Oil's CPSEs during FY 2022-23 was **43.99 cr. litres**. Total number of Retail Outlets selling Biofuels blended Petrol/Diesel during 2023-24 was 74260 which is increased by **3.7 %** as compared to 71615 in 2022-23.

Total **82 CBG plants** commissioned and initiated sale of CBG as on 01.12.2024 and Sales of CBG during 2023-24 was **22517 Tons**.



INTRODUCTION

India stands as the world's third-largest energy consumer, with a substantial portion of its energy needs met through oil—a resource predominantly sourced through imports. This reliance presents significant challenges to energy security and contributes to a considerable outflow of foreign currency. Moreover, as India's share in global energy consumption is projected to double by 2050, the rising energy demand, coupled with this high dependency on imports, exacerbates the risks associated with energy security. The extensive use of fossil fuels not only heightens these risks but also results in elevated carbon emissions, which contribute to environmental degradation and pose considerable health risks.



Domestically produced biofuels offer a promising solution to mitigate these challenges. By blending biofuels with conventional fossil fuels, India has the potential to reduce its reliance on oil imports, thereby enhancing energy security and promoting environmental sustainability. Furthermore, biofuels align strategically with key government initiatives, including *Make in India*, *Swachh Bharat Abhiyan*, and *Skill Development*. Their production and integration could play a pivotal role in realizing ambitious national objectives, such as doubling farmers' income, reducing import dependency, generating employment, and converting waste into wealth.

Ethanol Blended Petrol (EBP) Programme: The Government has been implementing Ethanol Blended Petrol (EBP) Programme wherein Oil Marketing Companies (OMCs) sell petrol blended with ethanol at varying percentages as per availability of ethanol and compatible vehicles. This Programme currently envisages achievement of the target of 20% ethanol blending in petrol by 2025-26.



In order to achieve 20% ethanol blending target by ESY 2025-26, the Government has taken several measures which includes a detailed Roadmap for Ethanol Blending in India; expansion of feedstock for production of ethanol; remunerative price for procurement of ethanol under the EBP Programme; lowered GST rate to 5% on ethanol for EBP Programme; amendment in Industries (Development & Regulation) Act for free movement of ethanol across states for blending; interest subvention scheme for enhancement and augmentation of ethanol production capacity in the country; regular floating of Expression of Interest (EoI) by Public Sector OMCs for procurement of ethanol.

Ethanol procurement by Public Sector OMCs has increased from 38 crore litres during Ethanol Supply Year (ESY) 2013-14 (Dec, 2013 to Nov, 2014) to ~707 crore litres during current ESY 2023-24. The average blending has improved from 1.53% to 13.8% in the corresponding period.

There has been Consistent Increase in Ethanol Blending Across all Central Public Sector Enterprises (CPSEs), ethanol blending with petrol has shown a consistent upward trend, reflecting the increasing efforts to meet national biofuel policy targets. ESY wise procurement/ blending performance is tabulated below:

Ethanol Supply Year (ESY)#	Ethanol procured/ Blended (in crore litres)	Ethanol Blending Percentage (in %)
2018-19	191.2	5.0%
2019-20	170.53	5.0%
2020-21	302.32	8.10%
2021-22	433.60	10.02%
2022-23	508.50	12.06%
2023-24	**707.38**	**14.60%**

#Ethanol Supply Year (1st Dec to 30th Nov). ESY 22-23 is for the period of Dec' 22 to Oct' 23. From ESY 23-24, ESY period has been changed to 1st Nov to 31st Oct.

During last 10 years, Ethanol blending has gone up from just over 1.5% to more than 14% in ESY 2023-24. OMC are currently selling E15 (15% ethanol blended petrol) pan India and E20 at select Retail Outlets.

State-wise Ethanol Blending: Ethanol blending with petrol by CPSEs has seen a steady increase across all states from 2018-19 to 2023-24. Across most states, the blending percentages show a consistent upward trend, driven by policy measures, improved ethanol availability, and the expansion of blending infrastructure. Uttar Pradesh consistently had high blending rates, starting from 8.91% in 2018-19 to 14.79% in ESY 2023-24, being a major sugarcane-producing state. Bihar improved from 6.61% in 2018-19 to an expected 14.91% in 2023-24. This is largely due to government efforts to enhance ethanol production in sugarcane and grain surplus states. Telangana saw a strong rise, from 5.37% in 2018-19 to 14.22% in 2023-24 **(details in Table IX.3).**

Biodiesel Blending Programme: National Policy on Biofuels, 2018 has set a target of 5% Biodiesel blending by 2030. At present, OMCs are not involved in in-house production of Biodiesel. All type of Biodiesel are being sourced through industry tender from existing domestic producers.

OMCs started Biodiesel Blending on 10th August, 2015 post which the procurement by OMCs has increased from 1.19 crore litres during 2015-16 to 32.52 crore litres during April-September'24.

The details of Biodiesel procured **(details in IX.4)** by the OMCs are as follows:

Year	Biodiesel Procured, Cr Lit
2018-19	8.08
2019-20	10.41
2020-21	0.52
2021-22	0.08
2022-23	6.06

2023-24	43.99
2024-25 (till Sep'24)	32.52
* Biodiesel blended sale started by the OMCs w.e.f 10.08.15	

Number of Retail Outlets Selling Biofuel-blended Petrol/Diesel: There has been **Steady Growth in Retail Outlets**, the total number of retail outlets selling biofuel-blended petrol/diesel increased from **46,069 in 2018-19** to **74,260 in 2023-24**, more than doubling over the six-year period. IOCL consistently maintained the largest number of outlets, growing from **23,622 in 2018-19** to **32,399 in 2023-24**, accounting for **43.63%** of the total.

Total ethanol received by CPSE OMCs rose from 188.57 crore liters in ESY: 2018-19 to 545.40 crore liters in ESY: 2023-24 **(details in IX.8).**

State-wise Ethanol Producing Plants and Capacity (as on 31.3.2024): As of March 31, 2024, India has a total of 464 ethanol-producing distilleries with a combined capacity of 46,236 KLPD (kilo liters per day). Maharashtra leads with 30 grain-based distilleries (1,565 KLPD) and 135 molasses-based distilleries (10,670 KLPD), totaling 165 distilleries and 12,235 KLPD capacity **(detail in IX.9).**

Following schemes/ policy measures have been taken to augment supplies of ethanol:

Government is providing multiple financial assistance to promote availability of ethanol for blending in Petrol including ethanol from surplus sugarcane, damaged food grains. Long term offtake agreements are also being done by OMCs to ensure offtake of ethanol.

PM JI-VAN Yojana: To attract greater investment and the latest advancements in 2G ethanol capacity in the country, govt is promoting development and demonstration of technologies for production of 2G Ethanol under PM JI-VAN Yojana Under the scheme, govt. is providing financial assistance of ₹1800 Cr for setting up 12 Commercial Projects and ₹150 Cr. for 10 Demonstration Projects.

Financial Assistance for Biomass Aggregation Machinery (BAM)- CBG: Total financial outlay of ₹ 564.75 Cr (FY 23-24 to FY 26-27) to 100 CBG producers. There has been significant growth in the CBG sector; the following data reflects expanding infrastructure and increasing adoption. No. of CBG Plants commissioned have Increased from 46 plants in 2022-23 to 62 plants in 2023-24. The number of ROs selling CBG grew from 113 to 177. Total CBG sales increased from 11,227 tons in 2022-23 to 19,724 tons in 2023-24 **(details in IX.7).**

Development of Pipeline Infrastructure (DPI) for Injection of CBG in CGD net: Total financial outlay is of ₹ 994.50 Cr for the period of FY 2024-25 to FY 2025-26 has been made for providing Subsidy for laying pipeline between CBG plant and CGD network for upliftment of biogas. Scheme was made live on 1st Sep'24.

Global Biofuels Alliance (GBA): The establishment of the Global Biofuels Alliance (GBA) aims to address major challenges and realizing the potential of biofuels. The Alliance intends to expedite the global uptake of biofuels through facilitating capacity building exercises, technical support for national programs and promoting policy lessons-sharing, technology advancements, intensifying utilization of sustainable biofuels through the participation of wide spectrum of stakeholders. The Alliance will also work as a central repository of knowledge and an expert hub. These activities of GBA are expected to increase global biofuel market in the coming years.

Foreign Currency Savings from Ethanol Blending (2018-19 to 2023-24): The volume of ethanol blended by PSU OMCs increased significantly from 1.91 million KL in 2018-19 to 5.08 million KL in 2022-23 and is projected to reach 4.14 million KL by mid-2024. The total motor spirit saved due to blending rose from 1.35 million tons (TMT) in 2018-19 to 3.61 million TMT by 2022-23, demonstrating the contribution of ethanol blending in reducing petrol consumption. Because of this there is Significant Increase in Foreign Currency Savings: Foreign currency savings grew substantially from ₹5,555 crore in 2018-19 to ₹23,757 crore in 2022-23, driven by the increased use of domestically produced ethanol. For Nov 2023 - Oct 2024, an additional ₹32,833 crore in savings has been generated. The continuation of ethanol blending at these levels is expected to contribute to further savings, aiding in reducing India's dependency on oil imports and enhancing energy self-reliance **(details in Table IX.2).**

Compressed Bio Gas (CBG): CBG projects not only contribute to energy security but also support climate change mitigation efforts, promote a circular economy, save foreign exchange, and foster sustainable development.

Sustainable Alternative Towards Affordable Transportation (SATAT) initiative: The Ministry of Petroleum and Natural Gas (MoPNG) has introduced SATAT initiative in October, 2018. The SATAT initiative aims to create an ecosystem for CBG production, where Oil and Gas Marketing Companies (OGMCs) invite Expressions of Interest (EOI) from potential entrepreneurs to procure CBG at in assured prices along with long-term agreements for the offtake of CBG.

Key enablers for CBG sector:

(a) Assured price and long-term agreements for CBG offtake.

(b) Revised CBG procurement pricing (from June 2022), linking it to the Retail Selling Price (RSP) of CNG. The minimum procurement price is set at Rs. 54/- per kg plus GST.

(c) MoPNG guidelines for synchronizing CBG production with City Gas Distribution (CGD) networks, with GAIL mandated to operationalize the CBG-CGD synchronization scheme.

(d) Exemption from excise duty on GST-paid on compressed bio-gas in blended CNG.

(e) Financial support from MNRE under the "Waste to Energy Programme" and additional support from MoHUA for setting up CBG projects using municipal solid waste (MSW).

(f) Priority sector lending for CBG projects, with banks like Canara Bank and State Bank of India offering loan products for CBG financing.

(g) Crop Residue Management Guidelines (CRM-23-24), providing financial assistance to establish crop residue supply chains.

(h) A policy to promote organic fertilizers, offering Market Development Assistance (MDA) of Rs. 1500/MT for Fermented Organic Manure (FOM). Organic Manure (FOM)/Liquid Fermented Organic Manure (LFOM).

(i) Categorization of CBG plants under the White category, subject to conditions of utilizing FOM/LFOM as fertilizer on land and not discharging any waste water.

(j) State Level Committees has been constituted in Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Haryana, Karnataka, Maharashtra, Odisha, Punjab, Tripura, Uttar Pradesh, West Bengal.

(k) Carbon Credit Trading Scheme, 2023, and the inclusion of CBG under the Paris Agreement's Article 6.2 Mechanism for trading carbon credits.

Recent steps taken by Government of India in the CBG Sector:

(1) **Establishment of CBG Projects by Organizations under MoPNG:** Organizations under MoPNG have committed to setting up 195 CBG projects using their own investments.

(2) **Financial Assistance for Biomass Aggregation Machinery (BAM):** The government has introduced a scheme to provide financial assistance to CBG producers for procuring biomass aggregation machinery to support biomass collection. This initiative aims to support the operation of 100 biomass-based CBG plants by FY 2026-27. Eligible projects can receive up to 50% financial assistance for BAM procurement, capped at Rs. 9 crore per project.

(3) **Development of Pipeline Infrastructure (DPI) for CBG-CGD Synchronization:** The Government has introduced a Scheme for Development of Pipeline infrastructure for injection of Compressed Bio Gas (CBG) in City Gas Distribution (CGD) network, with a financial outlay of Rs. 994.50 crore during FY 2023-24 to FY 2025-26. The scheme provides financial assistance for creating grid connectivity for 100 CBG projects, reducing logistics costs. Eligible CBG projects must be registered on the GOBARdhan portal and have a gas supply agreement with a CGD entity. Financial assistance will be provided for laying pipeline infrastructure, calculated at estimated cost of Rs. 1 crore per km for steel pipelines and Rs. 0.15 crore per km for MDPE pipelines. Financial Assistance (FA) for laying of pipeline (Steel/MDPE) up to 50 Km would be provided @ 50% of the project cost or Rs. 0.5 crore per km whichever is less. FA for Pipelines above 50 km

would be provided @ 50% of the additional cost of laying pipeline between 50-75 km or Rs. 0.15 crore per km whichever is less. The scheme covers up to 75 km of pipeline, with a financial cap of Rs. 28.75 crore per project.

(4) **Compressed Biogas Obligation (CBO):** To promote CBG production and consumption, the National Biofuels Coordination Committee (NBCC) has approved the phase-wise mandatory selling of CBG into CNG (transport) and PNG (domestic) segments starting FY 2025-26. The CBG obligation is set to start at 1% in 2025-26 and gradually increase to 5% by FY 2028-29.

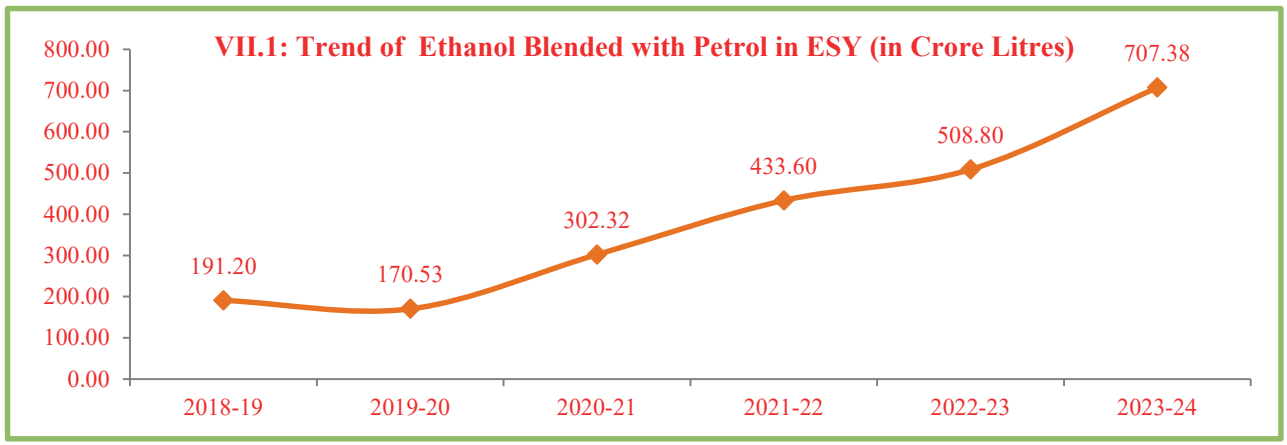
Progress Under SATAT:

- As of 30th November, 2024, a total of 82 CBG projects (including 6 by OGMCs) have been commissioned. An additional 72 CBG plants (including 13 OGMC projects) are currently at various stages of construction.
- Under CBG-CGD (City Gas Distribution) synchronization scheme GAIL has signed 77 Tri-partite agreements. CBG sale has been started in 51 Geographical Areas of CGD Network.
- So far 8 CBG plants have been connected with CGD network through pipeline.
- Sale of CBG has been initiated from around 250 Retail Outlets.
- During FY 2023-24 OGMCs have procured 19,724 Ton CBG. In FY 2024-25 till 30th November, 2024 OGMCs have procured 23,578 Ton of CBG. During November, 2024 around 3000 MT CBG has been procured by OGMCs.

VII.1: Ethanol Blended with Petrol

Company Name	Unit	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
As per Financial Year-wise							
IOCL	Crore Litres	79.80	74.90	93.33	136.10	202.26	247.50
	%	4.96	4.44	5.96	7.97	10.57	12.69
BPCL	Crore Litres	49.96	45.72	59.51	97.26	144.22	166.42
	%	4.79	4.17	5.86	8.68	10.67	11.69
HPCL	Crore Litres	53.50	46.10	58.84	95.03	129.60	156.76
	%	5.50	4.90	6.19	9.03	10.59	12.00
Total CPSEs	Crore Litres	183.26	166.72	211.68	328.39	476.08	570.68
	%	5.05	4.50	6.0	8.46	10.58	12.19
As per Ethanol Supply Year (ESY) Year-wise							
IOCL	Crore Litres	84.89	78.02	128.96	184.64	138.35	297.01
	%	5.00	5.10	8.00	10.02	11.75	14.74
BPCL	Crore Litres	51.98	45.60	87.07	130.42	153.77	212.82
	%	4.70	4.70	7.99	10.01	12.00	14.40
HPCL	Crore Litres	54.34	46.91	86.28	118.54	87.01	197.56
	%	5.30	5.10	8.36	10.04	11.75	14.60
Total CPSEs	Crore Litres	191.20	170.53	302.32	433.60	508.80	707.38
	%	5.00	5.00	8.10	10.02	11.74	14.60

Note: ESY (Ethanol Supply Year) from ESY 2022-23, ESY has been changed to 1st Nov to 31st Oct and ESY 22-23 is for the period of Dec'22 to Oct'23. Data for the ESY 2023-24 is upto Oct,2024. P: Provisional



VII.2: Saving of Foreign Currency by Ethanol Blending

Year	Ethanol blended (PSU OMCs) in KL	Blended Motor Spirit Sale (Actual) PSU OMC in TMT	Motor spirit saved in TMT	Petrol FOB price $/bbl	RBI (Rs/$)	Approx total revenue saved (Cr)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2018-19	1912048	27204	1355	68.53	70.37	5555
2019-20	1705290	24194	1209	46.64	73.86	3539
2020-21	3023401	26456	2143	75.58	73.75	10152
2021-22	4335945	30654	3073	110.9	78.00	22594
2022-23	5088836	29895	3607	93.98	82.46	23757
2023-24 (P)	7073756	34338	5013	89.94	83.45	32833

Note: ESY (Ethanol Supply Year) from ESY 2022-23, ESY has been changed to 1st Nov to 31st Oct and ESY 22-23 is for the period of Dec'22 to Oct'23. Data for the ESY 2023-24 is upto Oct,2024. P: Provisional

Source: PPAC

VII.3: State-wise Percentage of Ethanol Blended with Petrol (Sales) by CPSEs

(Figures in %)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24(P)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
	As per Financial Year-wise						As per Ethanol Supply Year (ESY) Year-wise					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Andhra Pradesh	6.13	4.76	4.78	8.33	10.27	11.87	6.09	3.36	8.46	10.16	11.92	14.29
Andman & Nikobar	0.00	0.00	0.00	0.00	0.00	3.53	0.00	0.00	0.00	0.00	0.00	7.23
Arunachal Pradesh	0.00	0.00	0.00	0.44	8.67	13.05	0.00	0.00	0.00	5.96	12.04	15.26
Assam	0.00	0.00	0.00	4.51	8.31	13.11	0.00	0.00	0.00	5.78	12.13	15.20
Bihar	6.45	6.56	8.80	7.94	11.49	12.78	6.61	8.19	8.04	10.56	12.41	14.91
Chandigarh	5.90	6.00	8.99	9.49	10.40	12.50	6.73	8.87	8.88	9.82	11.80	14.55
Chhattisgarh	1.21	4.22	7.67	8.91	9.42	11.56	3.76	6.22	8.39	9.31	11.72	13.82
Dadar & Nagar Haveli and Daman & Diu	-	-	6.43	8.69	10.94	11.96	-	-	8.90	10.04	12.25	14.29
Delhi	8.53	5.48	9.90	9.02	10.59	12.39	6.63	7.28	9.35	10.42	12.00	14.96
Goa	7.50	3.19	6.14	8.76	9.67	11.33	4.62	4.83	8.96	9.27	11.96	14.16
Gujarat	4.76	5.07	7.86	9.65	11.05	12.07	5.95	6.35	9.48	10.47	12.11	14.33
Haryana	6.39	8.10	9.74	8.78	11.35	12.55	8.48	9.53	9.72	10.53	12.06	14.80
Himachal Pradesh	4.12	4.60	9.13	8.36	9.36	12.86	4.84	7.86	9.40	9.18	11.44	15.17
Jammu & Kashmir	0.00	0.00	0.02	8.49	11.22	12.40	0.00	0.00	6.99	9.81	12.13	14.54
Jharkhand	0.00	0.11	5.20	8.86	10.52	12.69	0.10	3.77	6.11	8.81	12.32	14.89
Karnataka	7.71	6.62	7.60	9.64	11.27	12.35	6.95	7.26	8.97	10.51	12.27	14.55
Lakshadweep	0.00	0.00	0.00	0.00	0.00	11.40	0.00	0.00	0.00	0.00	9.16	13.20
Kerala	0.19	0.11	0.98	6.44	10.36	11.03	0.16	0.05	4.41	9.67	11.52	13.99
Ladakh	0.00	0.00	0.00	0.81	2.51	10.11	0.00	0.00	4.11	2.07	7.43	14.32
Madhya Pradesh	3.06	4.54	7.42	9.17	10.60	12.28	5.09	6.32	8.58	10.25	12.13	14.47
Maharashtra	9.07	5.73	6.93	9.10	10.85	11.94	6.64	5.67	8.98	10.48	12.25	14.49
Manipur	0.00	0.00	0.00	6.96	7.81	13.46	0.00	0.00	0.00	5.27	11.61	15.56
Meghalaya	0.00	0.00	0.00	6.02	8.92	12.72	0.00	0.00	0.00	6.30	11.99	14.59
Mizoram	0.00	0.00	0.00	2.95	8.10	12.52	0.00	0.00	0.00	5.73	11.82	14.06
Nagaland	0.00	0.00	0.00	0.35	7.30	12.94	0.00	0.00	0.00	4.31	11.96	15.24
Odisha	0.12	0.15	1.03	5.86	9.67	12.89	0.13	0.37	3.99	9.04	11.58	15.47
Pondicherry	0.73	0.73	1.76	5.98	9.43	11.48	1.01	0.41	4.37	8.84	11.75	14.02
Punjab	6.44	7.32	9.51	9.41	10.35	12.91	7.75	9.14	9.92	10.33	12.06	15.21
Rajasthan	0.45	1.75	2.43	8.78	10.45	12.12	2.02	1.41	6.73	10.03	12.01	14.65
Sikkim	0.00	0.00	0.00	1.34	5.79	12.49	0.00	0.00	0.00	4.00	10.39	14.21
Tamil Nadu	1.22	1.45	3.16	7.03	10.26	11.87	2.07	1.05	7.71	10.09	11.92	14.38
Telangana	8.18	3.77	5.30	9.12	10.55	11.49	5.37	3.14	8.21	10.23	11.77	14.22
Tripura	0.00	0.00	0.00	2.34	8.29	13.84	0.00	0.00	0.00	7.24	12.56	15.80
Uttar Pradesh	9.13	8.64	9.64	10.01	11.18	12.45	8.91	9.48	9.85	10.74	12.42	14.79
Uttarakhand	7.59	8.53	9.81	9.18	10.65	12.96	8.34	9.69	9.31	10.31	12.42	15.32
West Bengal	1.61	1.14	1.30	4.38	10.00	12.78	1.77	1.14	2.39	8.75	12.07	15.13
Total	**5.05**	**4.50**	**5.99**	**8.46**	**10.58**	**12.19**	**4.98**	**5.00**	**8.10**	**10.02**	**12.06**	**14.60**

Note: ESY (Ethanol Supply Year) from ESY 2022-23, ESY has been changed to 1st Nov to 31st Oct and ESY 22-23 is for the period of Dec'22 to Oct'23. Data for the ESY 2023-24 is upto Oct,2024. . P: Provisional
Source: Oil Companies

VII.4: Quantity of Bio Diesel Blended with Diesel

(Figures in Crore Litres)

CPSE	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	% Share in 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IOCL	3.70	4.10	0.23	0.05	3.70	23.25	52.8
BPCL	1.60	1.26	0.02	0.01	1.54	10.48	23.8
HPCL	2.78	5.05	0.27	0.02	0.82	10.26	23.3
Total CPSEs	8.08	10.41	0.52	0.08	6.06	43.99	100.0

Source: Oil Companies P: Provisional

VII.5: Ethanol received by CPSE OMCs under Ethanol Blending Programme

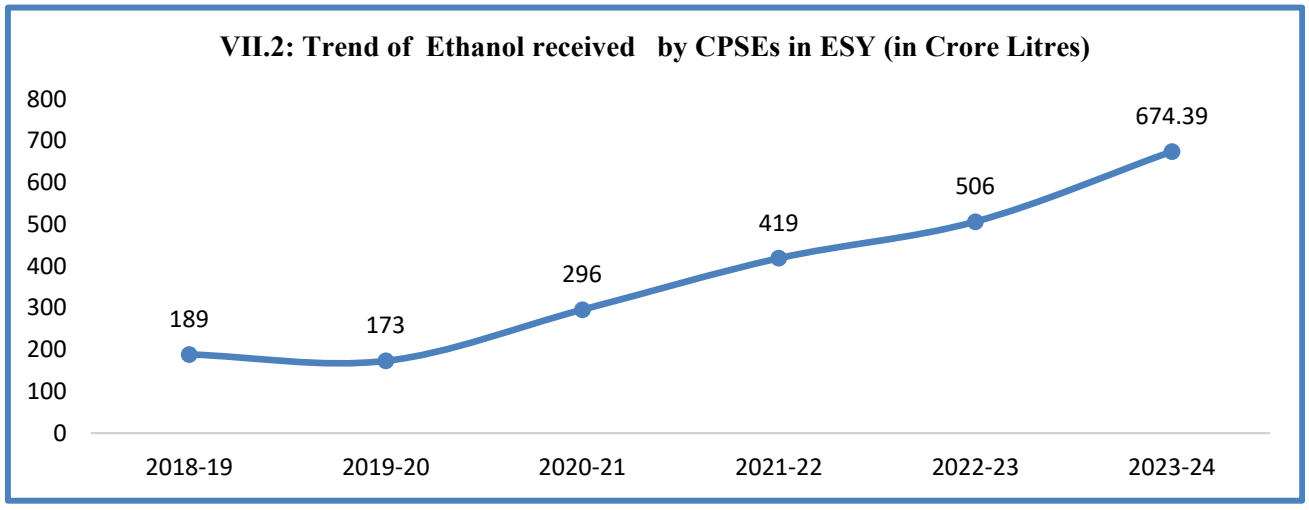
(Figures in Crore Litres)

CPSE	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	% Share in 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
As per Financial Year-wise							
IOCL	82.00	76.70	97.27	143.02	203.35	237.13	44.5
BPCL	48.70	44.85	60.04	96.00	137.04	154.69	29.0
HPCL	56.72	48.42	64.29	87.92	120.57	141.20	26.5
Total CPSEs	**187.42**	**169.97**	**221.60**	**326.94**	**460.96**	**533.02**	**100.00**
As per Ethanol Supply Year (ESY) Year-wise							
IOCL	84.11	80.39	125.89	178.47	225.26	294.25	43.6
BPCL	50.46	44.35	85.91	126.91	148.93	200.18	29.7
HPCL	54.00	48.30	84.30	113.35	132.23	179.96	26.7
Total CPSEs	**188.57**	**173.03**	**296.10**	**418.73**	**506.42**	**674.39**	**100.00**

Note: Difference between ethanol received and blending isdue to stock & inventories etc. P: Provisional

Note: ESY (Ethanol Supply Year) from ESY 2022-23, ESY has been changed to 1st Nov to 31st Oct and ESY 22-23 is for the period of Dec'22 to Oct'23. Data for the ESY 2023-24 is upto Oct,2024.

Source: Oil Companies

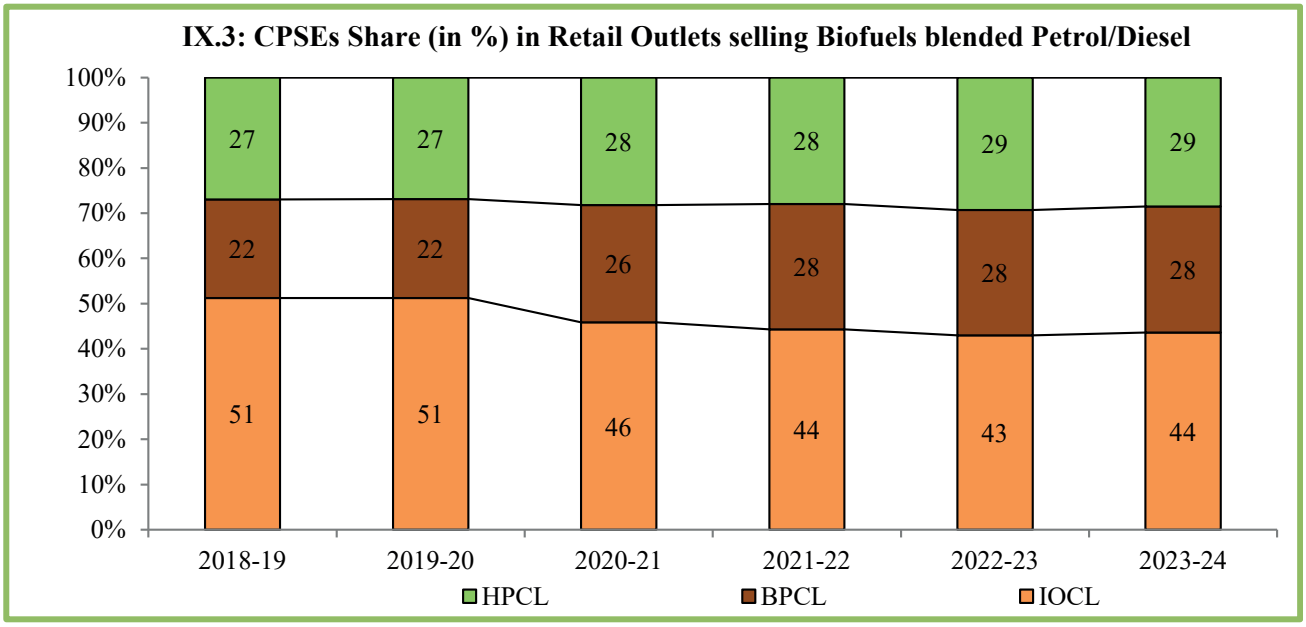


VII.6: Number of Retail Outlets selling Biofuels blended Petrol/Diesel

CPSE	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	% Share in 2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IOCL	23622	25587	27442	29976	30769	32399	43.63
BPCL	10029	10940	15509	18719	19888	20675	27.84
HPCL	12418	13408	16878	18946	20958	21186	28.53
Total CPSEs	46069	49935	59829	67641	71615	74260	100

P: Provisional

Source: Oil Companies



VII.7: Status on CBG

Parameter	Units	2022-23	2023-24	01.12.2024
(1)	(2)	(3)	(4)	(5)
No. of CBG plants commissioned	Nos.	46	62	82
CBG sale from retail outlet(s)(cum.)	Nos. of ROs	113	177	253
Sale of CBG	Tons	11227	19724	22517
Sale of CBG in CGD network	GA Nos.	16	25	51
Injection of CBG in CGD network	Nos.	3	7	8

Source: GP Section, MoPNG

VII.8: State-wise/UT-wise Ethanol received by CPSE OMCs under Ethanol Blending Programme

(Figures in Crore Litres)

State/UT	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24(P)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
	As per Financial Year-wise						As per Ethanol Supply Year (ESY) Year-wise					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Andhra Pradesh	9.66	7.76	8.84	14.62	19.05	23.02	10.16	5.34	13.51	17.59	21.78	29.80
Andman & Nikobar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.04	0.04
Assam	0.00	0.00	0.00	1.30	5.58	10.51	0.00	0.00	0.00	4.09	8.64	13.64
Bihar	7.11	7.45	9.62	11.38	12.90	17.16	6.84	8.39	9.90	14.19	16.50	20.42
Chandigarh	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.21	0.00
Chhattisgarh	0.94	3.45	6.34	7.82	8.38	11.39	3.26	4.70	7.62	7.73	11.15	13.18
Dadar & Nagar Haveli and Daman & Diu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delhi	10.71	6.75	7.73	8.87	11.95	15.85	8.40	6.69	7.02	11.62	14.26	19.89
Goa	1.96	0.85	1.27	2.11	2.52	3.00	1.21	0.79	2.12	2.55	2.98	3.65
Gujarat	10.59	11.14	15.64	19.25	25.46	27.45	13.36	12.36	18.41	22.37	26.22	32.36
Haryana	9.97	12.54	15.06	14.88	27.55	30.74	12.38	13.07	14.44	21.84	28.81	39.52
Himachal Pradesh	0.00	0.11	2.37	2.72	2.79	3.62	0.07	1.62	2.75	2.73	3.28	4.93
Jammu & Kashmir	0.00	0.00	0.01	0.70	1.03	1.64	0.00	0.00	0.52	0.90	1.44	2.03
Jharkhand	0.00	0.17	3.49	4.58	7.45	9.64	0.07	2.41	4.17	6.23	8.91	12.27
Karnataka	21.32	19.61	20.76	25.34	35.56	40.33	19.40	18.77	24.71	33.44	35.85	52.84
Lakshadweep	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Kerala	0.00	0.00	1.90	15.25	19.98	24.19	0.00	0.00	8.97	19.59	22.48	31.46
Ladakh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Madhya Pradesh	5.54	7.99	12.89	14.86	18.52	24.42	9.31	10.24	13.77	17.39	22.60	29.49
Maharashtra	40.79	25.80	28.82	39.94	60.40	59.97	29.78	21.92	39.48	55.98	55.58	72.66
Manipur	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00
Meghalaya	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.20	0.00
Mizoram	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.03	0.00
Nagaland	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.04	0.00
Odisha	0.00	0.00	1.16	7.09	11.12	16.16	0.00	0.35	4.43	10.06	14.47	21.03
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.41	0.00
Punjab	8.44	10.47	12.63	15.33	17.71	21.61	10.40	11.53	14.20	16.72	20.29	26.93
Rajasthan	0.93	3.27	4.76	17.78	21.61	25.48	4.10	2.67	12.91	20.45	24.20	29.06
Sikkim	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00
Tamil Nadu	4.34	4.87	11.24	27.51	41.59	48.78	7.48	3.52	23.27	35.76	45.56	64.63
Telangana	13.08	5.94	8.62	14.94	20.31	22.71	8.88	4.65	14.23	18.45	21.30	30.98
Tripura	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.04	0.00
Uttar Pradesh	37.65	37.79	43.96	52.54	72.64	80.54	38.70	40.15	53.19	63.93	76.84	90.27
Uttarakhand	2.35	2.43	2.66	2.74	2.90	4.11	2.45	2.44	2.82	2.71	3.71	4.85
West Bengal	2.03	1.56	1.86	6.28	13.96	22.06	2.30	1.44	3.10	12.42	18.57	26.58
Total CPSEs	**187.42**	**169.96**	**221.60**	**327.84**	**460.94**	**545.40**	**188.57**	**173.03**	**295.55**	**418.73**	**506.42**	**672.51**

Note: ESY (Ethanol Supply Year) from ESY 2022-23, ESY has been changed to 1st Nov to 31st Oct and ESY 22-23 is for the period of Dec'22 to Oct'23. Data for the ESY 2023-24 is upto Oct,2024. P: Provisional

Source: Oil Companies

VII.9: State-wise Ethanol Producing Plants and Capacity (As on 31.10.2024)

State	Grain Based Distilleries		Molasses Based Distilleries		Total	
	No.of Distilleries	KLPD	No.of Distilleries	KLPD	No.of Distilleries	KLPD
(1)	(2)	(3)	(4)	(5)	(6)=(2)+(4)	(7)=(3)+(5)
Andhra Pradesh	12	1169	8	400	20	1569
Assam	5	575	0	0	5	575
Bihar	14	2110	8	625	22	2735
Chhattisgarh	6	730	1	80	7	810
Gujarat	2	350	13	615	15	965
Haryana	18	2093	4	295	22	2388
Himachal Pradesh	2	280	0	0	2	280
Jharkhand	5	975	0	0	5	975
Karnataka	7	945	41	7435	48	8380
Madhya Pradesh	20	2860	5	300	25	3160
Maharashtra	30	1715	133	11379	163	13094
Orissa	5	611	0	0	5	611
Punjab	23	3475	4	490	27	3965
Rajasthan	10	639	0	0	10	639
Sikkim	1	65	0	0	1	65
Tamilnadu	0	0	13	665	13	665
Telangana	9	1325	4	255	13	1580
Uttar Pradesh	10	1010	65	8005	75	9015
Uttarakhand	1	40	3	250	4	290
West Bengal	7	1520	0	0	7	1520
Total	**187**	**22487**	**302**	**30794**	**489**	**53281**

Note: Ethanol productiing capacity is estimated KLPD: Kilo Litres Per Day.

Source: Directorate of Sugar and Vegetable Oils, Ministry of Consumer Affairs, Food and Public Distribution

CHAPTER-VIII



Manpower

Chapter Highlights



Total manpower employed in oil and gas sector CPSEs stood at 92,903 as on 31.03.2024 in which share of male employee is **91.5%** (84,983) and that of female employees is **8.5%** (7,920).

Sector-wise, out of 8.5% female employees, highest female deployment **(33.6%)** corresponds to Marketing vertical followed by Exploration & Production **(21.1%)** and other sector **(18.8%)**. Out of 91.5% male employees, highest male deployment **(29%)** corresponds to Exploration & Production vertical followed by Refining **(27%)** and Marketing **(23.5%)** as on 31.03.2024.





Category-wise, out of **8.5 %** female employees, highest female deployment **(72.7%)** corresponds to Executive/Managerial Category followed by Workmen **(9.5%)**, Clerical **(9.2%)** and Supervisory **(8.5%)**. Out of 91.4% male employees, highest male deployment **(60.3%)** corresponds to Executive/Managerial Category followed by Workmen **(29.3%)**, Supervisory **(6.9%)** and Clerical **(3.5%)**.

Exploration & production vertical accounted for the highest manpower deployment **(28.3%)** followed by refinery sector **(26.3%)** and marketing sector **(24.4%)** as on 31.03.2024.





Executive/Managerial categories employed the highest proportion of manpower **(61.4%)** followed by Workmen **(27.6 %)**, Supervisory **(7.0%)** and Clerical **(4.0%)** accounted for the balance as on 31.03.2024.

IOCL (32.6%) and **ONGC (27.8%)** together accounted for over 60.5% of the total manpower employed (92,903) in the oil & gas CPSEs as on 31.03.2024.



INTRODUCTION

Manpower plays a pivotal role in the effective management of an organization, as it is the human resources that fundamentally drive success and progress. The skills, knowledge, creativity, and adaptability of personnel significantly contribute to the competitiveness and high performance of the organization. Effective human resource management encompasses not only the provision of employment and guidance for employees but also the investment in their development and the empowerment of individuals to operate efficiently and effectively.



Human resource planning, also referred to as manpower planning, is essential for identifying both short- and long-term personnel requirements of the organization. This process ensures the ongoing availability of a flexible and adaptive workforce. In contrast, financial resources, while vital for supporting organizational functions, serve as secondary to human capital. Although funding is necessary for attracting and retaining top talent, it is the individuals themselves who bring unique perceptions, emotions, and attitudes to the organization. Thus, aligning these human elements with organizational goals is imperative for achieving sustained success.

The Backbone of Oil & Gas Operations: The oil and gas industry, with its demanding projects and diverse skillsets, heavily relies on manpower. This term signifies more than just the number of individuals working on a project. It represents the crucial element of availability and suitability of qualified personnel to effectively execute various tasks.

Manpower is a vital aspect of the oil and gas industry, directly impacting project success, safety, and overall efficiency. By effectively assessing manpower requirements, optimizing availability, and implementing robust planning and management strategies, companies can ensure they have the right people in the right place at the right time, contributing to a thriving and sustainable industry.



With the changing needs of the nation, the energy requirements are also changing. To keep pace with these changes & keep meeting the energy demands, large-scale developmental & expansion projects are being carried out across the Corporation.

Some of the major Refinery project sites include capacity augmentation at Panipat Refinery & Barauni Refinery, Petrochemical and Lube Integration Project at Gujarat Refinery, Integrated Para Xylene (PX) and Purified Terephthalic Acid (PTA) Project at Paradip Refinery, etc. The other infrastructure augmentation works include setting up of additional facility at Research & Development Facility at Faridabad and other major Pipeline extensions & capacity enhancements etc.

Additionally, with the entry into CGD, large scale projects are being carried out across multiple locations that involves laying, building, operating, or expanding city or local natural gas distribution networks which includes supply of Piped Natural Gas (PNG) and Compressed Natural Gas (CNG) to domestic, commercial, industrial and transport sector. All these project sites have resulted in generation of large no. of employment generation in terms of regular as well as Contractual during the FY 2023-24.

"Manpower" in the context of oil and gas, encompassing various aspects:

- **Manpower Requirements:**
  - Project Specific: Detailed assessment of the number and types of workers needed for a particular project, considering technical expertise, experience, and certifications.
  - Skills Gap Analysis: Identifying any discrepancies between the required skillset and the available workforce. This analysis helps in recruitment strategies and training programs.
  - Resource Allocation: Optimizing manpower allocation across different project phases, ensuring efficient utilization of personnel.
- **Manpower Availability:**
  - Industry-wide Trends: Analyzing the overall availability of skilled labor within the oil and gas sector, considering factors like economic fluctuations, project timelines, and global workforce demographics.
  - Geographic Considerations: Taking into account the location of projects and the availability of suitable workers in that specific region.
  - Competition for Talent: Assessing the competitive landscape for skilled labor, particularly in niche areas like drilling, production, and engineering.
- **Manpower Planning & Management:**
  - Recruitment and Training: Developing robust recruitment strategies to attract and retain qualified personnel. Implementing training programs to enhance skills and prepare individuals for specific roles.
  - Employee Retention: Implementing strategies to improve employee satisfaction and reduce turnover rates, particularly in high-demand sectors within the industry.
  - Succession Planning: Identifying and developing future leaders within the organization, ensuring a smooth transition of knowledge and expertise.
- **Impact of Manpower on Project Success:**
  - Project Delays & Cost Overruns: Inadequate manpower availability can lead to project delays and increased costs, impacting overall project success.
  - Safety and Efficiency: Having the right personnel with the appropriate skills and training is crucial for ensuring workplace safety and maximizing operational efficiency.
  - Environmental Compliance: Manpower plays a crucial role in implementing and maintaining environmental regulations and best practices across all project phases.

Manpower in the 12 Major Oil & Gas CPSEs: Manpower in the Oil & Gas CPSEs working in the various sectors & Categories:

- **Manpower in the various sector of Oil & Gas CPSEs**
  - Exploration & Production
  - Refining
  - Marketing
  - Pipelines
  - Research & Development
  - Others
- **Manpower in the various categories:**
  - Executive/Managerial
  - Supervisory
  - Clerical
  - Workmen

The analysis of manpower in the major oil and gas Central Public Sector Enterprises (CPSEs) reveals a critical interplay between human resources and the sector's operational efficiency. The workforce's skillset and adaptability are essential for meeting the challenges posed by technological advancements, market volatility, and environmental regulations.



Investment in training and development, along with a focus on diversifying talent and enhancing productivity, will be vital for these enterprises to maintain their competitive edge. Furthermore, fostering a culture of innovation and sustainability will ensure that the sector not only meets its current demands but also anticipates future challenges. By strategically managing their human resources, these CPSEs can drive growth and contribute significantly to the energy security of the nation.

VIII.1: Sector-wise Manpower Employed in Oil & Gas CPSEs in India (as on 31st March)

(Figures in Number)

Sector	2018	2019	2020	2021	2022	2023	2024 (P)	% Share of Total 2024
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Exploration & Production	31823	31019	29987	28381	27219	26430	26299	28.3
2. Refining	25198	25690	25317	24302	23840	24320	24443	26.3
3. Marketing	29994	29657	28380	25900	24718	23439	22658	24.4
4. Pipelines	5869	6101	6205	6138	5901	6022	6102	6.6
5. Research & Development	1960	1898	1843	1657	1544	1596	1584	1.7
6. Others	13033	12368	12100	11650	11964	12524	11817	12.7
TOTAL (1 to 6)	**107877**	**106733**	**103832**	**98028**	**95186**	**94331**	**92903**	**100**

Note: Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower P:Provisional

Source: Central Public Sector Enterprises (ONGC, OVL, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, NRL, MRPL, BLL, EIL)

VIII.2: Category-wise Manpower Employed in Oil & Gas CPSEs in India (as on 31st March)

(Figures in Number)

Category	2018	2019	2020	2021	2022	2023	2024 (P)	% Share of Total 2024
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Executive/Managerial	59890	60182	59114	57058	56059	56502	57015	61.4
2. Supervisory	9614	9008	8751	8241	7641	7247	6541	7.0
3. Clerical	5457	5275	5088	4723	4103	3850	3722	4.0
4. Workmen	32916	32268	30879	28006	27383	26732	25625	27.6
TOTAL (1 to 4)	**107877**	**106733**	**103832**	**98028**	**95186**	**94331**	**92903**	**100**

Note: Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower P:Provisional

Source: Central Public Sector Enterprises (ONGC, OVL, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, NRL, MRPL, BLL, EIL)

Figure VIII.1: Sector-wise Manpower (in %) as on 31.03.2024

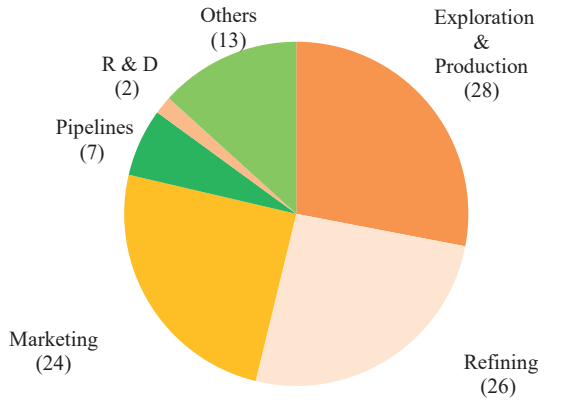
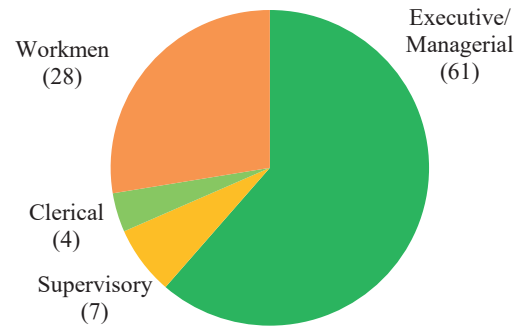


Figure VIII.2: Category-wise Manpower (in %) as on 31.03.2024



VIII.3: Category-wise and Sector-wise Manpower Employed in Oil & Gas CPSEs in India (as on 31st March)

(Figures in Number)

Category	2018	2019	2020	2021	2022	2023	2024 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Executive/Managerial	18574	18128	17304	16046	14832	14101	14272
2. Supervisory	1947	1713	1594	1480	1337	1201	1056
3. Clerical	550	541	550	535	541	579	582
4. Workman	10752	10637	10539	10320	10509	10549	10389
A. Total Manpower in Exploration & Production (1 to 4)	**31823**	**31019**	**29987**	**28381**	**27219**	**26430**	**26299**
5. Executive/Managerial	10789	11084	11022	10932	10982	12170	12414
6. Supervisory	2809	2699	2575	2252	1953	1912	1784
7. Clerical	684	684	685	664	527	490	499
8. Workman	10916	11223	11035	10454	10378	10178	9746
B. Total Manpower in Refining (5 to 8)	**25198**	**25690**	**25317**	**24302**	**23840**	**24750**	**24443**
9. Executive/Managerial	16162	16730	16632	16157	16109	15840	15956
10. Supervisory	3540	3452	3426	3295	3097	2822	2488
11. Clerical	2625	2461	2277	1710	1442	1265	1118
12. Workman	7667	7014	6045	4738	4070	3529	3096
C. Total Manpower in Marketing (9 to 12)	**29994**	**29657**	**28380**	**25900**	**24718**	**23456**	**22658**
13. Executive/Managerial	4250	4485	4545	4538	4404	4450	4548
14. Supervisory	265	232	251	267	299	319	316
15. Clerical	345	393	393	740	617	642	645
16. Workman	1009	991	1016	593	581	611	593
D. Total Manpower in Pipeline (13 to 16)	**5869**	**6101**	**6205**	**6138**	**5901**	**6022**	**6102**
17. Executive/Managerial	1663	1636	1572	1432	1337	1414	1411
18. Supervisory	84	67	67	54	56	46	27
19. Clerical	28	26	28	25	16	15	17
20. Workman	185	169	176	146	135	121	129
E. Total Manpower in Research & Development (17 to 20)	**1960**	**1898**	**1843**	**1657**	**1544**	**1596**	**1584**
21. Executive/Managerial	8452	8119	8039	7953	8395	8528	8413
22. Supervisory	969	845	838	893	899	947	870
23. Clerical	1225	1170	1155	1049	960	859	861
24. Workman	2387	2234	2068	1755	1710	1743	1673
F. Total Manpower in Marketing (21 to 24)	**13033**	**12368**	**12100**	**11650**	**11964**	**12077**	**11817**
Total Manpower in Oil & Gas CPSEs (A+B+C+D+E+F)	**107877**	**106733**	**103832**	**98028**	**95186**	**94331**	**92903**

Note: Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower P:Provisional

Source: Central Public Sector Enterprises (ONGC, OVL, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, NRL, MRPL, BLL, EIL)

VIII.4: Gender-wise & Sector-wise Manpower Employed in Oil & Gas CPSEs (as on 31.03.2024)

(Figures in Number)

Sector/Category/CPSE	ONGC*	OIL	GAIL	IOCL	BPCL	HPCL	CPCL	MRPL	NRL	Balmer Lawrie	EIL	Total (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Male Employees												
1. Exploration & Production	21420	3147	21	0	32	5	0	0	0	0	0	24625
2. Refining	156	0	0	12852	3354	2503	1280	2174	644	0	0	22963
3. Marketing	55	0	528	11283	4083	3742	8	137	123	0	38	19997
4. Pipelines	78	284	1730	3079	240	370	0	0	20	0	0	5801
5. Research & Development	627	32	12	381	44	104	7	8	1	12	41	1269
6. Others	1468	2533	2403	0	81	583	52	0	195	753	2260	10328
A. Total Male Employees in Oil & Gas CPSEs (1 to 6)	**23804**	**5996**	**4694**	**27595**	**7834**	**7307**	**1347**	**2319**	**983**	**765**	**2339**	**84983**
7. Share of Male Manpower (%) (A/C%)	**92.1**	**92.4**	**93.2**	**91.0**	**92.1**	**89.6**	**94.7**	**91.0**	**92.3**	**88.7**	**88.4**	**91.5**
Female Employees												
8. Exploration & Production	1558	111	3	0	2	0	0	0	0	0	0	1674
9. Refining	7	0	0	852	155	149	58	217	42	0	0	1480
10. Marketing	9	0	32	1642	496	460	0	11	7	0	4	2661
11. Pipelines	5	17	94	160	2	23	0	0	0	0	0	301
12. Research & Development	180	7	2	72	11	30	3	1	0	2	7	315
13. Others	284	361	213	0	8	185	14	0	33	95	296	1489
B. Total Female Employess in Oil & Gas CPSEs (8 to 13)	**2043**	**496**	**344**	**2726**	**674**	**847**	**75**	**229**	**82**	**97**	**307**	**7920**
14. Share of Female Manpower (%) (B/C%)	**7.9**	**7.6**	**6.8**	**9.0**	**7.9**	**10.4**	**5.3**	**9.0**	**7.7**	**11.3**	**11.6**	**8.5**
C. Total Manpower in Oil & Gas CPSEs (A+B)	**25847**	**6492**	**5038**	**30321**	**8508**	**8154**	**1422**	**2548**	**1065**	**862**	**2646**	**92903**
15. Share of Total Manpower (%)	**27.8**	**7.0**	**5.4**	**32.6**	**9.2**	**8.8**	**1.5**	**2.7**	**1.1**	**0.9**	**2.8**	**100.0**

Notes: Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower P:Provisional *:OVL's Manpower included in ONGC's Others
Source: Central Public Sector Enterprises (ONGC, OVL, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, NRL, MRPL, BLL, EIL)

VIII.5: Gender-wise & Category-wise Manpower Employed in Oil & Gas CPSEs (as on 31.03.2024)

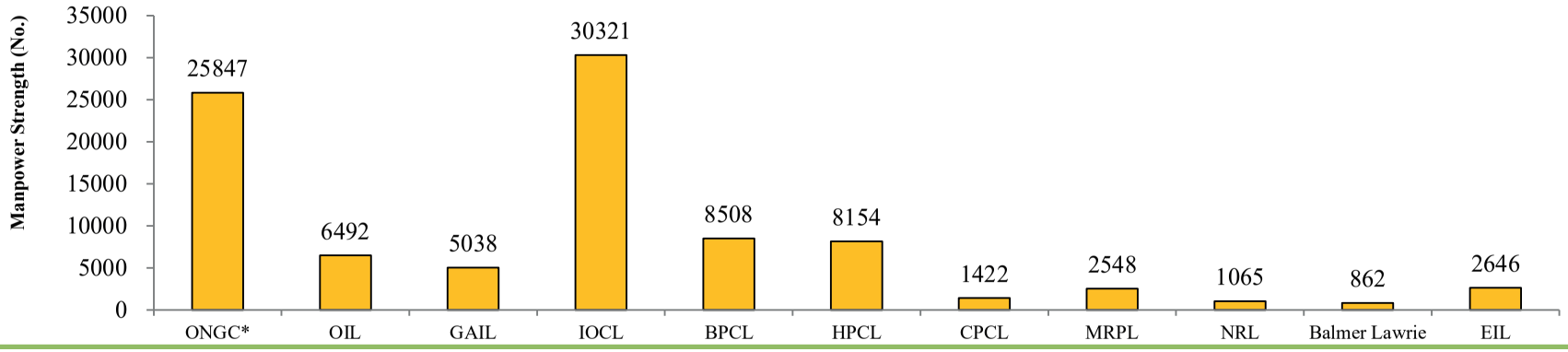
(Figures in Number)

Sector/Category/CPSE	ONGC*	OIL	GAIL	IOCL	BPCL	HPCL	CPCL	MRPL	NRL	Balmer Lawrie	EIL	Total (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Male Employees												
1. Executive/Managerial	14278	1546	3889	16566	5071	5065	521	1115	541	453	2212	51257
2. Supervisory	790	598	415	3487	0	0	150	221	0	150	55	5866
3. Clerical	410	431	355	851	297	494	20	0	33	28	72	2991
4. Workmen	8326	3421	35	6691	2466	1748	656	983	409	134	0	24869
A. Total Male Employees (1 to 4)	23804	5996	4694	27595	7834	7307	1347	2319	983	765	2339	84983
Female Employees												
5. Executive/Managerial	1475	225	302	2004	527	703	36	70	60	67	289	5758
6. Supervisory	62	76	15	463	0	0	27	0	0	18	14	675
7. Clerical	168	72	27	158	141	134	10	0	9	8	4	731
8. Workmen	338	123	0	101	6	10	2	159	13	4	0	756
B. Total Female Employess (5 to 8)	2043	496	344	2726	674	847	75	229	82	97	307	7920
Total Manpower Employed in Oil & Gas CPSEs (A+B)	25847	6492	5038	30321	8508	8154	1422	2548	1065	862	2646	92903

Notes: Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower P:Provisional *:OVL's Manpower included in ONGC's Others

Source: Central Public Sector Enterprises (ONGC, OVL, OIL, GAIL, IOCL, BPCL, HPCL, CPCL, NRL, MRPL, BLL, EIL)

Figures VIII.3: Regular Manpower Employed in CPSEs as on 31.03.2024



CHAPTER-IX



Infrastructure Projects

Chapter Highlights



Total number of projects under implementation by Oil & Gas CSPEs in 2023-24 was 434. The approved project cost for these 434 projects stands at **₹5,92,272 crore**.

Total number of mega projects (₹500 Cr. & above) under implementation by Oil & Gas CPSEs stood at 140 in 2023-24, higher by 3.7% against 135 numbers during 2022-23. The approved project cost for Mega Projects at **₹ 5,57,427 crore** in 2023-24 higher by 13.8% vis-à-vis ₹ 4,89,758 crore during 2022-23.





There has been a remarkable surge of approximately 63% in Ongoing Mega Projects, rising from 86 in FY 2018-19 to 140 in FY 2023-24. Concurrently, the number of ongoing Medium Projects stands at 112 in FY 2023-24, slightly down from 114 in FY 2018-19. However, there is a downward trend in Small Projects, declining from 380 in FY 2018-19 to 182 in FY 2023-24. Total Approved Cost has seen a remarkable increase from ₹2.67 Lakh Crore in FY 2018-19 to **₹5.92 Lakh Crore** in FY 2023-24

Total number of medium projects (₹100 Cr. to ₹500 Cr.) in Oil & Gas sector stood at 112 nos. in 2023-24 lower by 4.27% against 117 nos. during 2022-23. The approved project cost for Medium Projects at ₹28,980 crore in 2023-24 lower by 3.29% vis-à-vis **₹29,966 crore** during 2022-23.





FY 2023-24 witnessed the highest number of completed projects in any fiscal year, with 183 projects completed compared to the second-highest count of 168 in FY 2018-19. Notably, in FY 2023-24, approximately **62.3%** of total completed projects are valued at more than 100 Crore, marking a substantial increase from the **37.2%** of total completed projects in FY 2019-20 (the second-highest percentage of completed projects costing more than 100 crore in any fiscal year).

CPSEs-wise, there are total of 252 projects costing **₹100 crore** & above under implementation by Oil & Gas CPSEs with an approved cost of **₹5,86,407crore**. Out of 252 projects, IOCL was having maximum number of projects (85 numbers) among all Oil & Gas CPSEs, followed by BPCL (37 numbers) and HPCL (24 numbers).





In the financial year 2023-24, there were **40 new projects** added, with BPCL contributing 16, while IOCL and HPCL contributed 8 and 7 new projects respectively.

Chapter Highlights



Sector-wise, out of **252 projects**, CGD sector is having maximum number of projects (95 numbers) followed by refinery sector (43 projects), pipelines (40 projects) and marketing sector (36 numbers).

On the other hand, a total of **114 projects** (costing ₹100 crore & above) were completed in the current financial year. Out of these, 35 projects were completed by IOCL, marking the maximum by any CPSE. BPCL follows closely with 20 completed projects.





State-wise, out of these **252 projects**, Uttar Pradesh is having maximum number (21 numbers) followed by Maharashtra (20 numbers), Gujarat (18 numbers), Haryana, Odisha and Tamil Nadu (16 projects each).

In Financial Year 2023-24, a total of **252 projects** (costing ₹100 crore & above) were ongoing with 95 projects in CGD sector, 43 projects in the Refinery sector, 3 projects in the Petrochemical sector, 40 projects in the Pipeline sector and 36 projects in Marketing sectors.





A total of **114 projects** (costing ₹100 crore & above) were completed in FY 2023-24, with 73 projected completed in CGD sector, 12 in Pipeline, 10 in Refinery sector and 9 in marketing sector.

183 numbers of projects costing **₹114,429 crores** got completed during the FY 2023-24. Out of 183 projects, 56 are mega projects (more than ₹500 crores); 58 are medium projects (₹100 crore to ₹500 crore) and 69 small projects (₹5 crore to ₹100 crores).





Out of these **183 projects** completed during the FY 2023-24, 114 projects pertain to ₹100 crore & above and in this category, maximum projects completed by IOCL (35 projects) costing ₹30,702 followed by BPCL (20 projects) costing ₹17,068. Sector-wise, maximum projects completed in the CGD Sector (73 projects) followed by Pipelines Sector (12 projects) and Refinery Sector (10 projects) during the FY 2023-24.

Introduction

The infrastructure sector plays a pivotal role in driving India's economic growth and overall development. As the country continues on its path towards becoming a global economic powerhouse, the role of robust infrastructure becomes increasingly apparent. The oil and gas industry can contribute to economic growth by creating jobs, generating revenue, and supporting other industries.

To attract investments and bolster the industry, the Government of India permits 100% Foreign Direct Investment (FDI) under the Automatic Route in several key areas, including the exploration of oil and natural gas fields, infrastructure related to the marketing of petroleum and natural gas products, the establishment of petroleum and natural gas pipelines, LNG regasification infrastructure, market studies, and the formulation and petroleum refining activities in the private sector. These investments are subject to the prevailing sectoral policies, regulatory frameworks, and the Government's policy on private participation in exploration and discovered fields of national oil companies. Additionally, 49% FDI is allowed under the Automatic Route in petroleum refining by Public Sector Undertakings (PSUs), provided there is no disinvestment or dilution of domestic equity in existing PSUs.

The ministry has been steadfast in its commitment to advancing the energy sector and ensuring the nation's energy security. In FY 2023-24, no. of projects executed by CPSEs under Ministry of Petroleum and Natural Gas is 434 with an approved cost of INR 5.92 lakh Crores, out of which 89 projects are added in FY 2023-24 only. In FY 2023-24, 183 projects were completed by MoPNG with an anticipated cost of 1.14 Lakh Crores.

These developments reflect the Government's proactive measures in fostering investment, enhancing energy infrastructure, and advancing strategic initiatives. By facilitating growth in the oil and gas sector, India is not only addressing its energy demands but also laying a strong foundation for sustained economic progress and development.



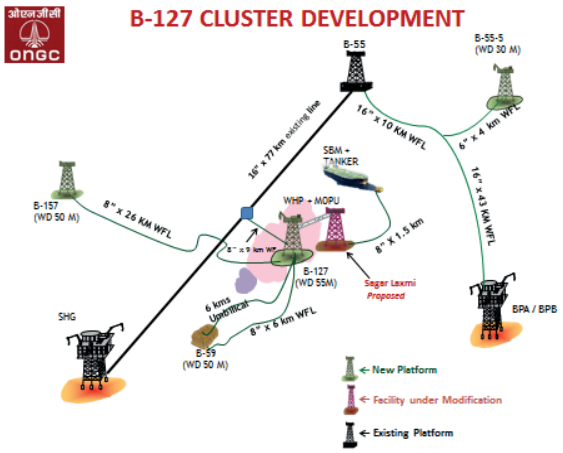
Major Completed Projects of MoPNG

1. Bokaro Angul Pipeline Section

Project Brief : With an aim to ensure cleaner and quality energy in Eastern India at an affordable Price, GAIL is executing ambitiousJagdishpur – Haldia & Bokaro – Dhamra Natural Gas Pipeline (JHBDPL) Project (2563 Km), popularly known as the Pradhan Mantri Urja Ganga Project (PMUG). Further, the pipeline is also extended from Barauni to Guwahati (via Siliguri & Bongaigaon) (726 Km), as an integral part of JHBDPL, to connect North East Region (NER) with the National Gas Grid.

Bokaro Angul Pipeline is section of Jagdishpur-Haldia-Bokaro-Dhamra Pipeline Project and passing through the states of Jharkhand (243 Km) and Odisha (290 Km) with a total length 533 km spreading across 6 Districts (Bokaro, Ramgarh, Ranchi, Khunti, Gumla and Simdega in Jharkhand and 5 Districts (Sundergarh, Jharsuguda, Sambalpur, Debagarh and Angul) in Odisha.

Benefit/Advantage of the Project: This pipeline is laid to supply environment friendly clean and green natural gas to Steel, Pellet, Aluminum, RefractoriesIndustries etc. and CGD entities in eastern states. Presently, the pipeline is supplying natural gas to anchor customers Aditya Birla Sambalpur, TRL Jharsuguda, Hindalco and enrouteCity Gas Distribution networks.



2. Integrated Development B-127 Cluster Fields

Integrated Development B-127 Cluster Project to envisage a cumulative production of 1.836 MMT of Oil and 2.093 BCM of Gas in 11years at a cost of 2665.65 Cr & Addl Dev B-552.583 BCM gas &

0.155MMT condensate in 13 yrs. Scope of work comprises of following two packages:

- Facilities:.3 Well Platforms (B-127, B-157 & B-55-5).
- Pipelines:6 Segments(97.4 Km)
- Sagar Laxmi (MOPU) Modification
- Drilling:.10 new wells &1 Side-track well.

Benefit/Advantage of the Project: Project envisage a cumulative production of 1.991 MMT of Oil and 4.676 BCM of Gas. This will save approximately ~ ₹652(@83 INR) crore annually in Oil imports &~₹2227 crore gas imports.



3. Mumbai High South Redevelopment Project (MHSRD) Phase IV: ONGC has executed MHSRD IV Redevelopment Project to envisage a cumulative production of 2.41 MMT of Oil and 0.571 BCM of Gas by 2036-37 at a cost of 3976.67 Cr. Scope of work comprises of following two packages:

Facilities:. New Water Injection Platform, WIS-R of capacity 350,000 BWIPD as replacement of existing WIS.

Implementation of Pilot EOR scheme LSWF of capacity 125,000 BWIPD in western periphery of MH South field.

Replacement of 01 water injection pipeline segments.

Benefit/Advantage of the Project: Project envisage a cumulative production of 2.41 MMT of Oil and 0.571 BCM of Gas. Estimated revenue generation from oil would be approximately (~ 1235.171 Mil USD@ 70 AvgBrent Crude price) &from gas could be (~ 393.27 USD@ natural gas priceat $6.5mmbtu).This will save approximately ~ `7326(@83 INR )crore annually in Oil imports &~`229 crore gas imports.

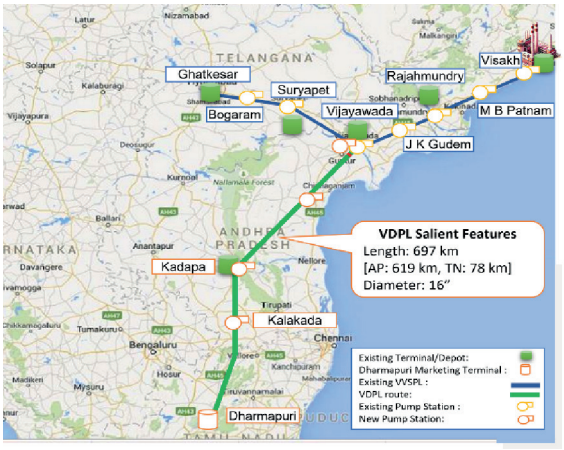
4. RUF Pitch Loading Gantry at Visakh Refinery



The bottom product of Residue Upgradation Facility (RUF) is Pitch, which is solid at ambient conditions. The estimated quantity of pitch produced is around 750~1050 TPD. As part of VRMP project, a truck loading facility is provided for the evacuation of pitch. This project will supplement the existing truck loading facility with a rail wagon gantry for supplying the pitch to larger customers. Rail wagon loading facility will facilitate transportation of pitch in an environment friendly manner. This is additional flexibility for the smooth disposal of the pitch. Rail wagon loading facility consists of 2 Nos. Silos with wagon loading system, belt conveyor system, substations, pumps for handling pitch and associated facilities.

Benefit/Advantage of the Project: This project is being implemented to address environmental concerns in the city of Visakhapatnam apart from decongestion of roads and additional flexibility for smooth disposal of pitch. Also, disposal of Pitch using Rail Wagons is estimated to provide a lower operating cost of 1631 per MT of 1000 Km average distance.

5. Vijayawada Dharmapuri Pipeline Project: HPCL has laid 697 km long Vijayawada-Dharmapuri Multiproduct Petroleum Pipeline from Vijayawada in Andhra Pradesh to Dharmapuri in Tamilnadu at a cost of Rs 3072



crores. This Pipeline branches off at Vijayawada from HPCL's existing Visakh Vijayawada Secunderabad Pipeline. The pipeline passes through the states of Andhra Pradesh (619 km) and Tamil Nadu (78 km). The originating pumping station for Vijayawada Dharmapuri Pipeline is at Vijayawada, Andhra Pradesh State and the end receiving Station is situated at Dharmapuri which is inTamilnadu State

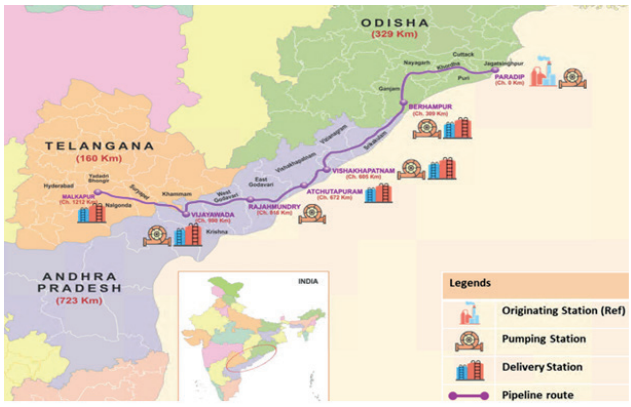
Benefit/Advantage of the Project: The Project will help in optimizing the overall logistics and increasing the availability of MS and HSD in the states of Andhra Pradesh and Tamil nadu. The Project shall also help in generation of Contractual employment essential as part of Pipeline operation which includes Security Services, O&M workmen, etc.

6. Propylene Derivatives Petrochemical Project (PDPP) at Kochi Refinery: The Propylene Derivatives Petrochemical Project (PDPP) at Kochi Refinery was configured to make available approximately 500 TMT per annum of Propylene, for production of value added petrochemicals. Niche Petrochemicals such as Acrylic Acid, Acrylates, Oxo Alcohols are produced from Propylene. These products have applications in niche segments like paints, adhesives, water treatment, plasticizers, printing inks etc.



Benefit/Advantage of the Project:

- By producing value-added petrochemicals like Acrylic Acid, Acrylates, and Oxo Alcohols from Propylene, the project reduces the need for importing these chemicals, thereby lowering carbon emissions associated with transportation.
- The project employs advanced technologies and processes to minimize waste generation and maximize resource efficiency, contributing to sustainable production practices.
- The use of niche petrochemicals in various applications such as paints, adhesives, water treatment, and plasticizers can lead to the development of more environmentally friendly products, reducing the environmental impact of these industries.
- The availability of locally produced petrochemicals reduces the country's dependence on imports, enhancing energy security and promoting self-sufficiency in the petrochemical sector.



7. Paradip Hyderabad Pipeline Project: Indian Oil Corporation Ltd. (IOCL), a Maharatna Public Sector Company (PSU), under the aegis of Ministry of Petroleum & Natural Gas (MoP&NG), constructed 4.5 MMTPA, 1212 km product pipeline from Paradip to Hyderabad traversing through the states of Odisha (329 km in 6 districts), Andhra Pradesh (723 km in 6 districts) and Telangana (160 km in 4 districts)for safe and economical transportation of petroleum product from Paradip refinery to delivery stations at Vishakhapatnam, Achutapuram, Vijayawada (in Andhra Pradesh), and Malkapur near Hyderabad (in Telangana) at a project cost of Rs 3,338 Cr.

Benefit/Advantage of the Project:

- The Pipeline will help in safe, cost efficient & environmentally friendly mode of transportation &distribution of petroleum products and will also lead to reduction in Carbon Footprint by around 66,598 Ton of Co2 emission per annum.

- The pipeline will result in optimizing the overall logistics by saving Rs 672 Cr/ annum and increasing the availability of petroleum product to Marketing terminals at Vizag, Atchutapuram, Vijayawada,Malkapur (Hyderabad) and to nearby adjoining areas.

8. **Mono Ethylene Glycol Project at Paradip Refinery:** Indian Oil Corporation Limited has setup an Ethylene Glycol plant of capacity 357 KTA (Kilo Tons per Annum) at Paradip Refinery for recovering ethylene present in off-gases from Fluid Catalytic Cracking Unit (FCCU) and then upgrading it to Mono Ethylene Glycol, Di Ethylene Glycol and Tri Ethylene Glycol. The project was commissioned in February 2023 at a cost of Rs 5654 Cr.



Benefit/Advantage of the Project:

- MEG demand
- Boosting Atmanirbhar Bharat Initiative
- Export Potential
- Regional Development:



9. BS-VI Upgradation Project: Setting up of new process units for producing BS-VI quality specifications for Motor Spirit with a cost of Rs 1829 crores. The main unit consists of FCCU Gasoline treating unit (FGTU), Sulphur Recovery Unit (SRU) and Nitrogen Plant. Storage tanks, OSBL systems and product lines to jetty are also added as associated facilities.

Benefit/Advantage of the Project:

Project significantly augmented the Refinery's capability to produce BS-VI grade of Motor Spirit & Diesel.

10. **KHT Unit integrated with existing DHT Unit at Mumbai Refinery:** Before the implementation of BS VI standards, kerosene streams with around 1000 ppm of sulfur were mixed with BS IV HSD, which had sulfur levels below 50 ppm, at BPCL MR. However, with the introduction of BS VI standards, all kerosene streams must undergo hydrotreating to reduce sulfur to less than 10 ppm to meet the upgraded HSD specifications. The existing hydrotreating facilities, including the Diesel Hydro Desulphurisation unit (DHDS) and Diesel Hydro Treater (DHT), were operating at full capacity. This situation led to the need to hydrotreat excess kerosene streams, and the resulting treated kerosene is incorporated into the production of BS VI HSD. To address this, the Kero Hydro Treater (KHT) was established. The KHT is responsible for processing kerosene streams to produce Aviation Turbine Fuel (ATF) and hydrotreating the remaining kerosene to meet the BS VI HSD requirements.



Benefit/Advantage of the Project:

a) It will help in Refinery in producing Aviation Turbine Fuel /Kerosene with less than 10ppmw Sulphur

thereby reducing the carbon footprint. This will help in catering to growing Aviation Turbine Fuel demand of the country.

b) This unit is first of its kind in India with a capability to produce ultra-low Sulphur Mineral Turpentine Oil (MTO) / Superior Kerosene Oil (SKO) / Aviation Turbine Fuel (ATF) products making it environment friendly.

Mojar Ongoing Projects of MoPNG

1. **North East Gas Grid:** Indradhanush Gas Grid Limited (IGGL), a Joint Venture Company of IOCL, ONGC, GAIL, OIL, and NRL with equal equity contribution, was incorporated on 10.08.2018 for the implementation of the North East Gas Grid (NEGG) project. The NEGG is an approximately 1656 Km long natural gas pipeline network with a design capacity of 4.75 MMSCMD and is being implemented at an estimated cost of Rs 9,265 crores. Phasing of various sections of North-East gas grid is proposed as under:



Phase-I : Guwahati-Numaligarh, Gohpur-Itanagar, Dergaon-Dimapur

Phase-II : Guwahati-Silchar, Silchar-Panisagar, Panisagar-Agartala & Khubal Feeder line, Banaskandi cum Silchar CGD, Panisagar-Aizawl, Agartala Tulamura Feeder Line, Agartala-NEEPCO, Shillong CGD, Palatana Feeder Line, Baramura Feeder Line

Phase-III: Dimapur-Kohima-Imphal, Siliguri-Gangtok

Benefit/Advantage of the Project:

The Northeast Gas Grid (NEGG) project holds strategic importance, aiming to provide reliable and uninterrupted natural gas supplies to industries and City Gas Distribution networks in the Northeast region. This initiative is expected to drive industrial and economic growth, promote environmental conservation, and support the Government's efforts to develop a gas-based economy in the region. Furthermore, it aligns with India's Hydrocarbon Vision 2030 and the target of increasing natural gas's share to 15% in the national energy mix.



2. **CGD Projects at Lakhimpur Kheri , Sitapur , Bahraich , Balrampur, Shrawasti , Siddharth Nagar, Maharajganj:** The Project involves Laying, building, operating and expansion of City Gas Distribution Network in GA of Lakhimpur Kheri , Sitapur, Bahraich, Shrawasti, Balrampur, Siddharth Nagar & Maharajganj districts. The Minimum Work Programme (MWP) set by the Petroleum and Natural Gas Regulatory Board (PNGRB) spans over a period of 8 years. The targets for this period include the installation of 421 CNG stations and providing PNG (Piped Natural Gas) to 50,69,648 domestic consumers. The project involves laying approximately 5,060 inch-kilometer of steel pipeline.

Benefit/Advantage of the Project: This City Gas Distribution (CGD) project will enable the supply of PNG to households, industrial & commercial units as well as CNG to vehicles in the geographical area of 7 districts. CGD projects have several benefits, including:

a) Clean energy: Natural gas (in the form of PNG/CNG) is a clean-burning fuel that can help India transition to a gas-based economy and reduce emissions.

b) Economic: Natural gas is a cost-competitive fuel that can help reduce fuel bills.

c) Safe: Natural gas is non-toxic, lighter than air, and has a high ignition temperature.

d) Convenient: PNG is convenient to use and doesn't require replacing cylinders.

3. **Ethylene Cracker Project:** at Bina Refinery including downstream Petrochemical Plants and expansion of Refinery: The project envisages setting up of state of art petrochemical complex at Bina Refinery, to tap into the synergies of integrating refinery & petrochemical operations and to increase petrochemical intensity index of Bina Refinery to 20%. The capacity of Bina Refinery would be enhanced to 11 MMTPA from current capacity of 7.8 MMPTA, which would produce around 2.2 MMTPA petrochemical products.





Earth work across sites


Chain link fencing

Benefit/Advantage of the Project: Petrochemical Complex adjacent to BPCL Bina refinery will accelerate development of downstream petrochemicals industry for polymer processing like packaging, fiber and filament, automotive, health care and personal care. The development of clusters of MSME associated with petrochemical industry will not only improve the general infrastructure by improvement of roads, education and health facilities but also generate tremendous employment opportunities. This project will thereby result in significant socio-economic development of the region and improve the economic status of the people in the area surrounding the Refinery/Petrochemical hub.



4. Rajasthan Refinery Project: Rajasthan Refinery Project is a 9.0 MMTPA (Million Metric Tonnes Per Annum) Greenfield Refinery cum Petrochemical Complex at Pachpadra Tehsil, Balotra District, Rajasthan and is being set up in joint venture (HRRL) by HPCL and Govt. of Rajasthan (GOR). HPCL holds 74% stake in the JV Company HPCL Rajasthan Refinery Limited (HRRL) and the rest 26 % is with Government of Rajasthan (GOR).

The capacity of the complex is 9 Million Metric Tonnes Per Annum (MMTPA) which includes 2.4 MMTPA of Petrochemical products. The revised project cost of Rs. 72,937 crores and revised mechanical completion schedule of 31-Mar-2025 is approved by both HPCL & HRRL Board and the same is under GOI approval.

5. **KG-DWN-98/2 Cluster–II NELP Block:** ONGC is executing KG-DWN-98/2 Cluster –II Development Project to envisage a cumulative production of 14.24 MMT of Oil and 30.50 BCM of Gas by 2039-40 at a cost of 34012 Cr. Scope of work comprises of following five packages:

- Package-I (Drilling and completion of wells)
- Package-II: Subsea Production systems + Subsea Umbilical Riser and Flow line Package (SPS + SURF)
- Package-III: Offshore Gas Process Platform and Living Quarter (CPP+LQUP)



- Package-IV- Hiring of Floating Production Storage and offloading system (FPSO)
- Package-V (Onshore Terminal)

Benefit/Advantage of the Project: Project envisage a cumulative production of ~14.24 MMT of Oil and 30.50 BCM of Gas. Estimated revenue generation from oil would be approximately (~ USD 7.6 Billion @ 70 Avg Brent Crude price) & from gas could be (~ USD 7.275 Billion @ natural gas price at USD 6.5 mmbtu). This will save approximately ₹10000 crore annually in Oil imports & ₹ 10000 crore gas imports.

6. **Mumbai High North Redevelopment Phase-IV:** ONGC is executing MHNRD IV Redevelopment Project to envisage a cumulative production of 4.185 MMT of Oil and 0.509 BCM of Gas by 2036-37 at a cost of 3976.67 Cr. Scope of work comprises of following two packages:



Facilities: Installation of one (1) new Living Quarter platform bridge connected to NQO and revamp/replacement work at NQO complex

Drilling: Drilling of 43 wells (19 new wells and 24 ST Wells).

Benefit/Advantage of the Project: Project envisage a cumulative production of 4.185 MMT of Oil and 0.509 BCM of Gas. Estimated revenue generation from oil would be approximately (~ 2147 Mil USD@ 70 AvgBrent Crude price) &from gas could be (~ 122.8Mil USD@ natural gas priceat $6.5mmbtu).This will save approximately ~ ₹ 1373 crore annually in Oil imports &~₹ 168 crore gas imports.

7. **Numaligarh Refinery Expansion Project 3 MMTPA to 9 MMTPA:** The Numaligarh Refinery Expansion Project is a 6 MMTPA refinery expansion initiative. The refinery scope of job includes a new train of process units configured to handle variety of imported crude and service the growing demand of auto fuel in the east and north-east region of the country while also tapping into export opportunities. The refinery scope of job is being executed in the existing premises of Numaligarh Refinery Limited in Golaghat district of Assam



Benefit/Advantage of the Project:

- Self-sufficiency in fulfilling the growing demand of auto fuels in East and North-East Region.
- Production of LPG will result in reduction import of the product to Northeast India.
- Export opportunities to neighbouring countries like Myanmar, Bangladesh, etc.
- Build opportunities for diversification to petrochemicals in future by producing propylene.



8. Paradip-Numaligarh Crude Oil Pipeline & Crude Oil Import Terminal at Paradip: As a part of Numaligarh Refinery Expansion project (NREP), a 26" dia crude oil pipeline of length 1640 KM from Paradip port in Odisha to Numaligarh at Golaghat, Assam will be constructed. The crude oil pipeline will pass through the states of Odisha, West Bengal, Jharkhand, Bihar and Assam. A crude oil Import Terminal (COIT) will also be constructed at Paradip with total capacity of 600 TKL.

Benefit/Advantage of the Project:

Crude oil will be imported at Paradip Port and will flow in the pipelines and will cater to all 3 Assam refineries. This will ensure sustenance and growth for all the four Assam refineries in future.

To meet the demand of petroleum products in North East and Eastern India.The projects will contribute to Act East policy of the Govt. of India by making product available for export to Bangladesh, Myanmar and Bhutan.

9. **Capacity Expansion of Panipat Refinery from 15 to 25 MMTPA:** The project involves expansion of capacity of Panipat Refinery from current 15 to 25 MMTPA. The project also involves the installation of a Polypropylene Unit and Catalytic Dewaxing Unit. The project was approved at a cost of Rs. 38,231 Cr and is anticipated to be commissioned in December 2025.



Benefit/Advantage of the Project:

- Increased Crude Processing Capacity
- Promoting Atmanirbhar Bharat
- Diversification with Petrochemical Units
- Enhanced Market Share and Competitiveness.



10. Propane Dehydrogenation & Polypropylene Project:GAIL is setting up of 500 KTA PDH-PP (Propane Dehydrogenation & Polypropylene) Project at Usar, Taluka-Alibag, District- Raigad, in Maharashtra. Earlier there was LPG recovery Plant at Usar which was commissioned in 1998 & was kept under preservation since 2015 due to non-availability of rich gas from ONGC.

Benefit/Advantage of the Project: The development of clusters of small and medium industrial units associated with petrochemical industry will not only improve the general infrastructure by improvement of roads, education and health facilities but also generate tremendous employment opportunities. This project will thereby improve the economic status of the people in the area surrounding the petrochemical hub. The demand of polypropylene in India will be catered to some extent by this project, which will also reduce import of polypropylene.

IX.1: Overall Summary of Oil & Gas CPSEs Projects

Cost Category	2018-19			2019-20			2020-21			2021-22			2022-23			2023-24		
	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Mega projects (Costing Rs. > 500 crore)	19	86	2,30,028	28	106	3,09,109	27	108	3,93,877	24	128	4,92,791	17	135	489758	23	140	557427
Medium Projects (Costing between Rs. 100 to Rs. 500 crore)	34	114	26,209	25	117	28,433	24	119	30,202	13	114	29,293	25	117	29966	17	112	28980
Small Projects (Costing between Rs. 5 crore & Rs. 100 crore)	73	380	10,808	95	332	9,257	66	269	7,869	80	264	7,653	61	220	6576	49	182	5866
Total	**126**	**580**	**267045**	**148**	**555**	**346798**	**117**	**496**	**431948**	**117**	**506**	**529737**	**103**	**472**	**526300**	**89**	**434**	**592272**

Note : 1. Data as on 31st March of each financial year

2. Projects costing ₹ 5 crore & above are considered.

Source: Ministry Monitoring Cell, MoPNG

IX.2: Overall Summary of Oil & Gas CPSEs Completed Projects

Cost Category	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)
1	2	3	4	5	6	7	8	9	10	11	12	13
Mega projects (Costing Rs. > 500 crore)	10	23,221	26	57,266	6	12,206	12	20,523	19	31,302	56	97,190
Medium Projects (Costing between Rs. 100 to Rs. 500 crore)	25	4,982	19	3,818	16	3,668	21	5,210	22	5,367	58	15,411
Small Projects (Costing between Rs. 5 crore & Rs. 100 crore)	133	2,787	121	3,041	82	2,000	98	2,197	82	1,959	69	1,828
TOTAL	**168**	**30,990**	**166**	**64,125**	**104**	**17,874**	**131**	**27,930**	**123**	**38,627**	**183**	**1,14,429**

Note : 1. Data as on 31st March of each financial year

2. Projects costing ₹ 5 Cr. & above are considered

Source: Ministry Monitoring Cell, MoPNG

IX.3: Total Number of Ongoing Oil & Gas CPSEs Projects - CPSE wise

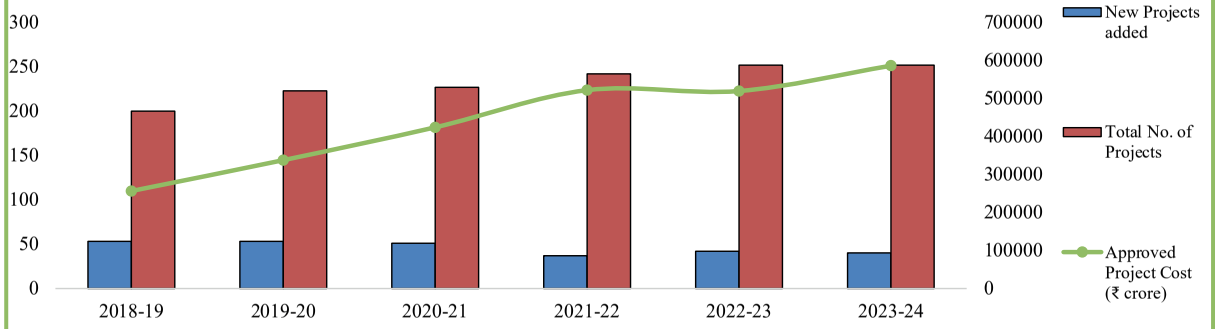
CPSE Name	2018-19			2019-20			2020-21			2021-22			2022-23			2023-24		
	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ONGC	1	33	88,089	6	30	85,967	2	17	60,378	4	18	61,579	10	26	65,132	3	23	59,964
OIL	1	8	2,710	1	7	2,493		7	2,580	1	6	2,168	3	7	3,246	-	5	2,269
GAIL	6	19	26,360	2	22	27,647	4	24	33,837	1	24	42,560	-	20	38,967	1	18	36,382
IOCL	29	88	71,552	34	112	1,04,268	14	90	1,57,250	6	87	1,64,861	19	92	1,69,932	8	85	1,60,222
BPCL	8	21	24,854	3	19	26,842	13	27	33,077	2	25	29,406	3	26	18,480	16	37	1,01,342
HPCL	4	17	33,486	5	21	80,127	10	24	47,458	2	25	46,195	5	25	42,977	7	24	43,392
MRPL	-	4	2,826	-	3	2,602	1	3	2,751	1	4	2,871	-	2	433	1	3	818
CPCL	-	3	2,344	-	2	2,279		2	2,279	-	1	421	-	-	-	1	1	205
NRL	-	1	122	2	2	2,096		1	346	3	4	23,430	-	4	23,430	1	4	23,258
JVs/ Subsidaries	4	6	3968.14	0	5	3296	7	32	84,283	17	48	1,48,753	2	50	1,57,239	2	52	1,58,565
Total	**53**	**200**	**2,56,313**	**53**	**223**	**3,37,617**	**51**	**227**	**4,24,239**	**37**	**242**	**5,22,244**	**42**	**252**	**5,19,837**	**40**	**252**	**5,86,416**

Note : 1. Data as on 31st March of each financial year

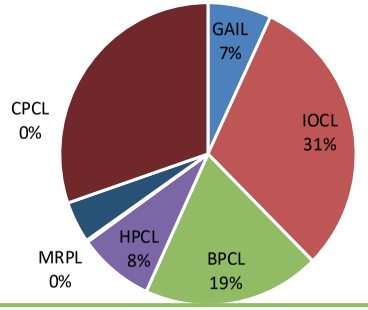
2. Projects costing ₹100 crore & above are considered

Source: Ministry Monitoring Cell, MoPNG

XII.1: Trends of Ongoing Oil & Gas CPSEs Projects



XII.2: Cost Share (%) of CPSE's Projects 2023-24



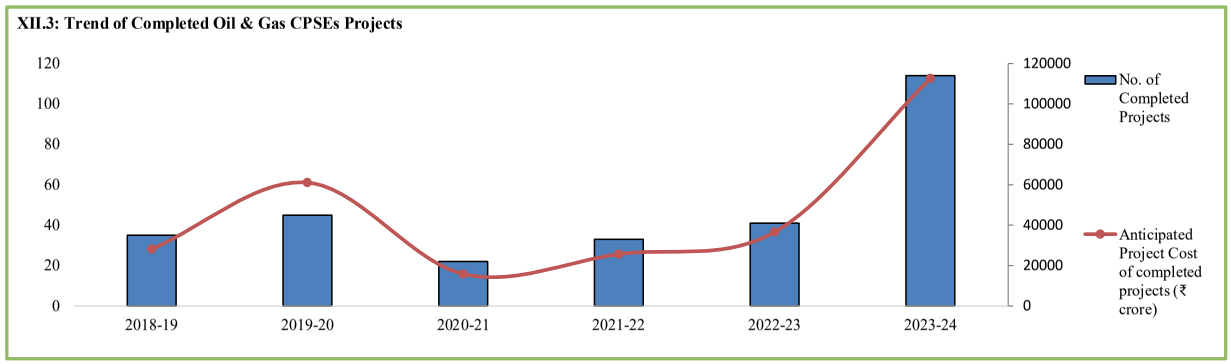
IX.4: Completed Oil & Gas CPSEs Projects - CPSE wise

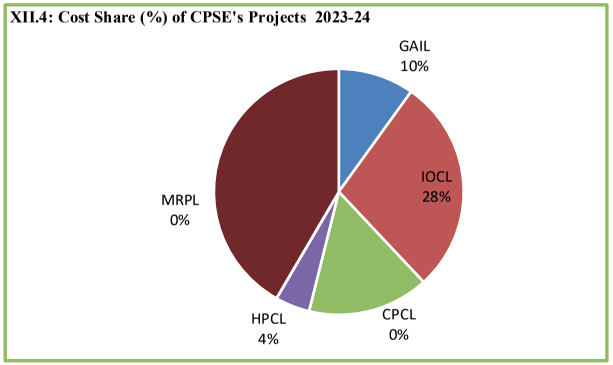
CPSE Name	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)
1	2	3	4	5	6	7	8	9	10	11	12	13
ONGC	11	12,917	13	24,217	3	3,719	2	3,900	6	8,508	3	3,894
OIL	2	606	-	-	2	623	2	345	2	870	1	142
GAIL	2	651	2	4,197	1	114	4	2,634	3	2,875	9	10,680
IOCL	8	7,653	19	21,837	10	3,663	14	7,959	16	14,593	35	30,702
BPCL	6	1,196	5	7,118	4	4,197	2	1,811	5	2,310	20	17,068
HPCL	2	530	4	1,419	1	1,700	6	6,323	8	7,135	6	4,877
MRPL	1	172	1	171	-	-	2	2,447	-	-	-	-
CPCL	1	258	-	-	1	1,858	1	315	-	-	-	-
NRL	1	122	-	-	-	-	-	-	1	377	-	-
JVs/ Subsidaries	**1**	**4098**	**1**	**2127**	**0**	**0**	**0**	**0**	**0**	**0**	**40**	**45240**
Total	**35**	**28203**	**45**	**61085**	**22**	**15874**	**33**	**25733**	**41**	**36668**	**114**	**112601**

Note : 1. Data as on 31st March of each financial year

2. Projects costing ₹100 crore & above are considered

Source: Ministry Monitoring Cell, MoPNG





IX.5: Total Number of Ongoing Oil & Gas CPSEs Projects- Sector wise

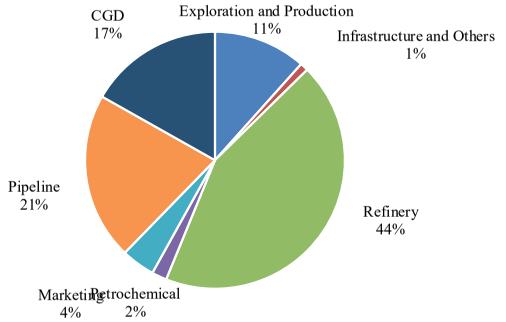
Sector Name	2018-19			2019-20			2020-21			2021-22			2022-23			2023-24		
	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(19)	(17)	(18)	(19)
Exploration and Production	2	31	81,263	4	29	81,489	1	17	57,335	4	17	55,706	11	26	60,023	-	23	53,625
Infrastructure and Others	-	3	6,457	1	3	4,217	2	5	5,063	-	5	5,063	1	6	5,273	3	10	9,383
Refinery	11	42	88,469	13	50	1,44,727	13	51	2,04,965	7	53	2,42,619	6	49	2,26,437	5	43	2,16,402
Petrochemical	-	-	-	-			1	1	911	1	2	9,708	-	2	9,708	1	3	53,075
Marketing	13	54	15,047	3	49	13,948	9	46	16,663	5	43	21,397	10	43	21,877	8	36	20,252
Pipeline	5	45	57,548	7	42	57,031	8	45	84,692	7	47	1,06,146	8	46	1,09,315	6	40	1,01,907
CGD	22	25	7,453	25	50	36,130	17	62	54,451	13	75	81,446	6	80	87,092	16	95	1,31,367
Energy																1	2	396
Total	**53**	**200**	**2,56,237**	**53**	**223**	**3,37,541**	**51**	**227**	**4,24,079**	**37**	**242**	**5,22,084**	**42**	**252**	**5,19,724**	**40**	**252**	**5,86,407**

Note : 1. Data as on 31st March of each financial year

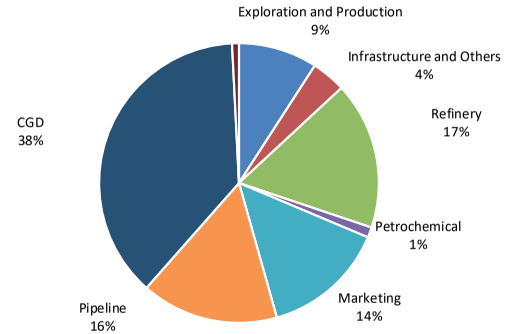
2. Projects costing ₹ 100 crore & above are considered

Source: Ministry Monitoring Cell, MoPNG

XII.5: Share (%) of CPSE's Ongoing Projects Sector-wise in FY:2022-23



XII.6: Share (%) of CPSE's Ongoing Projects Sector-wise in FY:2023-24



IX.6: Completed Oil & Gas CPSEs Projects - Sector wise

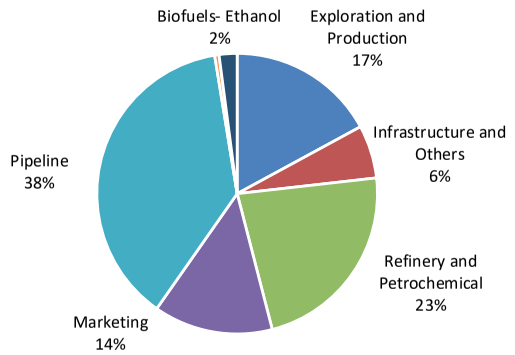
Sector Name	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)
1	2	3	4	5	6	7	8	9	10	11	12	13
Exploration and Production	8	10,234	13	24,217	4	3,576	2	3,743	3	6,264	4	3,608
Infrastructure and Others	1	4,098	-	-	-	-	-	-	3	2,244	2	317
Refinery and Petrochemical	3	4,497	12	24,998	6	7,695	10	9,909	8	8,349	10	5,731
Marketing	9	1,950	12	2,731	8	1,574	11	3,780	13	5,041	9	2,247
Pipeline	13	7,253	7	7,012	4	3,030	9	8,035	12	13,827	12	19,746
CGD	1	170	1	2,127	-	-	1	265	1	185	73	78,187
Biofuels- Ethanol	-	-	-	-	-	-	-	-	1	758	2	2,466
Biofuels- CBG	-	-	-	-	-	-	-	-	-	-	2	298
Biofuels- Biodiesel/ BioATF/Other	-	-	-	-	-	-	-	-	-	-	-	-
Renewable Energy	-	-	-	-	-	-	-	-	-	-	-	-
Total	35	28203	45	61085	22	15874	33	25733	41	36668	114	112601

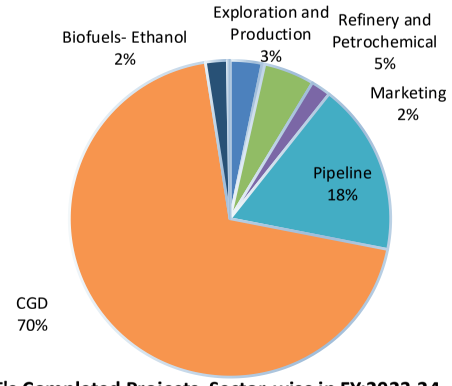
Note : 1. Data as on 31st March of each financial year

2. Projects costing ₹ 100 crore & above are considered

Source: Ministry Monitoring Cell, MoPNG

XII.7: Share (%) of CPSE's Completed Projects Sector-wise in FY:2022-23





XII.8: Share (%) of CPSE's Completed Projects Sector-wise in FY:2023-24

IX.7: Total Number of Ongoing Oil & Gas CPSEs Projects- State wise

State Name	2018-19			2019-20			2020-21			2021-22			2022-23			2023-24		
	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Andhra Pradesh	3	8	23,574	3	10	26,570	5	15	27,486	3	17	28,332	3	19	29,945	-	13	28471.88
Arunachal Pradesh	-	1	248	-	-	-							-	-	-	-	-	-
Assam	2	16	9,791	2	13	10,967	1	10	4,708	5	13	17,783	3	11	17,669	3	13	18256.41
Bihar	5	8	3,488	7	14	9,022	2	15	24,099		14	22,324	1	12	21,796	2	15	29449.92
Chandigarh (UT)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chhattisgarh	-	2	421	-	1	121		1	121	1	1	456	-	1	456	1	2	1741
Delhi (UT)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goa	1	1	208	-	1	249		1	208		1	208	-	1	208	1	2	533.89
Gujarat	3	16	11,626	3	14	14,318	4	14	31,720	3	16	37,322	7	21	40,164	2	18	38875.39
Haryana	8	10	7,942	7	16	12,957	2	16	44,028		17	44,124	2	18	45,493	-	16	44628.78
Himachal Pradesh	-	1	356	-	-	-	1	1	428		1	428	-	1	428	-	1	427.94
Jammu and Kashmir (UT)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1214.89
Jharkhand	2	4	1,433	2	6	2,294		6	2,294	3	9	4,050	1	9	4,320	1	9	4273.11
Karnataka	3	9	4,859	-	8	6,299	4	10	5,436	3	12	7,726	-	9	4,955	1	10	5444.28
Kerala	2	7	20,558	3	8	26,884		7	22,474		6	19,161	-	5	8,128	1	5	8142.98
Madhya Pradesh	1	4	609	1	5	850	2	5	1,041	2	6	2,695	-	5	2,459	2	7	46057.4
Maharashtra	3	13	7,486	-	12	7,465	7	17	15,389	2	15	29,341	8	20	27,791	4	20	30918.02
Manipur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Meghalaya	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nagaland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	227.62
Odisha	4	11	13,421	3	14	18,474	6	18	31,716	2	18	32,464	-	17	31,774	-	16	26119.84

Contd...

State Name	2018-19			2019-20			2020-21			2021-22			2022-23			2023-24		
	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)	New Projects added	Total No. of Projects	Approved Project Cost (₹ crore)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Puducherry (UT)	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Punjab	-	1	125	-	2	298	1	3	1,690	1	4	1,895	2	5	2,316	2	6	2398.15
Rajasthan	1	1	230	1	2	43,359	1	3	43,508	-	3	43,508	1	4	44,083	2	5	46064.95
Sikkim	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tamil Nadu	-	9	4,319	2	9	8,124	2	11	10,443	2	11	40,918	5	13	44,320	4	16	48498.44
Telangana	1	1	611	-	1	611	-	1	611	-	1	611	-	1	611	-	1	611
Tripura	-	2	277	-	2	277	-	1	133	-	-	-	2	2	865.33	-	2	865.33
Uttar Pradesh	8	17	6,733	4	21	8,815	4	18	7,666	1	19	8,579	2	20	9,155	3	21	26727.08
Uttarakhand	1	2	295	1	3	471	1	4	545	1	5	2,242	-	5	2,242	-	3	1950.32
West Bengal	-	7	8,886	2	8	7,538	2	6	10,480	2	8	16,577	1	9	17,587	4	11	23281.75
Western Offshore	1	15	38,100	5	17	39,342		10	24,093	1	9	23,691	1	9	23,829	-	6	17006.08
Projects in Multiple States	4	34	90,642	7	36	92,237	6	34	1,13,761	5	36	1,37,649	3	35	1,39,130	4	31	134220.09
Total	**53**	**200**	**2,56,237**	**53**	**223**	**3,37,541**	**51**	**227**	**4,24,079**	**37**	**242**	**5,22,084**	**42**	**252**	**5,19,724**	**40**	**252**	**5,86,407**

Note : 1. Data as on 31st March of each financial year

2. Projects costing ₹ 100 crore & above are considered

Source: Ministry Monitoring Cell, MoPNG

IX.8: Completed Oil & Gas CPSEs Project - State wise

State Name	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)
1	2	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Andhra Pradesh	1	247	1	407	1	385	1	303	6	1,492	6	4,126
Arunachal Pradesh	1	248	-	-	-	-	-	-	-	-	-	-
Assam	4	910	4	6,421	2	623	5	1708	1	126	1	142
Bihar	1	130	1	136	1	1,774	3	918	-	-	10	6,538
Chandigarh (UT)	-	-	-	-	-	-	-	-	-	-	-	-
Chhattisgarh	1	300	-	-	1	136			-	-	1	1,285
Delhi (UT)	-	-	-	-	-	-	-	-	-	-	-	-
Goa	-	-	-	-	-	-	-	-	-	-	1	249
Gujarat	7	1,771	4	4,879	1	208	2	446	5	2,007	2	1,768
Haryana	1	170	1	3,529	-	-	1	300	2	1,085	10	5,982
Himachal Pradesh	1	300	-	-	-	-	-	-	-	-	1	428
Jammu and Kashmir (UT)	-	-	-	-	-	-	-	-	-	-	-	-
Jharkhand	-	-	-	-	-	-	1	162	1	249	6	2,885
Karnataka	2	293	2	2,297	1	176	3	2827	-	-	5	3,346
Kerala	2	472	1	5,246	1	3,289	1	527	1	1,236	4	7,521
Madhya Pradesh	-	-	1	141	1	147	1	320	-	-	5	2,459
Maharashtra	1	120	2	1,277	4	1,044	3	5554	4	2,012	7	17,709
Manipur	-	-	-	-	-	-	-	-	-	-	-	-
Meghalaya	-	-	-	-	-	-	-	-	-	-	-	-
Nagaland	-	-	-	-	-	-	-	-	-	-	-	-
Odisha	-	-	2	3,230	2	565	1	690	1	5,648	12	8,550
Puducherry (UT)	-	-	-	-	-	-			-	-	-	-

State Name	2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)	No. of Completed Projects	Anticipated Project Cost of completed projects (₹ crore)
1	2	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Punjab	-	-	1	153	-	-	1	149	1	185	1	204
Rajasthan	-	-	-	-	-	-	-	-	1	230	1	149
Sikkim	-	-	-	-	-	-	-	-	-	-	-	-
Tamil Nadu	3	741	-	-	2	1,972	3	1009	1	124	3	4,926
Telangana	-	-	-	-	-	-	-	-	-	-	1	611
Tripura	-	-	1	143	1	133			-	-	-	-
Uttar Pradesh	-	-	5	1,986	-	-	2	384	2	995	17	8,204
Uttarakhand	-	-	-	-	-	-	-	-	2	291	3	2,048
West Bengal	1	4,190	4	4,321	-	-	-	-	2	584	5	9,432
Western Offshore	3	10,910	7	15,167	2	3,585	1	3596	3	7,821	2	3,604
Projects in Multiple States	6	7,403	8	11,750	2	1,836	4	6,842	8	12,584	10	20,435
Grand Total	**35**	**28,203**	**45**	**61,085**	**22**	**15,874**	**33**	**25,733**	**41**	**36,668**	**114**	**1,12,601**

Note : 1. Data as on 31st March of each financial year

2. Projects costing ₹ 100 crore & above are considered

Source: Ministry Monitoring Cell, MoPNG

CHAPTER-X



CPSEs: Key Financial Indicators

Chapter Highlights



Total budgeted Internal and Extra Budgetary Resources (IEBR) for 12 major CPSE's under the Ministry of Petroleum and Natural Gas in FY 2024-25 is **₹1,18,499 crore** which is 11.4% higher as compared to FY 2023-24 (₹1,06,401 crore). Actual expenditure of IEBR during FY 2023-24 was **₹1,36,862 crore** which is 128.6% of BE of FY 2023-24 (₹1,06,401 crore).

Total CAPEX for 12 major CPSE's under the Ministry of Petroleum and Natural Gas in FY 2024-25 is ₹1,18,774 (IEBR ₹1,18,499+VGF ₹275) crore which is 11.1% higher as compared to BE of FY 2023-24 **(₹1,06,901 crore)**. However, Actual Capital expenditure (CAPEX) for the FY 2023-24 is **₹1,37,339 crore** which is 128.5% of the total BE of FY 2023-24 (₹1,06,901 crore).





Total Dividend paid to Central Government, State Government and other Stakeholders during FY 2023-24 is **₹38,616 crore** which is 22.9% higher over the dividend paid during the FY 2022-23 (₹31,428 crore). During FY 2023-24, Total dividend paid to the Central Government by the Oil & Gas CPSEs is ₹19,310 crore in which ONGC (₹7,594 crore), IOCL (₹5,818 crore) and BPCL (₹2873 crore), are the top three contributors.

Gross Turnover by the Oil & Gas CPSEs for the FY 2023-24 **(₹23,59,289 crore)** is 6.4% lower as compared to FY 2022-23 **(₹25,20,929 crore)** in which IOCL (₹ 8,76,839 crore), BPCL (₹5,05,476 crore) and HPCL (₹4,59,815 crore), are the top three contributors.





Total Gross profit of Oil & Gas CPSEs during the FY 2023-24 **(₹1,92,782 crore)** is 128.7% higher as compared to FY 2022-23 (₹84,307 crore). Total profit earned after tax (Net Profit) by the Oil & Gas CPSEs for the FY 2023-24 **(₹1,45,618 crore)** which is 122.6% higher than the profit earned after tax in FY 2022-23 (₹65,417 crore). ONGC (₹40,526 crore), IOCL (₹39,619 crore) and BPCL (₹26,674 crore), are the top three CPSEs with highest net profit in the PNG Sector during the FY 2023-24.

Introduction

Oil and Gas CPSEs (Central Public Sector Enterprises) are making significant investments to foster a virtuous cycle of public expenditure, which generates multiplier effects on gross value added. These efforts serve as key drivers of economic growth, supporting the revival of the economy through job creation, material movement, and increased domestic value addition.

Realizing a project in the Oil and Gas (O&G) industry typically requires substantial capital investment over an extended period to acquire and maintain assets. The capital cost of such a project, referred to as "capital expenditure" or CAPEX, encompasses the total spending required to achieve the anticipated benefits of the project. In the broader context of business operations, expenses generally fall into two main categories: capital expenditures (CAPEX), which relate to long-term asset investments, and operating expenditures (OPEX), which cover day-to-day operational costs.



Capital Expenditures (CAPEX) refer to the funds a business spends on acquiring, upgrading, or maintaining physical assets such as property, buildings, equipment, plants, or technology. These investments are essential for enhancing a company's long-term operational capacity, expanding capabilities, or improving financial performance over time. CAPEX is particularly significant for businesses focused on growth and new investments. Such companies often allocate substantial resources to CAPEX to achieve long-term objectives, including entering new markets, increasing production capacity, or boosting profitability. By investing in these assets, businesses position themselves for sustained growth and competitiveness.



Internal and Extra Budgetary Resources (IEBR) represent a key measure of the total resources available to Central Public Sector Enterprises (CPSEs) for financing project execution and equity investments. Unlike Budgetary Support,

IEBR reflects the self-generated and externally raised funds that CPSEs can utilize independently. IEBR includes the capital expenditure (CAPEX) of CPSEs and their equity contributions in joint ventures (JVs) or subsidiaries during a given year. However, it does not account for the full CAPEX of the JVs or subsidiaries themselves, focusing instead on the direct contributions made by the CPSEs. This framework provides an important insight into the financial autonomy and capacity of CPSEs to drive their projects forward.

Total budgeted Internal and Extra Budgetary Resources (IEBR) for CPSEs' under the Ministry of Petroleum and Natural Gas in FY 2023-24 was ₹1,06,401 crore against which ₹1,36,862 crore is the actual expenditure during the April-March, 2023-24 i.e. 128.6% of the budgeted IEBR. The targeted budgeted IEBR for the FY 2024-25 is ₹1,18,499 crore. Sector Wise IEBR represent basically the area/field of operations where total IEBR is being allocated i.e., the various activities of Oil and Gas CPSEs like Exploration & Production, Refining & Marketing, Petro chemical, Engineering for Oil and Gas Sector. Refining & Marketing had highest share in IEBR with ₹69804 crore (51%) of total IEBR, followed by Exploration & Production (40.9%) and Petro chemical (8%).

Financial Performance of CPSEs: Financial performance indicators are quantifiable metrics used to assess a company's success and efficiency. These indicators enable analysts and investors to evaluate and compare the performance of similar companies within the same industry or assess industries and sectors as a whole. Since no single metric can fully capture a company's financial health, financial performance is determined by analyzing a combination of various parameters.

A **Dividend** is a distribution of profits that publicly listed companies provide to their shareholders as a reward for their investment. It is typically derived from the company's net profit after covering essential expenses. Dividends can be issued in various forms, such as cash, cash equivalents, or additional shares. The decision on the dividend rate is made by the company's board of directors and usually requires approval from a majority of shareholders.

"Dividend Paid on a Payment Basis" refers to the actual disbursement of dividends to shareholders, whereas **"Dividend Paid on an Accrual Basis"** pertains to dividends that have been declared but not yet distributed and in other words, it refers to dividends that have been declared by a company's board of directors and are recognized as a liability in the company's financial statements, even if the actual payment to shareholders has not yet occurred.

Gross turnover denotes the total revenue generated by a company before accounting for any deductions or adjustments.

Profit After Tax (PAT) is a key financial metric that indicates the amount of income a company retains after deducting all applicable corporate income taxes. It represents the company's net earnings and provides a clear picture of its financial health. As the final measure of profitability, PAT reflects the remaining income available for reinvestment, dividend distribution, or other purposes.



The **Profit & Loss Statement**, also known as the Income Statement, is a vital financial document that provides a summary of a company's revenues, costs, and expenses over a specific period, typically a quarter or a year. It captures all indirect incomes and expenses, along with the gross profit or loss, to calculate the net profit or loss. This statement offers a comprehensive view of a company's financial performance during the reporting period.

X.1: Budget Outlay & Actual Expenditure of CPSEs (as per Union Budget)

(Value in ₹ crore)

CPSEs	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24			2024-25
	Actual	Actual	Actual	Actual	Actual	BE	Actual	% Achievement over BE	BE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A. CPSE-wise Internal & Extra Budget Resources									
Oil & Natural Gas Co. Ltd.	29,450	29,538	26,859	27,741	30,208	30,125	37,494	124.5	30,800
ONGC Videsh Ltd.	5,827	5,435	5,734	4,681	2,704	3,229	3,259	100.9	5,580
Oil India Ltd.	3,181	4,247	13,332	4,367	5,534	4,896	5,907	120.6	6,880
Gail Authority India Ltd.	7,143	4,562	6,253	7,148	9,099	7,750	11,426	147.4	8,044
Indian Oil Corporation Ltd.	28,208	31,421	28,684	30,391	37,287	30,395	42,236	139.0	30,909
Bharat Petroleum Corporation Limited	10,993	11,064	11,064	11,860	12,120	10,000	11,702	117.0	13,000
Hindustan Petroleum Corporation Ltd.	12,438	16,311	14,700	16,771	14,084	10,210	14,412	141.2	12,500
Mangalore Refinery & Petrochemicals Ltd	1,072	1,318	2,179	674	625	820	1,600	195.1	820
Chennai Petroleum Corporation Ltd.	1,314	961	583	636	654	548	611	111.5	501
Numaligarh Refinery Ltd.	465	529	1,029	3,605	6,596	8,290	8,025	96.8	9,375
Balmer Lawrie & Co. Ltd.	132	46	43	22	52	40	59	146.4	40
Engineers India Ltd.	87	171	733	70	62	98	132	134.8	50
Total (I&EBR)	**1,00,309**	**1,05,603**	**1,11,194**	**1,07,968**	**1,19,027**	**1,06,401**	**1,36,862**	**128.6**	**1,18,499**
B. Sector-wise Internal & Extra Budget Resources									
Exploration & Production Sector	49,613	44,769	52,994	46,376	48,125	46,757	55,934	119.6	50,382
Refining & Marketing Sector	46,990	56,668	51,446	54,948	61,822	52,749	69,804	132.3	57,176
Petro-Chemicals Sector	3,487	3,949	5,979	6,551	8,966	6,756	10,933	161.8	10,851
Engineering Sector	219	217	776	93	114	138	191	138.2	90
Total (I&EBR)	**1,00,309**	**1,05,603**	**1,11,194**	**1,07,968**	**1,19,027**	**1,06,401**	**1,36,862**	**128.6**	**1,18,499**
Viability Gap Funding (VGF)	1,207	1,552	728	590	245	500	477	95.3	275
Total CAPEX (IEBR+VGF)	**1,01,515**	**1,07,155**	**1,11,922**	**1,08,557**	**1,19,272**	**1,06,901**	**1,37,339**	**128.5**	**1,18,774**

Source: Central Public Sector Enterprises and Budget Documents and & Central Public Sector Enterprises

X.2: Financial Performance of CPSEs under the Ministry of Petroleum and Natural Gas during FY 2023-24

Performance Parameters	Unit	ONGC	OVL	OIL	GAIL	IOCL	BPCL	HPCL	MRPL	CPCL	NRL	Balmer Lawrie	EIL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Cash and Bank Balance at year end	₹ crore	30031	5697	3070	589	832	4491	352	39	94	67	50	1143
Revenue from Operations (Net)	₹ crore	129741	9553	22130	130573	774349	448013	433525	90334	79272	21,207	2319	3232
Authorised Capital	₹ crore	15000	25000	2000	10000	30000	11935	2500	6200	400	5,000	300	400
Paid up Capital	₹ crore	6290	15000	1084	6575	14121	2136	1419	1753	149	1,615	171	281
Govt. Equity in the CPSE	%	58.89	0.00	56.66	51.52	51.50	52.98	0.00	0.00	0.00	0.00	0.00	51.32
Gross Turnover	₹ crore	138402	12580	22130	130284	876839	505476	459815	105190	79207	23,730	2404	3232
Profit After Tax	₹ crore	40526	690	5552	8836	39619	26674	14694	3596	2711	2,160	203	357
Debt equity ratio	Ratio	0.02	0.68	0.32	0.29	0.66	0.25	1.06	0.94	0.32	0.58	0.00	0.00
Reserves & Surpluses	₹ crore	299686	41348	43038	57604	162943	72539	39611	11499	8444	12,311	1256	2030
Net worth	₹ crore	305976	56348	35449	56131	146291	71934	41030	13251	8593	13,926	1426	2311
Dividend Payable (Accrual)	₹ crore	15411	75	1708	3616	16526	9111	0	526	819	711	145	169
Dividend as a %age of Equity	%	245.00	0.50	157.56	55.00	117.03	426.48	0.00	30.00	550.00	44.00	85.00	60.00
Dividend as a %age of PAT	%	38.03	10.87	30.76	40.92	41.71	34.16	0.00	14.62	30.21	32.90	71.43	47.23
Earnings Per Share (EPS)	₹	32.21	4.60	51.20	13.44	28.77	125.21	103.58	20.52	182.07	13.95	11.90	6.35
Payout Ratio	%	38.03	10.87	30.76	40.92	41.71	34.16	0.00	14.62	30.21	32.90	71.43	47.23
Long Term Borrowings	₹ crore	3988	27109	7142	11565	41368	11525	49753	10086	1335	7,953	0	0
Short Term Borrowings	₹ crore	2121	11273	0	4848	75128	7242	14764	2365	1427	157	0	0

Note:

1. Revenue from Operation (Net) means Revenue from Operations exluding Excise Duty
2. Gross Turnover means Sales of Products & Services (before discount) and includes Excise Duty
3. Reserves & Surpluses means Other Equity as appearing in Financial Statements
4. Net Worth means Net Worth as per Companies Act 2013

Source: Central Public Sector Enterprises

X.3: Dividend Paid (Payment-Basis) by CPSEs under the Ministry of Petroleum and Natural Gas

(Value in ₹ crore)

Name of CPSE	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil & Natural Gas Corp. Ltd.	**9,595**	**7,234**	**2,202**	**11,448**	**17,612**	**12,895**
Dividend to Central Government of India	6290	4394	1330	6916	10372	7594
Dividend to other Stakeholder	3305	2840	872	4532	7240	5301
ONGC Videsh Ltd.	**300**	**510**	**300**	**600**	**480**	**75**
Dividend to other Stakeholder	300	510	300	600	480	75
Oil India Ltd.	**1,078**	**1,166**	**553**	**1,166**	**2,115**	**1,898**
Dividend to Central Government of India	685	666	313	661	1198	1075
Dividend to other Stakeholder	393	500	240	505	916	823
GAIL India Ltd.	**1,734**	**3,286**	**2,238**	**3,996**	**3,068**	**3,616**
Dividend to Central Government of India	920	1702	1155	2056	1581	1863
Dividend to other Stakeholder	814	1583	1083	1940	1488	1753
Indian Oil Corp. Ltd.	**9,910**	**4,843**	**8,340**	**9,640**	**3,305**	**11,018**
Dividend to Central Government of India	5383	2545	5091	5091	1745	5818
Dividend to State Government	11	6	8	11	4	13
Dividend to other Stakeholder	4516	2292	3242	4538	1556	5187
Bharat Petroleum Corp. Ltd.	**3,905**	**5,315**	**4,045**	**15,261**	**1,302**	**5,423**
Dividend to Central Government of India	2,091	2,821	2,413	7,815	690	2,873
Dividend to State Government	34	46	30	136	11	47
Dividend to other Stakeholder	1,780	2,448	1,602	7,310	601	2,503
Hindustan Petroleum Corp. Ltd.	**1,371**	**1,432**	**1,486**	**3,227**	**1,986**	**2,128**
Dividend to Central Government of India	0	0	0	0	0	0
Dividend to other Stakeholder	1371	1432	1486	3227	1986	2128
Mangalore Refinery & Petrochemicals Ltd.	**526**	**175**	**0**	**0**	**0**	**175**
Dividend to other Stakeholder	526	175	0	0	0	175
Chennai Petroleum Corp. Ltd.	**275**	**0**	**0**	**0**	**30**	**402**
Dividend to Central Government of India	0	0	0	0	0	0
Dividend to other Stakeholder	275	0	0	0	30	402
Numaligarh Refinery Ltd.	**1,214**	**1,324**	**2,759**	**736**	**1,251**	**688**
Dividend to State Government	150	163	341	182	325	179
Dividend to other Stakeholder	1,064	1,161	2,418	554	925	509
Balmer Lawrie Ltd.	**114**	**125**	**128**	**103**	**111**	**128**
Dividend to other Stakeholder	114	125	128	103	111	128
Engineers India Ltd.	**300**	**275**	**177**	**146**	**169**	**169**
Dividend to Central Government of India	156	142	91	75	87	87
Dividend to other Stakeholder	144	133	86	71	82	82
Total Dividend Paid	**30,323**	**25,685**	**22,227**	**46,323**	**31,428**	**38,615**
Dividend to Central Government of India	15,525	12,270	10,393	22,614	15,673	19,310
Dividend to State Government	195	215	379	329	340	239
Dividend to other Stakeholder	14,603	13,200	11,456	23,380	15,415	19,066
Tax on Dividend	**5,781**	**4,665**	**0**	**0**	**0**	**0**
Total Dividend Paid incl. Dividend on Tax	**36,103**	**30,350**	**22,227**	**46,323**	**31,428**	**38,615**

Note: 1. Total may not tally due to round-off

2. Dividend paid excludes Dividend Distribution Tax.

Source: Central Public Sector Enterprises

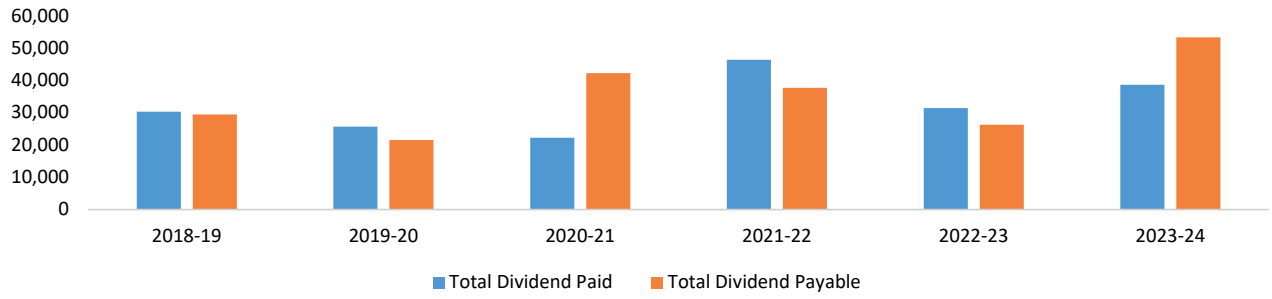
X.4: Dividend Payable (Accrual-Basis) by CPSEs under the Ministry of Petroleum and Natural Gas

(Value in ₹ crore)

Name of CPSE	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil & Natural Gas Corp. Ltd.	8,806	6,290	4,529	13,209	14,153	15,411
ONGC Videsh Ltd.	510	300	600	480	75	75
Oil India Ltd.	1,154	1,149	542	1,545	2,169	1,708
GAIL India Ltd.	1,734	3,286	2,238	3,996	3,068	3,616
Indian Oil Corp. Ltd.	**8,909**	**3,902**	**11,017**	**11,568**	**4,131**	**16,526**
Bharat Petroleum Corp. Ltd.	4,122	3,579	17,137	3,471	868	9,111
Hindustan Petroleum Corp. Ltd.	2,423	1,486	3,227	1,986	0	4,468
Mangalore Refinery & Petrochemicals Ltd.	175	0	0	0	0	526
Chennai Petroleum Corp. Ltd.	0	0	0	30	402	819
Numaligarh Refinery Ltd.	1,251	1,103	2,759	1,103	1,118	711
Balmer Lawrie Ltd.	125	128	103	111	128	145
Engineers India Ltd.	253	325	112	169	169	169
Total Dividend Payable	**29,462**	**21,550**	**42,264**	**37,668**	**26,281**	**53,285**

Source: Central Public Sector Enterprises

Figure X. 1: Dividend Accrual vis-a-vis Actual



X.5: Gross Turnover by CPSEs under the Ministry of Petroleum and Natural Gas

(Value in ₹ crore)

Name of CPSEs	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil & Natural Gas Corp. Ltd.	1,09,655	96,214	68,141	1,10,345	1,55,517	1,38,402
ONGC Videsh Ltd.	17,577	17,164	12,931	18,274	11,874	12,580
Oil India Ltd.	13,735	12,129	8,618	14,530	23,273	22,130
GAIL India Ltd.	74,808	71,730	56,529	91,426	1,43,976	1,30,284
Indian Oil Corp. Ltd.	**6,08,510**	**5,74,077**	**5,21,051**	**7,37,480**	**9,38,560**	**8,76,839**
Bharat Petroleum Corp. Ltd.	3,36,384	3,26,393	3,00,830	4,31,285	5,32,105	5,05,476
Hindustan Petroleum Corp. Ltd.	2,95,713	2,86,250	2,69,243	3,72,642	4,64,684	4,59,815
Mangalore Refinery & Petrochemicals Ltd.	72,283	60,728	50,739	86,067	1,24,686	1,05,190
Chennai Petroleum Corp. Ltd.	52,177	48,624	41,814	60,402	90,801	79,207
Numaligarh Refinery Ltd.	18,509	14,072	18,548	23,546	29,786	23,730
Balmer Lawrie Ltd.	1,854	1,612	1,593	2,105	2,383	2,404
Engineers India Ltd.	2,444	3,203	3,105	2,870	3,284	3,232
Total Gross Turnover	**16,03,649**	**15,12,196**	**13,53,143**	**19,50,971**	**25,20,929**	**23,59,289**

Note: ONGC Videsh: Gross turnover is considering revenue from operations including VAT and share of profit/(loss) of equity accounted investees.

Source: Central Public Sector Enterprises P:Provisional

X.6: Profit Earned After Tax by CPSEs under the Ministry of Petroleum and Natural Gas

(Value in ₹ crore)

Name of CPSEs	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil & Natural Gas Corp. Ltd.	26,765	13,464	11,246	40,306	40,097	40,526
ONGC Videsh Ltd.	1,682	454	1,891	1,589	1,700	690
Oil India Ltd.	2,590	2,584	1,742	3,887	6,810	5,552
GAIL India Ltd.	6,026	6,621	4,890	10,364	5,302	8,836
Indian Oil Corp. Ltd.	**16,894**	**1,313**	**21,836**	**24,184**	**8,242**	**39,619**
Bharat Petroleum Corp. Ltd.	7,132	2,683	19,042	11,363	1,870	26,674
Hindustan Petroleum Corp. Ltd.	6,029	2,637	10,664	6,383	-8,974	14,694
Mangalore Refinery & Petrochemicals Ltd.	332	-2,740	-761	2,955	2,638	3,596
Chennai Petroleum Corp. Ltd.	-213	-2,078	238	1,342	3,534	2,711
Numaligarh Refinery Ltd.	1,968	1,381	3,036	3,562	3,703	2,160
Balmer Lawrie Ltd.	189	177	116	123	154	203
Engineers India Ltd.	370	430	259	344	342	357
Total Profit Earned After Tax	**69,763**	**26,927**	**74,199**	**1,06,403**	**65,417**	**1,45,618**

Source: Central Public Sector Enterprises

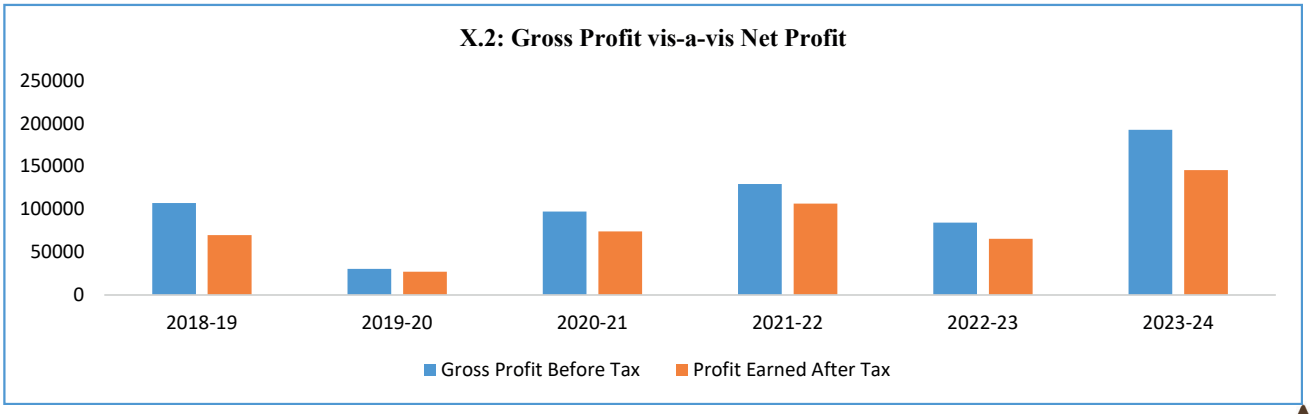
Note: BPCL: FY 2015-16 PAT was restated on account of transition to Ind AS and FY 2017-18 PAT was restated on account of merger of PCCKL.

X.7: Gross Profit & Loss Before Tax by CPSEs under the Ministry of Petroleum and Natural Gas

(Value in ₹ crore)

Name of CPSEs	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil & Natural Gas Corp. Ltd.	**40,029**	**20,388**	**16,403**	**41,040**	**52,089**	**53,016**
ONGC Videsh Ltd.	5,249	3,675	2,338	4,294	2,125	1,579
Oil India Ltd.	3,916	2,120	723	4,987	8,857	6,745
GAIL India Ltd.	9,085	7,943	6,386	13,590	6,584	11,555
Indian Oil Corp. Ltd.	25,127	-3,694	29,716	31,733	9,698	52,344
Bharat Petroleum Corp. Ltd.	10,440	2,671	22,618	15,672	2,217	35,548
Hindustan Petroleum Corp. Ltd.	9,339	1,573	14,247	8,204	-11,915	19,153
Mangalore Refinery & Petrochemicals Ltd.	581	-3,958	-915	2,708	4,239	5,521
Chennai Petroleum Corp. Ltd.	-298	-3,016	1,277	1,832	4,809	3,660
Numaligarh Refinery Ltd.	3,052	1,735	4,083	4,848	4,953	2,912
Balmer Lawrie Ltd.	280	232	157	170	211	279
Engineers India Ltd.	568	676	351	448	440	470
Total Profit & Loss	**1,07,367**	**30,345**	**97,382**	**1,29,526**	**84,307**	**1,92,782**

Source: Central Public Sector Enterprises



CHAPTER-XI



International Petroleum Statistics

Chapter Highlights



Out of 1,570 Thousand million barrels World's Proven Crude Oil reserves, India has **4.85 Thousand million barrels** of reserves in 2023.

Out of 206.43 Trillion cubic meters World's Proven Natural gas reserves India has **0.94 Trillion cubic meters** reserves in 2023.





India accounted for **728 Thousand barrels daily** (b/d) production of Crude Oil holding 23rd position in the world in 2023. The World Production of Crude Oil accounted for 96,258 Thousand b/d in 2023, higher by 2.0% vis-à-vis 2022 (94,413 Thousand b/d). United States had highest share in crude oil production with 19,358 thousand b/d (20.1%) of total World oil production, followed by Saudi Arabia (11.8%) and Russia (11.5%).

India accounted for **32 Billion Cubic Meters (BCM)** Gas Production holding 23rd position in the world in 2023. The World Natural gas production accounted for 4059 BCM in 2023, which is marginally higher by 0.3% vis-à-vis 2022 (4049 BCM). United States is having highest share in the global natural gas production with 1035 BCM i.e. 25.5% of total World gas production, followed by Russia (14.4%) and Iran (6.2%).





India accounted for **6.3%** (5962 thousand b/d) of World's production of petroleum products holding 4th position in 2023. The World Output of Petroleum Products accounted for 92,605 thousand b/d in 2023, 2.2% higher vis-à-vis 2022 (90,639 thousand b/d). United States is having highest share in production of petroleum products with 19,4333 thousand b/d i.e. 21.4% of the World output of petroleum products, followed by China (14.4%) and Russia (6.6%).

India accounted for **5.4%** (5,446 thousand b/d) of World's consumption of Crude Oil holding 3rd highest consumption after United States (188984 thousand b/d i.e.18.9%) and China (16,577 thousand b/d i.e. 16.5%) in 2023. Further, the World Consumption of Crude Oil accounted for 1,00,221 thousand b/d in 2023, 2.6% higher vis-à-vis 2022 (97683 thousand b/d).





India accounted for **1.6%** (63 BCM) of World's natural gas consumption holding 12th position in the world in 2023. The World Natural Gas Consumption accounted for 4,010 BCM in 2023, which is marginal higher by 0.04% vis-à-vis 2022 (4,009 BCM). United States is leading in natural gas consumption with share of 22.1% (887 BCM) of total world natural gas consumption followed by Russia (453 BCM i.e. 11.3%) and China (453 BCM i.e. 11.3%).

India with refining capacity of 5,085 thousand b/d constituted for **4.9%** of the World refining capacity (1,03,498 thousand b/d) and stands at 4th position in the world in 2023.



Chapter Highlights

India accounted for **10.2%** (4,674 thousand b/d) of World's imports of Crude Oil stands as third highest importer after China (11,309 thousand b/d i.e. 24.6%) and United States (4,674 thousand b/d i.e. 10.2%) in 2023. World import of Crude Oil accounted for 45,890 thousand b/d in 2023, higher by **2.9%** vis-à-vis 2022 (44604 thousand b/d).

India holds 4th position accounting for **5.7% (31 BCM)** of World's imports of LNG in 2023. China is leading among all Countries in the import of LNG accounting for 17.8% (98 BCM) of total World import of LNG (549 BCM).

India stood at **5th position** (1,127 thousand b/d) and 7th position (1,313 thousand b/d) globally in the imports and exports of petroleum products respectively in 2023. China is the highest importer of petroleum products with share of 7.3% (2,090 thousand b/d) out of World imports of petroleum products (28,784 thousand bid). United States is the highest exporter of petroleum products accounting for 19.6% (6,092 thousand b/d) out of World exports of petroleum products (31,067 thousand b/d).

OPEC Countries accounted for 19,707 thousand b/d contributing **45%** in World crude oil export (43,829 thousand b/d) in 2023. Among all countries, Saudi Arabia is leading in the crude oil export with 15.2% (6,659 thousand b/d) followed by Russia (10.5%) and United States (9.3%).

World exports of natural gas accounted for **1,383 BCM**, 2.2% lower vis-a-vis 2022 (1,414 BCM). Among all countries, United States is having highest export share of 15.6% (216 BCM) followed by Russia (12.7%) and Qatar (11.7%).

India with consumption of **39.02 Exajoules** of Primary Energy (6.3% of total world consumption) stands at the third position in consumption of primary energy in 2023. Coal accounted for the highest consumption share (56.3% i.e. 21.98 Exajoules) in India primary energy consumption followed by Crude Oil (27.1% i.e. 10.57 Exajoules), Renewables (6.1% i.e. 2.38 Exajoules), Natural Gas (5.8% i.e. 2.25 Exajoules), Hydroelectricity (3.6% i.e. 1.39 Exajoules) and Nuclear Energy (1.1% i.e. 0.43 Exajoules).

India with consumption of **36.4 Exajoules** of Primary Energy (6% of total world consumption) stands at the third position in consumption of primary energy in 2022. Coal accounted for the highest consumption share (55.1% i.e. 20.09 Exajoules) in India primary energy consumption followed by Crude Oil (27.6% i.e. 10.05 Exajoules), Renewables (5.9% i.e. 2.15 Exajoules), Natural Gas (5.7% i.e. 2.09 Exajoules), Hydroelectricity (4.5% i.e. 1.64 Exajoules) and Nuclear Energy (1.2% i.e. 0.42 Exajoules).

INTRODUCTION

Energy has always been and remains central to human achievement and progress. It is also, increasingly, central to our very survival. With global temperature increases averaging close to 1.5°C, 2023 was the warmest year since records began, and the increasingly severe impacts of climate change were felt across all continents. We also experienced the continuing effects of geopolitical disruption on energy markets, and the economies and livelihoods they support.

Energy Demand: Total primary energy consumption increased by 2% over its 2022 level, 0.6% above its ten-year average and over 5% above its 2019 pre-COVID level. Renewables share of total primary energy consumption reached 14.6%, an increase of 0.4% over the previous year. Together with nuclear, they represented over 18% of total primary energy consumption. Fossil fuel consumption as a percentage of primary energy dropped 0.4% to 81.5%.

In emerging market and developing economies – a grouping that includes almost 85% of the world's population – energy demand increased at around 2.6% per year over the last decade. The underlying drivers are a rise in the population of more than 720 million people, a 50% rise in the size of the economy and a 40% increase in industrial output. With this rapid rate of development, clean energy has to work harder to displace oil, gas and coal in emerging market and developing economies than in advanced economies.



Carbon emissions: Greenhouse gas emissions from energy use, industrial processes, flaring and methane (in carbon dioxide equivalent terms) increased 2.1% to exceed the record level set in 2022. For the first time ever, energy-related emissions exceeded the 40 GtCO2e level, with emissions from the direct use of energy breaching 35 GtCO2e for the first time ever. Carbon dioxide emissions from flaring increased by 7% along with emissions from methane and industrial processes that also increased by over 5%.

Oil: Although Brent crude oil prices fell 18% to average $83/bbl in 2023, they were still some 29% above their 2019 pre-COVID levels. Global oil production increased by 2.1 million b/d to reach a record level of 96 million b/d in 2023. The US remained the largest producer seeing its output grow by over 8%. Overall production from non-OPEC+ countries exceeded global incremental demand growth by 20%. Back in 2022 the combined consumption of oil and biofuel products exceeded 100 million barrels per day for the first time ever. In 2023, consumption of oil products alone exceeded this level.

Regionally, whilst North America witnessed a modest increase in oil consumption of around 0.8%, demand in Europe fell by nearly 1% to 13.9 million barrels per day. By contrast, the Asia Pacific region noticed an increase of over 5% to 38 million barrels per day.

Natural Gas: On average natural gas prices in Europe and Asia fell 30% from their record highs recorded in 2022, averaging around $13/mmBtu. US Henry Hub prices exhibited an even greater fall of 60% to average $2.5/mmBtu across the year, back to their 2019 pre-COVID level.

Global gas production remained relatively constant compared to 2022. The US remains the largest producer of gas delivering around a quarter of the world's supply. Output in Europe and the CIS fell by around 7% and 4% respectively. In absolute terms, the Russian Federation saw the largest fall in output with a 5% drop of 32 bcm.



In 2023 LNG supply grew nearly 2% (10 bcm) to 549 bcm. The US overtook Qatar as the world's largest exporter of LNG, seeing its supply increase nearly 10% versus a 2%

drop from Qatar. The Russian Federation saw falls in both its LNG and pipeline exports with LNG dropping nearly 2% (0.8 bcm) and pipeline supplies dropping around 24% (30 bcm). Global natural gas demand increased by only 1 bcm in 2023, a rise of only 0.02% and only slightly above its 2019 pre-COVID level. Whilst its share of global fossil fuel consumption remained around the 29% mark, its share of total primary energy consumption fell 0.5% from 2019.

Overall natural gas pipeline net trade fell by around 8% (or 35 bcm) in 2023. European pipeline imports fell by 26% (40 bcm), almost entirely attributable to supplies from the Russian Federation which accounted for 91% of the drop.

Coal: From the record levels recorded in 2022, coal prices fell 46% on average with European delivered prices settling around $130/tonne and delivered prices in Asia averaging around $125/tonne. Global coal production reached its highest ever level (179 EJ), beating the previous high set the year before. The Asia Pacific region accounted for nearly 80% of global output with activity concentrated in just four countries, Australia, China, India, and Indonesia. Global coal consumption continued to increase and breached 164 EJ for the first time ever. The increase of 1.6% over 2022 was seven times higher than the previous ten-year average growth rate.

Electricity: Global electricity generation increased by 2.5% in 2023 to reach a record level of 29,925 TWh. Whilst electricity demand in Asia Pacific and the Middle East increased by around 5%, demand in both Europe and North America fell by 2.4% and 1% respectively.

For fossil fuels, coal retained its position as the dominant fuel for power generation in 2023 with a stable share around 35%. Natural gas' share of the generation fleet also remained stable at around 23%. Oil-fired plant contributed just over 2% of total electrical output. Renewables share of total power generation rose from 29% to 30%. At a regional level, Southern & Central America recorded the highest contribution from renewables at 72%. In Brazil, responsible for over 40% of electricity demand in the region, wind and solar increased by 17% and 71% respectively.

Wind & Solar: Solar and wind capacity continued to grow rapidly in 2023 beating the previous year's record of 276 GW by around 186 GW, a 67% increase. Solar accounted for 75% (346 GW) of the capacity additions with China responsible for around a quarter of the growth. Europe installed just over 56 GW of solar, representing 16% of total solar capacity addition.

Biofuels: Global biofuels' production grew by over 8% in 2023 with the biggest increases seen in the US (75 mboe/d) and Brazil (65 mboe/d). Indonesia was responsible for around 46% of Asia Pacific region's production of 422 mboe/d. The production split in 2023 was 54% biogasoline and 46% biodiesel. The US, Brazil, and Europe were responsible for around three-quarters of all biofuels consumed globally.



India: India was the fastest growing major economy in 2023, with output increasing by 7.8%. It is on track to become the third-largest economy in the world by 2028. Looking ahead, India faces a range of challenges on the energy front, including ensuring universal clean cooking access, reducing fossil fuel import dependence, boosting the reliability of the power sector and the financial performance of distribution companies, addressing severe air pollution and managing the impacts of climate extremes, especially heat waves and floods.

The population size and the scale of rising demand from all sectors mean that India is poised to experience more energy demand growth than any other country over the next decade. Coal has been playing a prominent role to meet energy demand in industry, providing 40% of its energy needs in 2023.

India is forecast to be the single largest source of global oil demand growth from 2023 to 2030, marginally ahead of China. Underpinned by strong economic and demographic growth, the country is on track to post an increase in oil demand of almost 1.2 mb/d over the forecast period, accounting for more than one-third of the projected 3.2 mb/d global gains.

India plays a pivotal role in the global energy transition. It's growing population is increasing energy needs and impressive economic growth make its journey of energy vital not just for itself, but for the entire world. This reflects India's evolving position on the global energy and climate stage, where its development and trajectory of emissions are critical to achieving the global climate goals. The previous decade (FY 2014-2024) was instrumental in shaping India's clean energy transition. India became the fourth largest consumer of electricity as well as the fourth largest renewable energy producer in the world.



As on 31st March 2024, India's total installed power capacity reached 441.97 GW, an increase from 275.90 GW of 2014-15, reflecting a growth of 60.19% over the past nine years. Total installed capacity under Renewable Energy sector, including large Hydro was increased from 81.22 GW of 2014-15 to 190.57 GW by 2023-24 with a growth of 134.63% during the period.

Installed capacity under Solar, Wind, Bio Power and Small Hydro Power was 143.64 GW as on 31st March 2024 which was enhanced from 39.95 GW of 2014-15, having a remarkable growth of 259.55%. India witnessed an amazing capacity installation of 18.56 GW in RE sector during 2023-24, significantly higher than that of 7.35 GW in non-RE sector. Annual growth rate for Renewable Energy installations has consistently surpassed 6% whereas growth rate of non-renewable energy has not been more than 3.01% from 2017-18. By the end of 2023-24, Renewable Energy and non-fossil fuel sectors accounted for 43.12% and 44.97% of the total installed capacity, respectively.

According to the Renewable Energy Statistics 2024 published by International Renewable Energy Agency (IRENA), India ranks 4th position globally in overall renewable energy installed capacity. Specifically, India holds 4th position in both wind power and Bio power installations and 5th position in both Solar power and Hydro Power installations.

XI.1: World Energy Outlook-2023

Total Primary Energy Consumption (Exajoules)		Refining Capacity (Thousand barrels daily)	
World	**620**	**World**	**103498**
India (Rank 3)	**39**	**India (Rank 4)**	**5085**
Top Five Countries		**Top Five Countries**	
China	171	China	18484
US	94	US	18429
India	39	Russian Federation	6781
Russian Federation	31	India	5085
Japan	17	South Korea	3363
Production - Oil (Thousand barrels daily)		**Consumption- Oil (Thousand barrels daily)**	
World	**96258**	**World**	**100221**
India (Rank 23)	**728**	**India (Rank 3)**	**5446**
Top Five Countries		**Top Five Countries**	
US	19358	US	18984
Saudi Arabia	11389	China	16577
Russian Federation	11075	India	5446
Canada	5653	Saudi Arabia	4052
Iran	4662	Russian Federation	3635
Production - Natural Gas (BCM)		**Consumption- Natural Gas (BCM)**	
World	**4059**	**World**	**4010**
India (Rank 23)	**32**	**India (Rank 12)**	**63**
Top Five Countries		**Top Five Countries**	
US	1035	US	886
Russian Federation	586	Russian Federation	453
Iran	252	China	405
China	234	Iran	246
Canada	190	Canada	121
Crude Oil Imports (Thousand barrels daily)		**Crude Oil Exports (Thousand barrels daily)**	
World	**45890**	**World**	43829
India (Rank 3)	**4674**	**India**	-
Top Five Countries		**Top Five Countries**	
China	11309	Saudi Arabia	6659
United States	6478	Russia	4586
India	4674	United States	4058
South Korea	2735	Iraq	3467
Japan	2546	Canada	3401
Petroleum Product Imports (Thousand barrels daily)		**Petroleum Product Exports (Thousand barrels daily)**	
World	**28784**	**World**	31067
India (Rank 5)	**1127**	**India (Rank 7)**	1313
Top Five Countries		**Top Five Countries**	
China	2090	United States	6092
United States	2036	Russia	2299
Singapore	2034	Netherlands	2158
Netherlands	1633	Singapore	1606
India	1127	South Korea	1337
Natural Gas Imports (BCM)		**Natural Gas Exports (BCM)**	
World	**1261**	**World**	**1383**
India (Rank 15)	**24**	**India**	**-**
Top Five Countries		**Top Five Countries**	
China	163	United States	216
Germany	89	Russia	176
Japan	87	Qatar	161
United States	83	Norway	115
Italy	62	Australia	106

Source: Energy Institute Statistical Review of World Energy 2024 and OPEC Annual Statistical Bulletins, 2024

XI.2: Economic Indicators of OPEC Nations' during 2023

Country	Export of Crude Oil	Export of Natural Gas	Exports of Petroleum Products	Imports of Petroleum Products	Value of Petroleum Exports	Value of Total Export	Petroleum Exports as % of total Exports	Proven Crude Oil Reserves	Gas Reserves	Crude Oil Production	Natural Gas Marketed Production	Production of Petroleum Products	Refinery Throughput	Crude Refining Capacity	Oil Demand
	(Thousand b/d)	BCM	(Thousand b/d)	(Thousand b/d)	(Million $)	(Million $)		(Million Barrels)	(BCM)	(Thousand b/d)	BCM	(Thousand b/d)	(Thousand b/d)	(Thousand b/d)	(Thousand b/d)
1	2	3	4	5	6	7	8=6/7%	9	10	11	12	13	14	15	16
Algeria	483	52.0	515	3	26115	60374	43.3	12200	4504	973	104.3	657	671	677	472
Congo	249	0.0	5	0	6811	10600	64.3	1811	284	271	0.4	18	19	21	8
Equatorial Guinea	54	4.6	0	5	1745	5100	34.2	1100	39	55	7.1	na	na	na	5
Gabon	204	0.0	10	5	6107	12174	50.2	2000	26	223	0.5	21	13	25	46
Iran	1323	12.9	408	95	41129	99690	41.3	208600	33988	2859	275.0	1775	1790	2237	1840
Iraq	3467	0.0	198	104	102574	109705	93.5	145019	3714	4118	11.0	928	739	1266	934
Kuwait	1568	0.0	965	17	78061	87065	89.7	101500	1784	2590	15.5	1244	1035	1415	457
Libya	1024	1.1	91	145	30689	36343	84.4	48363	1505	1189	11.8	112	87	634	200
Nigeria	1476	29.7	3	476	46298	82857	55.9	37500	5943	1187	42.4	17	27	1122	484
Saudi Arabia	6659	0.0	1273	433	248376	370974	67.0	267230	9651	9606	123.5	2529	2514	3291	3275
U.A.E	2651	4.8	1143	126	78161	570169	13.7	113000	8210	2944	56.7	974	1104	1227	1022
Venezuela	550	0.0	201	19	13682	16910	80.9	303008	5476	783	22.6	275	466	2276	336
Total OPEC	**19707**	**105**	**4811**	**1429**	**679746**	**1461960**	**46.5**	**1241331**	**75124**	**26799**	**671**	**8549**	**8466**	**14190**	**9080**

Note:

1. Totals may not add up due to rounding off.
2. Crude oil exports may include lease condensate and volume of oil in transit.

Source: OPEC Annual Statistical Bulletin, 2024

XI.3: World Proven Oil Reserves (Country-wise)

(Figures in Thousand million barrels)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	Venezuela	303.81	303.81	303.56	303.47	303.22	303.01	19.3
2	Saudi Arabia	267.03	267.07	267.08	267.19	267.19	267.23	17.0
3	IR Iran	155.60	208.60	208.60	208.60	208.60	208.60	13.3
4	Iraq	145.02	145.02	145.02	145.02	145.02	145.02	9.2
5	United Arab Emitates	97.80	105.00	107.00	111.00	113.00	113.00	7.2
6	Kuwait	101.50	101.50	101.50	101.50	101.50	101.50	6.5
7	Russia	80.00	80.00	80.00	80.00	80.00	80.00	5.1
8	Libya	48.36	48.36	48.36	48.36	48.36	48.36	3.1
9	United States	43.82	44.19	35.84	41.61	45.27	47.73	3.0
10	Negeria	36.97	36.89	36.91	37.05	36.97	37.50	2.4
11	Kazakhstan	30.00	30.00	30.00	30.00	30.00	30.00	1.9
12	China	25.93	26.15	26.02	26.49	27.00	27.89	1.8
13	Qatar	25.24	25.24	25.24	25.24	25.24	25.24	1.6
14	Brazil	12.84	13.44	12.72	11.89	13.24	14.86	0.9
15	Algeria	12.20	12.20	12.20	12.20	12.20	12.20	0.8
16	Ecuador	8.27	8.27	8.27	8.27	8.27	8.27	0.5
17	Norway	8.65	8.52	7.90	7.75	7.57	7.64	0.5
18	Azerbaijan	7.00	7.00	7.00	7.00	7.00	7.00	0.4
19	Mexico	5.81	5.33	5.50	5.62	5.56	5.67	0.4
20	Sudans	5.00	5.00	5.00	5.00	5.00	5.00	0.3
21	Oman	5.37	5.37	5.37	5.37	4.86	4.91	0.3
22	**India**	**4.42**	**4.42**	**4.61**	**4.49**	**4.37**	**4.85**	**0.3**
23	Canada	5.19	4.91	4.92	4.86	4.73	4.71	0.3
24	Vietnam	4.40	4.40	4.40	4.40	4.40	4.40	0.3
25	Egypt	3.33	3.08	3.08	3.30	3.30	3.30	0.2
26	Argentina	2.02	2.39	2.48	2.41	2.84	2.92	0.2
27	Malaysia	3.60	3.60	3.60	3.60	2.70	2.70	0.2
28	Angola	8.16	7.78	7.23	2.52	2.55	2.55	0.2
29	Indonesia	3.17	3.15	2.48	2.44	2.25	2.27	0.1
30	Colombia	1.78	1.96	2.04	1.82	2.04	2.07	0.1
	Rest of World	31.35	30.72	30.31	40.16	39.48	39.10	2.5
Total World		**1493.63**	**1553.39**	**1544.23**	**1558.63**	**1563.74**	**1569.52**	**100.00**
of which: OPEC		1174.37	1233.50	1235.15	1239.30	1240.97	1241.33	79.1

Notes:

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

Source : OPEC Annual Statistical Bulletins 2024

XI.4: World Proven Gas Reserves (Country-wise)

(Figures in Billion cubic metres)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	Russia	49571	49084	47759	47759	44150	44150	21.4
2	IR Iran	33330	33899	33988	33988	33988	33988	16.5
3	Qatar	23846	23831	23831	23831	23831	23831	11.5
4	United States	13437	13171	13171	16674	16674	17410	8.4
5	Turkmenistan	13950	13950	13950	13950	13950	13950	6.8
6	Saudi Arabia	8260	8366	8437	8507	9514	9651	4.7
7	United Arab Emirates	6091	7726	7730	8200	8210	8210	4.0
8	Nigeria	5675	5761	5750	5848	5913	5943	2.9
9	Venezuela	5674	5674	5590	5541	5511	5476	2.7
10	Algeria	4504	4504	4504	4504	4504	4504	2.2
11	Iraq	3729	3714	3714	3714	3714	3714	1.8
12	China	2779	2834	2922	2892	2887	2985	1.4
13	Australia	3193	2846	2844	2844	2844	2844	1.4
14	Mozambique	2840	2840	2840	2840	2840	2840	1.4
15	Canada	2094	2471	2472	2615	2802	2802	1.4
16	Egypt	2221	2209	2209	2209	2209	2209	1.1
17	Malaysia	2251	2240	2130	2095	2056	2056	1.0
18	Norway	2226	2165	2095	2072	1959	1979	1.0
19	Azerbaijan	1435	1917	1917	1917	1917	1917	0.9
20	Kazakhstan	1830	1830	1830	1830	1830	1830	0.9
21	Kuwait	1784	1784	1784	1784	1784	1784	0.9
22	Libya	1505	1505	1505	1505	1505	1505	0.7
23	**India**	**1340**	**1381**	**1372**	**1372**	**1139**	**945**	**0.5**
24	Uzbekistan	867	867	867	867	867	867	0.4
25	Indonesia	1408	1233	1118	1028	902	788	0.4
26	Oman	677	674	673	673	673	661	0.3
27	Argentina	372	400	376	392	437	470	0.2
28	Brazil	368	365	338	379	406	434	0.2
29	Pakistan	472	454	461	487	458	430	0.2
30	Mexico	273	263	283	305	312	311	0.2
	Rest of World	6354	6137	6133	6200	6116	5949	2.9
Total World		**204356**	**206095**	**204591**	**208823**	**205903**	**206434**	**100.0**
of which: OPEC		70905	73282	73350	73941	74992	75124	36.4

Notes:

1. Total may not add up due to rounding off. P: Provisional
2. Total proved reserves of natural 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. The data series for natural gas does not necessarily meet the definitions, guidelines and practices used for determining proved reserves at company level, for instance as published by the US Securities and Exchange Commission, nor does it necessarily represent bp's view of proved reserves by country.

Source : OPEC Annual Statistical Bulletins 2024

XI.5: World Crude Oil Production (Country-wise)

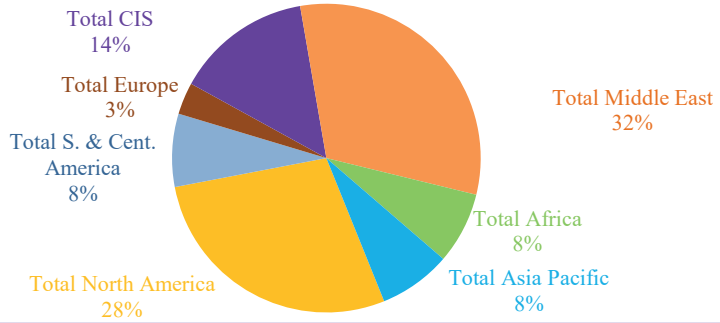
(Figures in Thousand barrels daily)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	4	5	6	7	8		9
1	US	15321	17135	16493	16693	17844	19358	20.1
2	Saudi Arabia	12261	11832	11039	10954	12191	11389	11.8
3	Russian Federation	11562	11679	10666	11000	11202	11075	11.5
4	Canada	5244	5372	5130	5414	5575	5653	5.9
5	Iran	4720	3510	3230	3766	3945	4662	4.8
6	Iraq	4632	4779	4114	4102	4520	4355	4.5
7	China	3802	3848	3901	3994	4111	4198	4.4
8	United Arab Emirates	3894	3984	3679	3640	4020	3922	4.1
9	Brazil	2691	2890	3030	2991	3112	3502	3.6
10	Kuwait	3050	2976	2721	2706	3036	2908	3.0
11	Mexico	2068	1918	1910	1926	1943	2040	2.1
12	Norway	1863	1774	2018	2036	1906	2022	2.1
13	Qatar	1798	1737	1715	1697	1743	1772	1.8
14	Kazakhstan	1900	1903	1796	1805	1891	1771	1.8
15	Nigeria	2000	2093	1894	1678	1445	1540	1.6
16	Algeria	1511	1487	1332	1353	1443	1408	1.5
17	Libya	1165	1232	420	1286	1143	1271	1.3
18	Angola	1519	1420	1325	1177	1191	1150	1.2
19	Argentina	592	720	721	797	955	1074	1.1
20	Oman	978	971	951	971	1064	1049	1.1
21	Venezuela	1642	1051	680	678	735	853	0.9
22	Colombia	865	886	781	736	754	777	0.8
23	**India**	**892**	**851**	**795**	**770**	**739**	**728**	**0.8**
24	United Kingdom	1092	1118	1049	874	809	715	0.7
25	Indonesia	808	781	742	692	647	641	0.7
26	Azerbaijan	784	763	703	708	669	620	0.6
27	Egypt	674	653	632	608	613	610	0.6
28	Malaysia	713	672	615	571	561	565	0.6
29	Ecuador	517	531	479	473	481	475	0.5
30	Guyana	0	1	74	117	278	391	0.4
	Rest of World	4443	4605	4292	4067	3848	3764	3.9
Total World		**95002**	**95172**	**88928**	**90282**	**94413**	**96258**	**100**
of which: OECD		27251	29089	28244	28514	29614	31330	32.5
Non-OECD		67751	66084	60684	61768	64798	64928	67.5
OPEC		37094	35079	31107	31928	34247	34048	35.4
Non-OPEC		57908	60093	57821	58354	60165	62210	64.6
European Union		448	414	392	370	346	328	0.3

Notes:
1. Total may not add up due to rounding off. P: Provisional
2. Production Includes crude oil, shale oil, oil sands, condensates (lease condensate or gas condensates that require further refining) and NGLs (natural gas liquids - ethane, LPG and naphtha separated from the production of natural gas). Excludes liquid fuels from other sources such as biofuels and synthetic derivatives of coal and natural gas. This also excludes liquid fuel adjustment factors such as refinery processing gain. Excludes oil shales/kerogen extracted in solid form.

Source: Energy Institute Statistical Review of World Energy 2024

Figures XI.1: Region-wise Distribution of Crude Oil Production-2023 (%)



XI.6: World Natural Gas Production (Country-wise)

(Figures in Billion cubic metres)

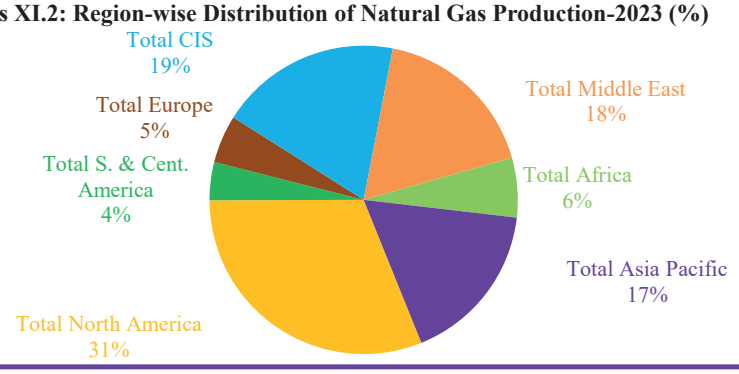
S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	US	840.9	928.1	924.8	944.5	993.4	1035.3	25.50
2	Russian Federation	669.1	679.0	638.4	702.1	618.4	586.4	14.45
3	Iran	220.1	228.3	235.8	242.8	247.7	251.7	6.20
4	China	161.4	176.7	194.0	209.2	221.8	234.3	5.77
5	Canada	176.8	169.6	165.6	172.3	184.8	190.3	4.69
6	Qatar	175.2	177.2	174.9	177.0	178.5	181.0	4.46
7	Australia	127.4	146.1	145.7	147.9	154.2	151.7	3.74
8	Norway	121.4	114.4	111.7	114.5	123.0	116.6	2.87
9	Saudi Arabia	112.1	111.2	113.1	114.5	116.7	114.1	2.81
10	Algeria	93.8	87.0	81.4	101.1	97.6	101.5	2.50
11	Malaysia	76.1	77.5	73.1	79.0	83.0	81.1	2.00
12	Turkmenistan	61.5	63.2	66.0	79.3	78.3	76.3	1.88
13	Indonesia	72.8	67.6	64.7	64.4	62.8	64.3	1.58
14	Egypt	58.6	64.9	58.5	67.8	64.5	57.1	1.41
15	United Arab Emirates	46.4	53.7	53.7	53.1	54.2	55.6	1.37
16	Uzbekistan	58.3	57.5	47.1	50.9	48.9	44.2	1.09
17	Nigeria	48.3	49.3	49.4	52.4	47.1	43.7	1.08
18	Oman	36.3	36.7	36.9	40.3	42.1	43.2	1.06
19	Argentina	39.4	41.6	38.3	38.6	41.7	41.6	1.02
20	Mexico	37.9	36.7	35.5	32.1	33.7	35.6	0.88
21	Azerbaijan	18.8	23.9	25.9	31.8	34.1	35.6	0.88
22	United Kingdom	40.6	39.3	39.6	32.8	38.1	34.5	0.85
23	**India**	**27.5**	**26.9**	**23.8**	**28.5**	**29.8**	**31.6**	**0.8**
24	Kazakhstan	39.2	33.5	30.6	26.7	27.6	30.8	0.76
25	Venezuela	31.6	25.6	21.6	28.1	29.1	29.7	0.73
26	Pakistan	34.2	32.7	30.6	32.7	28.7	27.8	0.68
27	Thailand	34.7	35.8	32.7	31.5	25.6	25.7	0.63
28	Trinidad & Tobago	34.0	34.6	29.5	24.7	26.0	25.0	0.62
29	Israel	9.9	10.0	14.7	18.3	20.8	23.5	0.58
30	Brazil	25.2	25.7	24.2	24.3	23.0	23.4	0.58
	Rest of World	315.8	309.9	284.4	280.4	273.2	266.3	6.56
Total World		**3845.3**	**3964.0**	**3866.2**	**4043.7**	**4048.6**	**4059.2**	**100.0**
of which: OECD		1434.4	1517.0	1497.3	1518.0	1599.6	1632.5	40.22
Non-OECD		2410.9	2447.1	2368.8	2525.7	2449.0	2426.8	59.78
European Union		69.0	61.0	47.9	44.3	40.8	34.4	0.85

Notes: 1. Total may not add up due to rounding off. P: Provisional

2. Excludes gas flared or recycled. Includes natural gas produced for Gas-to-Liquids transformation.

Source: Energy Institute Statistical Review of World Energy 2024

Figures XI.2: Region-wise Distribution of Natural Gas Production-2023 (%)



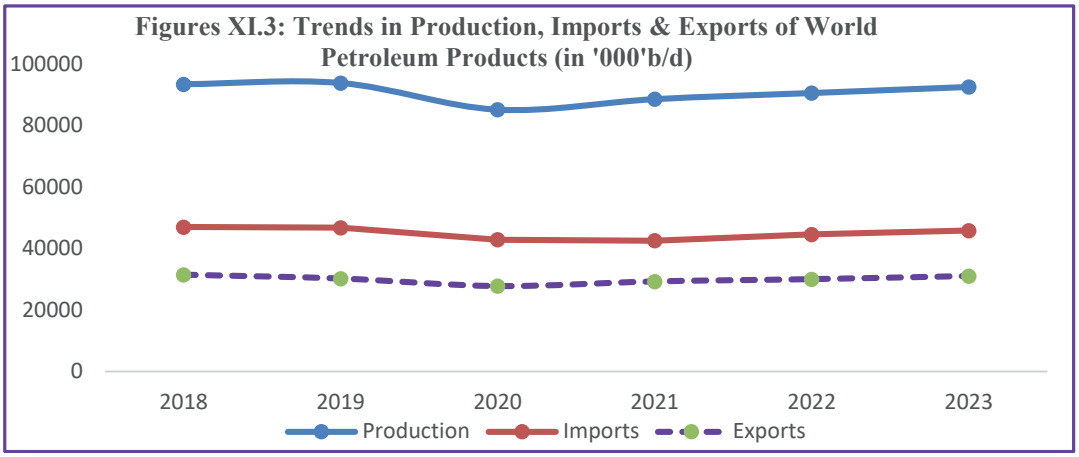
XI.7: World Output of Petroleum Products (Country-wise)

(Figures in Thousand barrels daily)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	United States	20685	20432	17489	18642	19393	19433	21.4
2	China	11608	12501	12952	13537	13013	14304	14.4
3	Russia	6264	6257	5912	6160	5985	6021	6.6
4	**India**	**5675**	**5665**	**5120**	**5426**	**5690**	**5962**	**6.3**
5	South Korea	3389	3397	3130	3149	3363	3376	3.7
6	Japan	3291	3279	2726	2730	2924	2764	3.2
7	Saudi Arabia	2817	2586	2177	2548	2768	2529	3.1
8	Canada	1889	2190	1962	2031	2140	2210	2.4
9	Brazil	1764	1787	1839	1903	2017	2152	2.2
10	Germany	2065	2076	1973	1981	2095	1883	2.3
11	I.R.Iran	1691	1705	1577	1673	1737	1775	1.9
12	Italy	1549	1521	1268	1401	1519	1479	1.7
13	Thailand	1410	1371	1418	1295	1316	1368	1.5
14	Netherlands	1302	1329	1183	1256	1237	1303	1.4
15	Spain	1398	1356	1150	1215	1305	1279	1.4
16	Kuwait	891	886	780	845	983	1244	1.1
17	United Kingdom	1254	1262	1025	1033	1157	1080	1.3
18	Singapore	1242	1236	1150	1192	1090	1068	1.2
19	France	1232	1121	805	769	892	991	1.0
20	Indonesia	1042	1024	1049	927	952	974	1.0
21	United Arab Emirates	1027	1005	925	1041	953	974	1.1
22	Iraq	718	747	587	740	834	928	0.9
23	Mexico	677	660	638	754	865	844	1.0
24	Turkey	589	772	732	784	851	839	0.9
25	Algeria	621	660	614	621	644	657	0.7
26	Belgium	702	734	579	646	600	645	0.7
27	Malaysia	494	574	512	447	566	611	0.6
28	Poland	592	600	564	555	594	556	0.7
29	Argentina	511	521	487	520	541	554	0.6
30	Egypt	519	570	596	587	563	529	0.6
Rest of World		14598	14066	12318	12240	12052	12273	13.3
Total World		**93504**	**93892**	**85238**	**88649**	**90639**	**92605**	**100**
of which: OPEC		8726	8445	7113	7904	8375	8549	9.2

Notes: Data may includge products from GTL and condensate units. Na: Not Available P: Provisional

Source : OPEC Annual Statistical Bulletins 2024



XI.8: World Crude Oil Consumption (Country-wise)

(Figures in Thousand barrels daily)

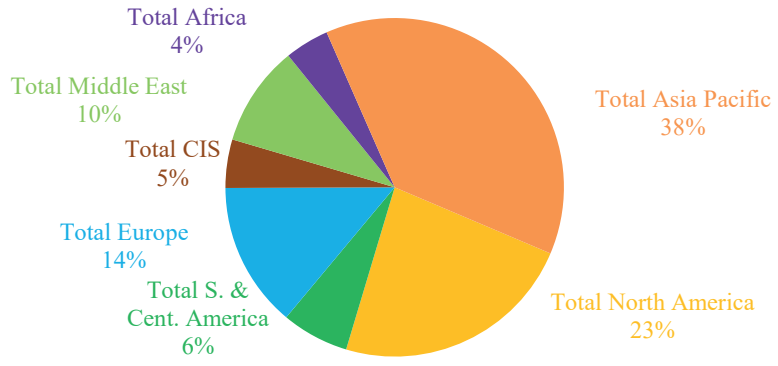
S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	US	19417	19424	17183	18785	18862	18984	18.9
2	China	13641	14316	14404	14888	14970	16577	16.5
3	**India**	**5004**	**5179**	**4738**	**4841**	**5209**	**5446**	**5.4**
4	Saudi Arabia	3871	3632	3437	3600	3854	4052	4.0
5	Russian Federation	3360	3425	3304	3523	3615	3635	3.6
6	Japan	3939	3846	3412	3485	3504	3366	3.4
7	South Korea	2783	2768	2630	2816	2856	2797	2.8
8	Brazil	2368	2361	2218	2394	2512	2567	2.6
9	Canada	2476	2486	2121	2219	2312	2351	2.3
10	Mexico	1918	1818	1602	1770	1931	1962	2.0
11	Germany	2247	2270	2047	2038	2072	1955	2.0
12	Iran	1722	1796	1722	1794	1853	1817	1.8
13	Indonesia	1618	1584	1403	1464	1597	1604	1.6
14	Singapore	1338	1310	1262	1247	1203	1359	1.4
15	France	1538	1528	1275	1373	1360	1348	1.3
16	United Kingdom	1564	1528	1183	1217	1309	1325	1.3
17	Spain	1262	1265	1016	1123	1245	1228	1.2
18	Thailand	1272	1285	1146	1160	1221	1221	1.2
19	Italy	1300	1259	1039	1156	1236	1221	1.2
20	United Arab Emirates	992	963	909	966	1110	1139	1.1
21	Turkey	1018	1025	970	1033	1072	1136	1.1
22	Australia	1075	1064	915	941	999	1056	1.1
23	Malaysia	804	867	729	699	837	930	0.9
24	Western Africa	803	816	800	879	916	884	0.9
25	Iraq	762	753	656	735	825	875	0.9
26	Netherlands	919	889	849	846	827	850	0.8
27	Taiwan	1014	958	916	968	888	840	0.8
28	Egypt	727	692	607	654	756	742	0.7
29	Poland	667	683	644	674	698	700	0.7
30	Argentina	645	567	504	613	723	690	0.7
Rest of World		15897	15866	13806	14830	15309	15567	15.5
Total World		**97964**	**98223**	**89448**	**94732**	**97683**	**100221**	**100**
of which: OECD		46759	46475	40887	43807	44770	44731	44.6
Non-OECD		51205	51748	48561	50925	52913	55489	55.4
European Union		11356	11318	9855	10390	10687	10488	10.5

Notes: 1. Total may not add up due to rounding off. P: Provisional

2. Inland demand plus international aviation and marine bunkers and refinery fuel and loss. Consumption of bio gasoline (such as ethanol) and biodiesel are excluded while derivatives of coal and natural gas are included.

Source: Energy Institute Statistical Review of World Energy 2024

Figures XI.4: Region-wise Distribution of Crude Oil Consumption-2023 (%)



XI.9: World Natural Gas Consumption (Country-wise)

(Figures in Billion cubic metres)

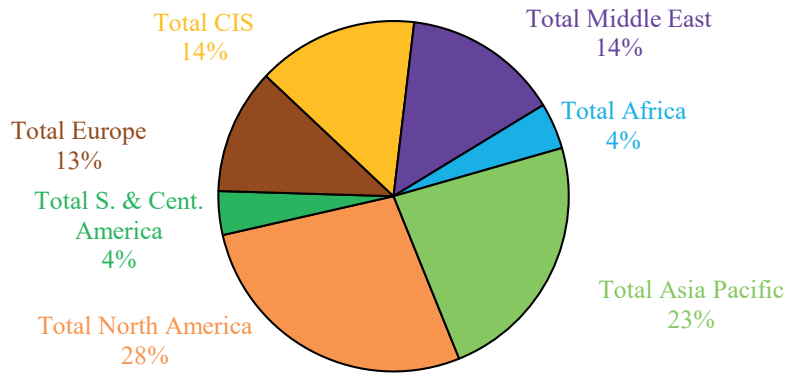
S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	US	822.0	851.0	834.5	836.4	879.6	886.5	22.1
2	Russian Federation	454.5	444.3	423.5	431.5	448.4	453.4	11.3
3	China	283.9	308.4	336.6	380.3	377.6	404.8	10.1
4	Iran	212.6	218.4	236.8	229.5	239.4	245.6	6.1
5	Canada	117.7	118.7	115.3	118.6	123.8	120.7	3.0
6	Saudi Arabia	112.1	111.2	113.1	114.5	116.7	114.1	2.8
7	Mexico	90.3	93.4	92.2	91.6	90.9	97.6	2.4
8	Japan	115.7	108.1	104.1	103.5	100.2	92.4	2.3
9	Germany	85.9	89.3	87.1	91.7	77.5	75.7	1.9
10	United Arab Emirates	59.6	67.2	67.9	65.5	66.1	66.9	1.7
11	United Kingdom	78.8	77.9	73.1	76.9	70.9	63.5	1.6
12	**India**	**58.0**	**59.2**	**60.4**	**62.4**	**58.3**	**62.6**	**1.6**
13	South Korea	57.8	56.0	57.5	62.4	62.4	60.1	1.5
14	Egypt	59.6	59.0	58.3	62.1	60.6	60.0	1.5
15	Italy	69.2	70.8	67.6	72.4	65.2	58.6	1.5
16	Turkey	47.2	43.4	46.2	57.3	51.2	48.4	1.2
17	Thailand	50.0	50.9	46.9	47.0	44.3	47.2	1.2
18	Uzbekistan	44.4	44.6	43.6	46.5	48.3	46.6	1.2
19	Algeria	43.4	45.1	43.4	48.2	50.3	46.3	1.2
20	Malaysia	44.7	45.2	43.6	51.4	51.9	46.1	1.1
21	Indonesia	45.3	45.5	42.6	42.9	44.0	45.4	1.1
22	Argentina	48.7	46.6	43.9	45.9	45.9	44.9	1.1
23	Qatar	40.3	41.4	38.4	40.1	40.3	44.2	1.1
24	Australia	37.2	44.1	42.3	39.6	43.2	40.1	1.0
25	Pakistan	43.6	44.5	41.2	44.9	38.2	37.8	0.9
26	Turkmenistan	28.4	27.7	34.3	36.8	37.5	36.8	0.9
27	France	42.8	43.7	40.6	43.0	38.4	33.9	0.8
28	Western Africa	23.6	24.3	26.0	34.5	33.0	32.0	0.8
29	Brazil	35.9	35.7	31.4	40.4	32.0	30.0	0.7
30	Venezuela	31.6	25.6	21.6	28.1	29.1	29.7	0.7
Rest of World		547.3	567.5	557.5	577.8	543.1	538.3	13.4
Total World		**3832.1**	**3908.4**	**3871.4**	**4023.9**	**4008.7**	**4010.2**	**100.0**
of which: OECD		1769.0	1811.1	1770.8	1808.1	1793.3	1757.0	43.8
Non-OECD		2063.1	2097.3	2100.6	2215.8	2215.4	2253.2	56.2
European Union		378.7	392.6	380.0	397.0	343.9	319.5	8.0

Notes: 1. Total may not add up due to rounding off. P: Provisional

2. Excludes gas flared or recycled. Includes natural gas produced for Gas-to-Liquids transformation.

4 Source: Energy Institute Statistical Review of World Energy 2024

Figures XI.5: Region-wise Distribution of Natural Gas Consumption-2023 (%)



XI.10: World Oil Refining Capacity (Country-wise)

(Figures in Thousand barrels daily*)

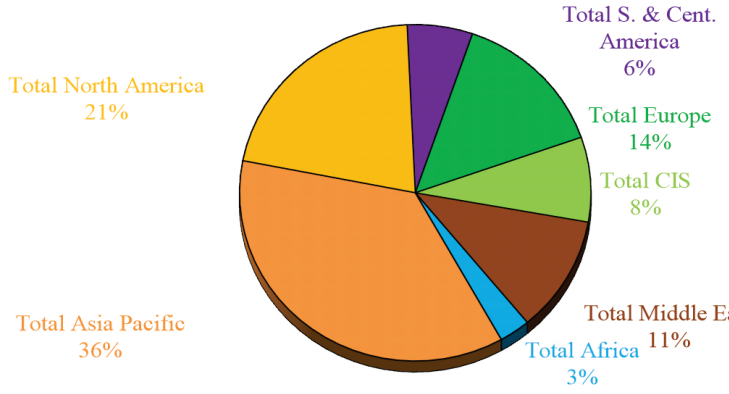
S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	China	15655	16199	16691	16990	17259	18484	17.9
2	US	18808	18974	18143	17941	18061	18429	17.8
3	Russian Federation	6551	6676	6736	6861	6821	6781	6.6
4	**India**	**4972**	**4994**	**5018**	**5005**	**5045**	**5085**	**4.9**
5	South Korea	3346	3393	3334	3363	3363	3363	3.2
6	Saudi Arabia	2835	2905	2947	2977	3224	3289	3.2
7	Japan	3343	3343	3285	3285	3164	3069	3.0
8	Iran	2330	2495	2475	2520	2550	2604	2.5
9	Brazil	2285	2290	2290	2303	2304	2290	2.2
10	Germany	2062	2062	2062	2121	2121	2076	2.0
11	Canada	1939	2054	2065	1954	1954	1954	1.9
12	Italy	1900	1900	1900	1900	1794	1794	1.7
13	Spain	1564	1586	1586	1591	1591	1591	1.5
14	Mexico	1558	1558	1558	1558	1558	1558	1.5
15	Kuwait	736	736	800	800	835	1309	1.3
16	Venezuela	1303	1303	1303	1303	1303	1303	1.3
17	Singapore	1514	1514	1514	1461	1302	1302	1.3
18	United Arab Emirates	1229	1307	1331	1246	1246	1259	1.2
19	Thailand	1235	1235	1245	1245	1245	1244	1.2
20	Indonesia	1094	1111	1094	1094	1180	1242	1.2
21	Netherlands	1299	1291	1244	1238	1241	1241	1.2
22	Iraq	849	919	919	919	1150	1219	1.2
23	United Kingdom	1227	1227	1251	1251	1219	1219	1.2
24	France	1245	1245	1245	1170	1145	1145	1.1
25	Taiwan	1083	1083	1131	1131	1083	1083	1.0
26	Malaysia	625	625	625	955	955	955	0.9
27	Turkey	818	822	822	822	822	822	0.8
28	Egypt	795	795	795	795	795	795	0.8
29	Algeria	657	657	657	657	657	657	0.6
30	Belgium	776	776	776	645	645	645	0.6
Rest of World		14756	14691	14767	14041	13768	13692	13.2
Total World		**100388**	**101767**	**101609**	**101139**	**101399**	**103498**	**100**
of which: OECD		45154	45503	44543	43701	43391	43654	42.2
Non-OECD		55235	56264	57066	57439	58008	59844	57.8
European Union		12735	12748	12643	12359	12217	12154	11.7

Notes: Total may not add up due to rounding off. P: Provisional

*: Atmospheric distillation capacity at year end on a calendar-day basis.

Source: Energy Institute Statistical Review of World Energy 2024

Figures XI.6: Region-wise Distribution of Refinery Capacity-2023 (%)



XI.11: World Oil Refinery Throughput (Country-wise)

(Figures in Thousand barrels daily*)

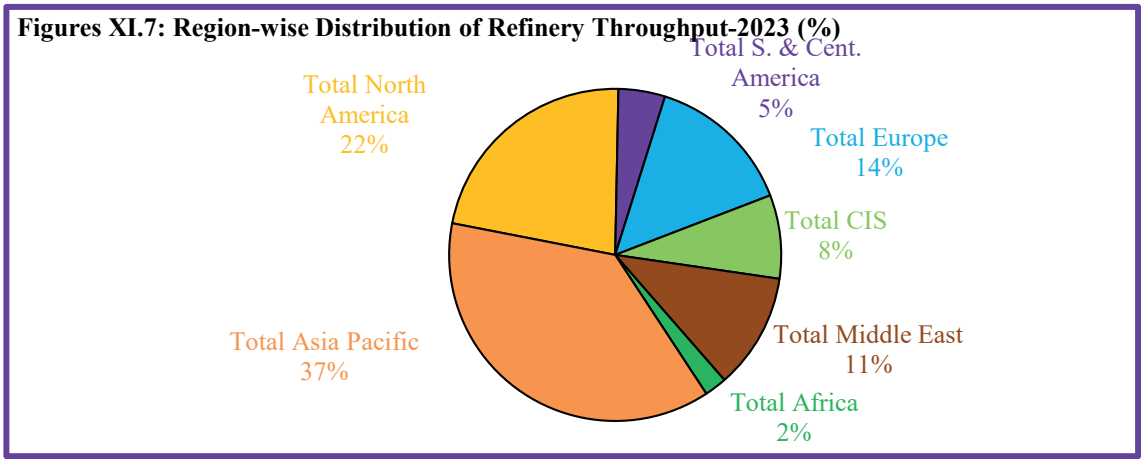
S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	US	16969	16563	14212	15148	15977	15963	19.2
2	China	12574	13433	13824	14461	13892	15102	18.2
3	Russian Federation	5864	5824	5504	5723	5534	5668	6.8
4	**India**	**5154**	**5119**	**4493**	**4792**	**5082**	**5249**	**6.3**
5	Saudi Arabia	2770	2649	2397	2766	3020	2810	3.4
6	South Korea	3031	2922	2679	2634	2811	2758	3.3
7	Iran	2087	2101	2193	2344	2391	2578	3.1
8	Japan	3059	3046	2492	2488	2694	2545	3.1
9	Brazil	1733	1751	1769	1818	1935	1987	2.4
10	Canada	1653	1822	1585	1653	1696	1716	2.1
11	Germany	1752	1763	1685	1690	1801	1598	1.9
12	Italy	1346	1355	1105	1224	1317	1292	1.6
13	Spain	1363	1318	1105	1143	1273	1243	1.5
14	Netherlands	1192	1217	1103	1151	1129	1201	1.4
15	United Arab Emirates	1096	1037	936	939	983	1064	1.3
16	Thailand	1093	990	982	976	1021	1054	1.3
17	Kuwait	679	663	539	643	807	1036	1.2
18	United Kingdom	1041	1044	880	889	1017	938	1.1
19	France	1085	978	665	683	829	913	1.1
20	Indonesia	916	918	826	824	845	895	1.1
21	Singapore	974	1000	861	871	888	857	1.0
22	Taiwan	889	890	726	770	815	807	1.0
23	Mexico	612	592	591	712	816	792	1.0
24	Turkey	472	673	655	692	736	726	0.9
25	Algeria	601	569	585	588	649	650	0.8
26	Belgium	663	693	545	577	558	606	0.7
27	Malaysia	566	586	491	571	584	582	0.7
28	Egypt	522	565	605	600	623	529	0.6
29	Argentina	470	476	417	472	489	519	0.6
30	Poland	540	546	516	497	535	503	0.6
Rest of World		10299	9686	8671	8814	8932	8809	10.6
Total World		**83068**	**82790**	**75634**	**79154**	**81680**	**82988**	**100**
of which: OECD		38914	38507	33460	34753	36570	36258	43.7
Non-OECD		44154	44282	42174	44401	45110	46730	56.3
European Union		10733	10542	9184	9396	9924	9870	11.9

Notes: Total may not add up due to rounding off. P: Provisional

*: Atmospheric distillation capacity on a calendar-day basis.

Source: Energy Institute Statistical Review of World Energy 2023

Figures XI.7: Region-wise Distribution of Refinery Throughput-2023 (%)



XI.12: World Imports of Crude Oil (Country-wise)

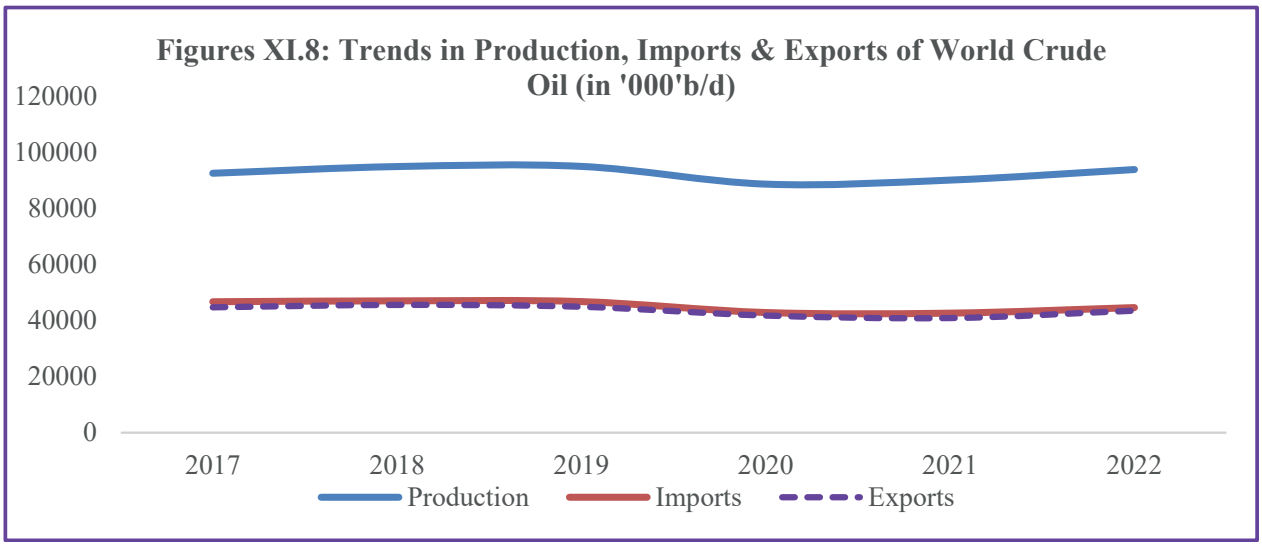
(Figures in Thousand barrels daily)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	China	9260	10180	10853	10301	10187	11309	24.6
2	United States	7768	6801	5875	6114	6281	6478	14.1
3	**India**	**4544**	**4507**	**4035**	**4202**	**4581**	**4674**	**10.2**
4	South Korea	3034	2924	2660	2613	2759	2735	6.0
5	Japan	3056	3023	2472	2493	2733	2546	5.5
6	Germany	1720	1737	1666	1641	1781	1558	3.4
7	Spain	1365	1339	1105	1134	1284	1243	2.7
8	Italy	1253	1275	1014	1145	1260	1236	2.7
9	Netherlands	1097	1153	998	1060	1074	1085	2.4
10	Thailand	942	932	837	863	920	957	2.1
11	France	1061	976	666	683	824	919	2.0
12	United Kingdom	892	910	713	734	848	830	1.8
13	Singapore	919	848	753	793	835	798	1.7
14	Turkey	423	627	591	634	676	634	1.4
15	Belgium	667	696	551	579	559	609	1.3
16	Canada	743	852	766	661	632	605	1.3
17	Greece	491	461	459	473	443	471	1.0
18	Malaysia	210	284	248	131	317	423	0.9
19	Sweden	402	344	375	363	381	350	0.8
20	Indonesia	336	209	232	206	311	333	0.7
21	Brazil	186	189	134	166	274	290	0.6
22	United Arab Emirates	42	53	163	187	187	257	0.6
23	Belarus	368	363	321	235	205	239	0.5
24	Bahrain	220	226	179	183	215	209	0.5
25	Chile	173	185	147	164	146	179	0.4
26	South Africa	437	445	307	179	147	169	0.4
27	Australia	361	328	238	207	170	153	0.3
28	Romania	170	178	142	140	179	151	0.3
29	Philippines	230	162	130	108	130	126	0.3
30	Bulgaria	117	141	97	91	142	125	0.3
31	Rest of World	4539	4444	4159	4071	4122	4198	9.1
Total World		**47025**	**46792**	**42888**	**42557**	**44604**	**45890**	**100**

Notes: Total may not add up due to rounding off. P: Provisional

1. Data may include lease condensate and volumes of oil in transit.

Source : OPEC Annual Statistical Bulletins 2024



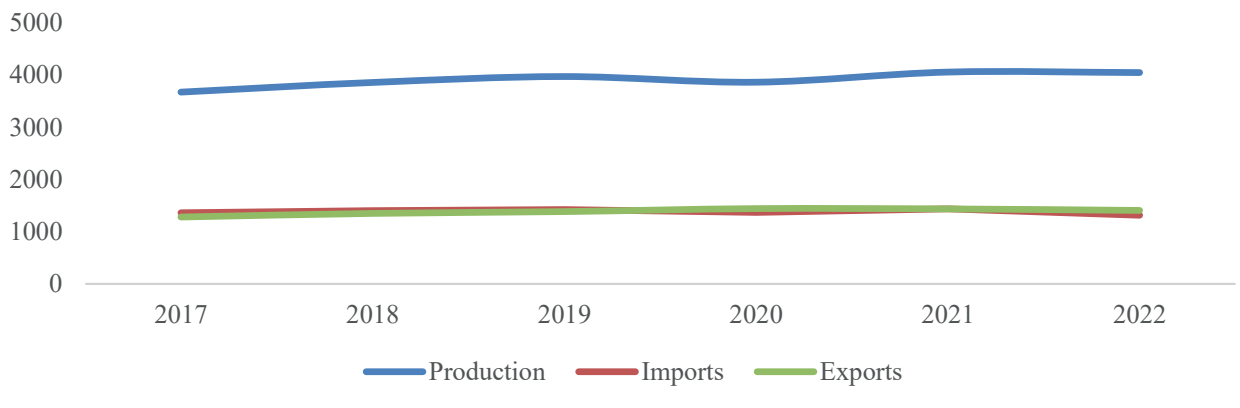
XI.13: World Imports of Natural Gas (Country-wise)

(Figures in Million Standard Cubic Metres)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	China	121280	129730	136520	162860	146720	162932	12.9
2	Germany	162392	158897	155493	154452	133624	88580	7.0
3	Japan	119372	111308	107286	98780	95697	86583	6.9
4	United States	81802	77641	72241	79516	85638	83130	6.6
5	Italy	67877	70912	66227	72728	72403	61856	4.9
6	South Korea	58022	53813	53559	60951	60951	59895	4.7
7	Netherlands	60895	59286	59922	57426	61933	59502	4.7
8	Mexico	54530	59250	58850	61830	59210	58152	4.6
9	Belgium	43641	43367	42696	41004	61082	52027	4.1
10	Turkey	50007	45212	48125	58701	54661	49683	3.9
11	France	49316	54670	46140	45410	55303	45946	3.6
12	United Kingdom	48177	47620	43925	51071	56524	45421	3.6
13	Spain	34817	37190	32489	36968	39675	35914	2.8
14	Canada	23175	26071	23684	24540	25428	25260	2.0
15	**India**	**29590**	**31500**	**33900**	**31070**	**25410**	**23559**	**1.9**
16	Thailand	14200	14370	14390	16060	17880	21767	1.7
17	United Arab Emirates	26050	22504	22653	21554	21770	20764	1.6
18	Poland	45170	44790	41039	39361	15196	17630	1.4
19	Belarus	18810	18750	17340	18300	17600	17000	1.3
20	Austria	49511	51374	45080	41460	31237	15023	1.2
21	Singapore	14500	14440	15570	15880	15050	14763	1.2
22	Iraq	4100	6104	7200	9738	9430	10118	0.8
23	Pakistan	8970	10700	9760	11000	8900	8697	0.7
24	Kuwait	4418	4509	5335	7024	7481	8190	0.6
25	Egypt	3060	-	2150	4110	6500	6907	0.5
26	Brazil	10810	9660	9820	17610	9140	6580	0.5
27	Russia	15100	19000	8590	13110	8350	4494	0.4
28	South Africa	4120	3950	3900	4300	4200	4053	0.3
29	Jordan	4030	2770	4170	3450	3720	4037	0.3
30	Argentina	10890	7330	7050	8180	5890	3887	0.3
Rest of World		314985	341141	347331	352713	324818	321971	25.5
Total World		**1432337**	**1448129**	**1405915**	**1458297**	**1394700**	**1261390**	**100**
of which: OPEC		40478	34387	35208	38316	38680	39072	3.1

Notes: Total may not add up due to rounding off. P: Provisional
1. Data may include lease condensate and volumes of oil in transit.
Source : OPEC Annual Statistical Bulletins 2024

Figures XI.9: Trends in Production, Imports & Exports of World Natural Gas (in BCM)



XI.14: World Imports of LNG (Country-wise)

(Figures in Billion Cubic Metres)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	China	73.45	84.75	94.02	110.13	87.04	97.81	17.8
2	Japan	112.97	105.50	101.74	101.20	97.99	90.32	16.5
3	South Korea	60.21	55.62	55.45	64.14	63.79	60.63	11.0
4	**India**	**30.50**	**32.44**	**36.60**	**33.83**	**28.45**	**31.02**	**5.7**
5	France	12.72	23.16	19.11	17.56	35.53	30.73	5.6
6	Taiwan	22.90	22.78	24.32	26.74	27.52	27.38	5.0
7	Spain	15.03	21.96	20.90	20.40	28.81	24.92	4.5
8	United Kingdom	7.16	17.11	18.56	15.03	26.05	19.40	3.5
9	Italy	8.16	13.50	12.50	9.51	14.66	16.33	3.0
10	Thailand	6.02	6.71	7.52	9.16	11.54	16.09	2.9
11	Turkey	11.44	12.86	14.83	13.91	15.10	14.75	2.7
12	Belgium	3.30	7.34	6.43	5.40	12.48	11.79	2.1
13	Pakistan	9.39	11.78	10.57	12.23	9.53	10.07	1.8
14	Kuwait	4.30	5.12	5.67	7.67	8.47	8.93	1.6
15	Singapore	4.50	4.95	5.73	5.02	5.26	6.83	1.2
16	Chile	4.30	3.34	3.68	4.49	3.35	3.58	0.7
17	Malaysia	1.80	3.33	3.64	2.31	3.85	3.21	0.6
18	Argentina	3.59	1.75	1.77	3.69	2.37	2.72	0.5
19	Brazil	2.87	3.22	3.34	10.13	2.27	1.30	0.2
20	United Arab Emirates	1.04	1.62	1.54	1.69	0.91	1.05	0.2
21	Mexico	6.87	6.57	2.51	0.89	0.59	0.92	0.2
22	US	2.12	1.46	1.29	0.59	0.70	0.46	0.1
23	Canada	0.62	0.54	0.85	0.72	0.29	0.23	^
24	Egypt	3.17	-	-	-	-	^	^
Rest of World		21.98	36.74	37.40	39.48	52.72	68.22	12.4
Total World		**430.43**	**484.16**	**489.96**	**515.94**	**539.27**	**548.71**	**100**

Notes: Total may not add up due to rounding off. ^: Less than 0.05. † :Less than 0.05 P: Provisional

Source: Energy Institute Statistical Review of World Energy 2024

XI.15: World Imports of Petroleum Products (Country-wise)

(Figures in Thousand barrels daily)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	China	1397	1389	1318	1428	1485	2090	7.3
2	United States	2174	2340	1988	2360	2048	2036	7.1
3	Singapore	2335	2244	2088	1977	1944	2034	7.1
4	Netherlands	1865	1798	1559	1745	1792	1633	5.7
5	**India**	**776**	**969**	**1066**	**1003**	**1057**	**1127**	**3.9**
6	South Korea	958	995	963	1080	1018	1034	3.6
7	Mexico	1090	1138	932	1004	1031	1000	3.5
8	Japan	976	896	919	1012	914	902	3.1
9	Australia	625	634	590	678	784	894	3.1
10	Malaysia	752	679	795	790	813	882	3.1
11	France	896	939	926	967	876	792	2.8
12	Germany	867	907	752	806	773	778	2.7
13	Indonesia	642	728	533	518	809	730	2.5
14	Brazil	640	725	606	738	774	695	2.4
15	United Kingdom	754	704	523	527	617	659	2.3
16	Turkey	573	444	382	400	431	541	1.9
17	Belgium	621	564	530	561	554	523	1.8
18	Nigeria	442	460	466	488	525	476	1.7
19	Saudi Arabia	898	319	353	361	360	433	1.5
20	Spain	362	365	308	310	329	329	1.1
21	Morocco	293	294	267	291	307	306	1.1
22	Italy	363	322	270	271	300	297	1.0
23	Canada	305	324	202	218	230	232	0.8
24	Egypt	278	264	149	203	184	210	0.7
25	Ukraine	213	222	221	241	183	188	0.7
26	Ecuador	194	188	165	170	164	180	0.6
27	Libya	137	144	147	133	128	145	0.5
28	United Arab Emirates	351	266	120	129	249	126	0.4
29	Iraq	89	96	77	107	113	104	0.4
30	IR Iran	101	98	92	99	91	95	0.3
Rest of World		7562	7495	6878	7077	7269	7312	25.4
Total World		**29529**	**28948**	**26185**	**27691**	**28153**	**28784**	**100**
of which: OPEC		2324	1620	1385	1450	1605	1429	5.0

Notes: Total may not add up due to rounding off.
1. Data may include lease condensate and volumes of oil in transit.

P: Provisional

Source : OPEC Annual Statistical Bulletins 2024

XI.16: World Exports of Crude Oil (Country-wise)

(Figures in Thousand barrels daily)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	Saudi Arabia	7372	7038	6659	6227	7364	6659	15.2
2	Russia	5207	5241	4617	4510	4780	4586	10.5
3	United States	2048	2982	3206	2963	3576	4058	9.3
4	Iraq	3862	3968	3428	3440	3712	3467	7.9
5	Canada	3178	3343	3143	3189	3341	3401	7.8
6	United Arab Emirates	2296	2414	2418	2305	2717	2651	6.0
7	Brazil	1147	1301	1401	1292	1346	1715	3.9
8	Norway	1254	1234	1502	1563	1558	1704	3.9
9	Kuwait	2050	1986	1826	1740	1879	1568	3.6
10	Nigeria	1979	2008	1879	1592	1388	1476	3.4
11	Kazakhstan	1401	1411	1417	1323	1315	1425	3.3
12	IR Iran	1850	651	404	763	901	1323	3.0
13	Mexico	1283	1200	1199	1091	1012	1085	2.5
14	Angola	1421	1319	1220	1080	1085	1064	2.4
15	Libya	999	1036	347	1091	920	1024	2.3
16	Oman	808	839	860	897	922	919	2.1
17	Venezuela	1273	847	487	448	438	550	1.3
18	United Kingdom	818	834	726	613	551	492	1.1
19	Colombia	595	609	539	422	487	484	1.1
20	Algeria	571	584	439	446	477	483	1.1
21	Qatar	477	485	464	474	475	472	1.1
22	Azerbaijan	609	559	500	483	441	389	0.9
23	Ecuador	367	398	352	316	313	309	0.7
24	Australia	215	249	253	268	257	258	0.6
25	Congo	307	309	282	251	243	249	0.6
26	Malaysia	358	287	280	210	203	211	0.5
27	Gabon	174	207	196	181	185	204	0.5
28	Bahrain	157	156	151	152	152	148	0.3
29	Sudans	115	138	135	138	116	136	0.3
30	Egypt	115	90	103	111	71	75	0.2
	Rest of World	1266	1178	1270	1231	1259	1242	2.8
Total World		**45571**	**44902**	**41704**	**40810**	**43484**	**43829**	**100**
of which: OPEC		22854	21159	18481	18577	20304	19707	45.0

Notes: Total may not add up due to rounding off. P: Provisional
Source : OPEC Annual Statistical Bulletins 2024

XI.17: World Exports of Natural Gas (Country-wise)

(Figures in Billion Cubic Metres)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	United States	102.16	131.88	149.64	188.38	195.49	215.52	15.6
2	Russia	248.47	258.24	236.88	244.31	169.94	175.75	12.7
3	Qatar	126.77	129.34	127.46	134.52	134.52	161.25	11.7
4	Norway	119.95	113.25	112.27	111.46	119.06	114.93	8.3
5	Australia	91.58	100.25	102.43	106.71	106.50	105.68	7.6
6	Canada	79.64	76.63	70.93	79.56	85.28	82.12	5.9
7	Algeria	51.42	42.78	39.46	54.76	48.92	52.04	3.8
8	Turkmenistan	36.40	36.37	32.00	39.69	43.10	46.97	3.4
9	Malaysia	33.65	35.56	34.21	36.78	39.23	38.43	2.8
10	Netherlands	54.48	47.66	39.98	43.28	41.13	38.22	2.8
11	Belgium	25.22	24.61	24.63	22.71	45.21	36.99	2.7
12	Nigeria	28.63	35.95	35.59	38.46	32.19	29.65	2.1
13	Azerbaijan	9.19	11.30	13.31	19.28	22.58	23.25	1.7
14	Indonesia	29.62	24.86	24.25	23.52	22.31	21.46	1.6
15	Germany	78.40	67.99	76.25	71.30	49.52	20.18	1.5
16	United Kingdom	7.61	8.04	9.60	6.82	23.48	15.85	1.1
17	Oman	13.12	13.43	12.81	13.34	14.79	14.85	1.1
18	France	5.93	10.79	9.10	5.79	15.23	14.09	1.0
19	IR Iran	12.24	12.35	11.52	18.43	18.79	12.93	0.9
20	Myanmar	11.31	12.24	11.37	11.35	11.30	9.99	0.7
21	Trinidad & Tobago	16.38	16.80	14.24	9.27	10.74	9.88	0.7
22	Denmark	1.54	1.34	1.71	1.74	2.15	8.39	0.6
23	Austria	41.58	40.15	38.62	36.71	19.11	8.28	0.6
24	Egypt	2.38	5.03	2.12	9.37	9.81	8.12	0.6
25	Bolivia	15.11	12.65	12.00	11.99	10.14	7.67	0.6
26	Spain	3.24	1.12	1.19	3.02	6.02	6.61	0.5
27	China	3.40	3.64	5.20	5.44	5.73	6.37	0.5
28	Brunei	8.27	8.59	7.99	7.30	6.17	5.50	0.4
29	Kazakhstan	17.55	17.84	12.64	12.15	7.35	5.41	0.4
30	Angola	5.49	5.90	6.37	5.08	7.54	5.09	0.4
Rest of World		152.97	168.97	142.57	117.09	90.30	81.18	5.9
Total World		**1433.69**	**1475.56**	**1418.32**	**1489.58**	**1413.62**	**1382.65**	**100**
of which: OPEC		110.99	110.72	103.65	127.26	115.40	105.01	7.6

Notes: Total may not add up due to rounding off. P: Provisional
Source : OPEC Annual Statistical Bulletins 2024

XI.18: World Exports of Petroleum Products (Country-wise)

(Figures in Thousand barrels daily)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	United States	5553	5489	5292	5573	5944	6092	19.6
2	Russia	2510	2554	2417	2385	2277	2299	7.4
3	Netherlands	2306	2247	1918	2258	2193	2158	6.9
4	Singapore	1777	1622	1440	1426	1487	1606	5.2
5	South Korea	1432	1409	1259	1206	1346	1337	4.3
6	China	1276	1460	1324	1289	1146	1336	4.3
7	**India**	**1344**	**1360**	**1216**	**1284**	**1312**	**1313**	**4.2**
8	Saudi Arabia	1971	1300	1017	1344	1468	1273	4.1
9	United Arab Emirates	916	882	840	891	903	1143	3.7
10	Malaysia	663	646	775	877	938	1126	3.6
11	Kuwait	630	637	527	604	711	965	3.1
12	Belgium	622	608	502	541	513	561	1.8
13	Algeria	532	506	503	493	509	515	1.7
14	Italy	579	557	462	531	526	507	1.6
15	Germany	461	449	454	522	564	502	1.6
16	Japan	548	609	385	401	510	489	1.6
17	Qatar	579	466	433	456	466	470	1.5
18	Canada	444	482	418	439	411	431	1.4
19	IR Iran	272	285	281	333	383	408	1.3
20	United Kingdom	483	451	395	392	452	405	1.3
21	Spain	453	420	398	396	359	380	1.2
22	France	424	367	278	278	296	308	1.0
23	Sweden	347	230	201	323	307	302	1.0
24	Norway	416	428	388	379	295	297	1.0
25	Brazil	171	217	284	246	253	274	0.9
26	Bahrain	239	250	214	218	234	227	0.7
27	Venezuela	226	97	70	67	176	201	0.6
28	Iraq	45.67	106.61	151.04	158.13	172.07	198	0.6
29	Mexico	141	115	139	170	199	193	0.6
30	Libya	25	21	66	89	99	91	0.3
Rest of World		4119	3978	3732	3728	3587	3661	11.8
Total World		**31504**	**30250**	**27778**	**29298**	**30037**	**31067**	**100.0**
of which: OPEC		4655	3869	3467	4005	4437	4811	15.5

Notes: Total may not add up due to rounding off. P: Provisional

Source : OPEC Annual Statistical Bulletins 2023

XI.19: Spot Reference Basket and Correponding Components' Spot Prices

(Figures in US $/bbl.)

Country	Crude	2018	2019	2020	2021	2022	2023 (P)	% Variation in 2023 over 2022
1	2	3	4	5	6	7	8	9
Algeria	Saharan Blend	71.44	64.49	42.12	70.89	104.24	83.64	-19.8
Congo	Djeno	68.59	61.80	35.77	63.35	93.65	75.12	-19.8
Equatorial Guinea	Zafiro	71.36	65.74	41.54	71.09	102.88	83.42	-18.9
Gabon	Rabi Light	70.30	63.18	40.22	70.34	100.64	82.11	-18.4
IR Iran	Iran Heavy	67.97	61.85	40.77	69.80	99.92	83.13	-16.8
Iraq	Basrah Light	68.62	63.64	41.55	69.86	97.33	80.68	-17.1
Kuwait	Kuwait Export	68.90	64.25	41.49	70.50	101.19	84.26	-16.7
Libya	Es Sider	69.78	63.81	40.06	69.16	101.28	82.21	-18.8
Nigeria	Bonny Light	72.11	65.63	41.53	70.63	103.63	83.46	-19.5
Saudi Arabia	Arab Light	70.59	64.96	41.91	70.65	101.64	84.94	-16.4
United Arab Emirates	Murban	72.20	64.72	42.98	70.09	98.89	82.85	-16.2
Venezuela	Merey	64.47	54.04	28.12	51.45	76.96	64.37	-16.4
OPEC	**ORB**	**69.78**	**64.04**	**41.47**	**69.89**	**100.08**	**82.95**	**-17.1**

Source : OPEC Annual Statistical Bulletins 2024 P: Provisional

XI.20: Spot Prices of Petroleum Products in Major Markets

(Figures in US $/bbl.)

Product	Specifications	2018	2019	2020	2021	20222	2023 (P)	% Variation in 2023 over 2022
1	2	3	4	5	6	7	8	9
US Gulf								
Gasoline	Regular unleaded 87	80.17	72.70	47.80	86.72	123.34	104.59	-15.2
Ulta low sulphur Diesel	15ppm sulphur	-	79.60	50.80	85.10	145.80	115.10	-21.1
Fuel Oil	3.0 % sulphur	60.17	52.55	34.72	59.84	76.84	68.14	-11.3
Singapore								
Gasoline	Premium unleaded 87	81.30	74.15	47.61	81.66	117.52	100.72	-14.3
Gas Oil	0.05% sulphur	84.05	77.22	48.36	75.96	130.65	104.01	-20.4
Fuel Oil	380 centistokes	64.74	56.70	37.53	62.07	76.63	69.23	-9.7
Rotterdam								
Gasoline	Premium unleaded 98	87.34	79.52	51.34	85.89	136.26	125.96	-7.6
Gas Oil	10ppm sulphur	85.94	79.50	49.17	78.31	142.32	111.19	-21.9
Fuel Oil	3.5% sulphur	59.04	48.90	33.27	60.09	75.42	69.45	-7.9

Note: US Gulf and Singapore apply to cargo. Rotterdam prices apply to barge size lots.

Source : OPEC Annual Statistical Bulletins 2024

XI.21: Oil Trade Movements

(Figures in Thousand Barrels daily)

Country/Year	2018	2019	2020	2021	2022	2023 (P)	% share in Total 2023
1	2	3	4	5	6	7	8
Imports							
US	9927	9142	7865	8474	8341	8539	12.5
Europe	14338	14322	12836	12969	14128	12811	18.8
China	11028	11865	12598	12501	12143	13717	20.1
India	5196	5376	4898	5302	5753	5770	8.5
Japan	3940	3780	3310	3350	3465	3332	4.9
Rest of World	25580	25617	27867	23903	24567	23955	35.2
Total World	70009	70101	69374	66500	68397	68124	100
Exports							
Canada	4498	4667	4398	4656	4679	4836	7.1
Mexico	1302	1252	1247	1216	1173	1271	1.9
US	7039	8010	8136	7959	8549	9108	13.4
S. & Cent. America	3711	3424	3567	3034	2843	3417	5.0
Europe	3349	3240	3650	2848	2640	2340	3.4
Russia	8026	8090	7397	7816	7821	6736	9.9
Other CIS	2051	2080	2069	2090	2069	2170	3.2
Saudi Arabia	8462	8349	8012	7778	8767	8282	12.2
Middle East	16038	14915	13693	14228	15346	15018	22.0
North Africa	2765	2794	1836	2361	2061	2025	3.0
West Africa	4516	4728	4268	3953	3580	3285	4.8
Asia Pacific (ex Japan)	6440	6591	5705	6414	6575	7294	10.7
Rest of World	1811	1959	5398	2148	2295	2341	3.4
Total World	**70009**	**70101**	**69374**	**66500**	**68397**	**68124**	**100**

Note: Bunker fuel use is not included as exports. Intra-area movements (for example, between countries within Europe) are excluded.

Source: Energy Institute Statistical Review of World Energy 2023

XI.22: World Primary Energy Consumption by Fuel: 2023

(Figures in Exajoules)

S. No.	Country	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electricity	Renewables	Total
1	2	3	4	5	6	7	8	9
1	China	32.73	14.57	91.94	3.90	11.46	16.13	170.74
2	US	35.86	31.91	8.20	7.32	2.21	8.78	94.28
3	**India**	**10.57**	**2.25**	**21.98**	**0.43**	**1.39**	**2.38**	**39.02**
4	Russian Federation	7.21	16.32	3.83	1.95	1.88	0.10	31.29
5	Japan	6.65	3.33	4.54	0.70	0.70	1.49	17.40
6	Canada	4.35	4.35	0.37	0.80	3.41	0.68	13.95
7	Brazil	5.11	1.08	0.57	0.13	4.01	2.97	13.87
8	Iran	3.50	8.84	0.08	0.06	0.21	0.02	12.71
9	South Korea	5.36	2.16	2.69	1.62	0.03	0.56	12.43
10	Saudi Arabia	7.43	4.11	0.00	-	-	0.05	11.60
11	Germany	4.01	2.72	1.83	0.06	0.18	2.60	11.41
12	Indonesia	3.10	1.64	4.32	-	0.23	0.83	10.11
13	France	2.76	1.22	0.18	3.03	0.52	0.95	8.66
14	Mexico	3.84	3.51	0.26	0.11	0.19	0.54	8.45
15	Turkey	2.30	1.74	1.65	-	0.60	0.71	7.00
16	United Kingdom	2.69	2.29	0.18	0.37	0.05	1.38	6.95
17	Australia	2.17	1.44	1.51	-	0.14	0.76	6.02
18	Italy	2.47	2.11	0.22	-	0.36	0.78	5.95
19	Spain	2.57	1.05	0.12	0.51	0.24	1.17	5.66
20	United Arab Emirates	2.20	2.41	0.10	0.29	-	0.13	5.13
21	Thailand	2.31	1.70	0.60	-	0.06	0.33	5.01
22	Vietnam	1.20	0.26	2.32	-	0.76	0.36	4.89
23	South Africa	1.09	0.17	3.33	0.08	0.02	0.18	4.85
24	Malaysia	1.79	1.66	0.98	-	0.29	0.08	4.81
25	Taiwan	1.63	1.01	1.49	0.16	0.04	0.20	4.53
26	Poland	1.41	0.70	1.51	-	0.02	0.48	4.12
27	Egypt	1.49	2.16	0.05	-	0.13	0.10	3.94
28	Argentina	1.41	1.62	0.05	0.08	0.28	0.24	3.67
29	Singapore	2.99	0.44	0.01	-	-	0.02	3.47
30	Netherlands	1.70	0.93	0.16	0.04	0.00	0.61	3.44
Rest of World		32.52	24.65	8.96	2.92	10.23	4.97	84.26
Total World		**196.43**	**144.37**	**164.03**	**24.57**	**39.65**	**50.58**	**619.63**
of which: OECD		87.15	63.25	25.15	16.44	12.96	24.96	229.90
Non-OECD		109.29	81.11	138.88	8.13	26.69	25.62	389.73
European Union		21.45	11.50	5.48	5.56	3.05	9.35	56.38

Notes: Total may not add up due to rounding off.

1. Primary energy comprises commercially traded fuels, including modern renewables used to generate electricity.
2. Energy from all sources of non-fossil power generation is accounted for on an input-equivalent basis.
3. Conversion factor used for Oil as per product basket of 1 Mtoe = 0.0431 Exajoules, for all other fuels 1 Mtoe = 0.0419 Exajoules.
4. All figures are provisional

Source: Energy Institute Statistical Review of World Energy 2024

Figure XI.10: Distribution of India's Primary Energy Consumption by Fuel during 2023 (%)

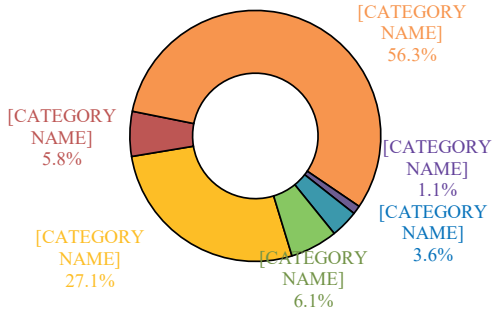
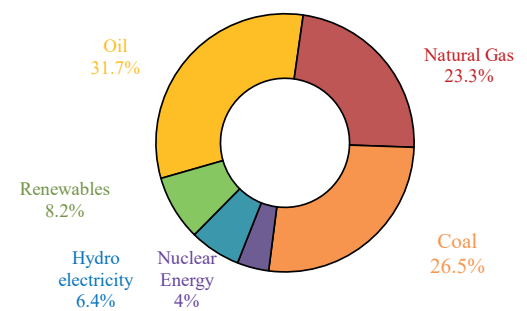


Figure XI.11: Distribution of World's Primary Energy Consumption by Fuel during 2023 (%)



XI.23: Primary Energy Consumption of the World

(Figures in Exajoules)

S. No.	Country	2018	2019	2020	2021	2022	2023 (P)	% Share of Total 2023
1	2	3	4	5	6	7	8	9
1	China	138.27	144.68	149.38	157.85	160.26	170.74	27.6
2	US	96.37	95.68	88.64	93.44	95.42	94.28	15.2
3	**India**	**32.72**	**33.54**	**31.78**	**34.51**	**36.37**	**39.02**	**6.3**
4	Russian Federation	30.36	30.13	29.08	30.01	31.08	31.29	5.0
5	Japan	19.14	18.74	17.37	18.13	18.02	17.40	2.8
6	Canada	14.72	14.64	13.76	13.92	14.30	13.95	2.3
7	Brazil	12.51	12.72	12.22	12.85	13.44	13.87	2.2
8	Iran	11.15	11.75	12.20	11.96	12.48	12.71	2.1
9	South Korea	12.61	12.47	12.05	12.62	12.75	12.43	2.0
10	Saudi Arabia	11.17	10.68	10.39	10.73	11.34	11.60	1.9
11	Germany	13.64	13.30	12.40	12.76	12.29	11.41	1.8
12	Indonesia	7.75	8.28	7.79	7.97	10.05	10.11	1.6
13	France	10.04	9.83	8.79	9.34	8.27	8.66	1.4
14	Mexico	8.15	8.07	7.35	7.83	8.18	8.45	1.4
15	Turkey	6.44	6.66	6.56	7.02	7.10	7.00	1.1
16	United Kingdom	8.09	7.92	7.10	7.17	7.27	6.95	1.1
17	Australia	5.85	6.05	5.71	5.72	5.98	6.02	1.0
18	Italy	6.67	6.55	5.95	6.37	6.19	5.95	1.0
19	Spain	5.86	5.70	5.12	5.51	5.73	5.66	0.9
20	United Arab Emirates	4.14	4.39	4.34	4.49	4.88	5.13	0.8
21	Thailand	5.32	5.33	4.95	4.99	5.00	5.01	0.8
22	Vietnam	3.90	4.33	4.34	4.35	4.48	4.89	0.8
23	South Africa	5.12	5.35	5.01	5.06	4.87	4.85	0.8
24	Malaysia	4.35	4.47	4.31	4.49	4.79	4.81	0.8
25	Taiwan	4.88	4.79	4.65	4.94	4.75	4.53	0.7
26	Poland	4.40	4.27	4.10	4.41	4.27	4.12	0.7
27	Egypt	3.86	3.78	3.56	3.81	3.98	3.94	0.6
28	Argentina	3.54	3.34	3.13	3.45	3.71	3.67	0.6
29	Singapore	3.42	3.35	3.28	3.28	3.17	3.47	0.6
30	Netherlands	3.70	3.68	3.56	3.65	3.44	3.44	0.6
Rest of World		83.32	83.59	78.74	83.97	83.50	84.26	13.6
Total World		**581.47**	**588.05**	**567.60**	**596.62**	**607.35**	**619.63**	**100**
of which: OECD		240.65	238.53	221.91	232.56	233.55	229.90	37.1
Non-OECD		340.81	349.52	345.69	364.07	373.80	389.73	62.9
European Union		62.79	61.76	57.11	60.21	57.85	56.38	9.1

Notes: Total may not add up due to rounding off. P: Provisional

1. Primary energy comprises commercially traded fuels, including modern renewables used to generate electricity.
2. Energy from all sources of non-fossil power generation is accounted for on an input-equivalent basis.
3. Conversion factor used for Oil as per product basket of 1 Mtoe = 0.0431 Exajoules, for all other fuels 1 Mtoe = 0.0419 Exajoules.

Source: Energy Institute Statistical Review of World Energy 2023

XI.24: Per Capita Primary Energy Consumption-International Comparisons: 2023

(Figures in Kg. Oil Equivalent)

S. No.	Country	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electricity	Renewables	Total	Population (Million) Mid-2024
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	China	539	247	1558	66	194	273	2877	1409
2	US	2472	2263	581	519	157	622	6614	337
3	**India**	**170**	**37**	**364**	**7**	**23**	**39**	**641**	**1442**
4	Russian Federation	1146	2668	627	319	307	16	5082	146
5	Japan	1247	641	875	134	134	288	3319	124
6	Canada	2439	2505	214	461	1963	390	7972	41
7	Brazil	559	122	64	15	451	335	1546	212
8	Iran	887	2303	21	16	55	5	3287	92
9	South Korea	2402	996	1241	746	16	258	5660	52
10	Saudi Arabia	4912	2794	3	-	-	37	7746	35
11	Germany	1096	766	-	-	-	731	2593	85
12	Indonesia	255	139	366	-	19	70	849	282
13	France	967	439	64	1093	187	341	3091	66
14	Mexico	688	648	49	21	35	99	1539	129
15	Turkey	625	487	461	-	167	199	1939	85
16	United Kingdom	901	788	63	-	17	475	2245	69
17	Australia	1841	1263	1319	-	125	664	5211	27
18	Italy	972	853	88	-	147	316	2377	59
19	Spain	1221	516	58	249	117	574	2734	49
20	United Arab Emirates	5272	5925	252	-	-	319	11767	10
21	Thailand	748	565	201	-	-	110	1625	72
22	Vietnam	274	61	548	-	179	84	1147	101
23	South Africa	400	65	1260	30	6	66	1827	63
24	Malaysia	1212	1157	686	-	206	59	3320	34
25	Taiwan	1614	1022	1513	-	38	204	4391	24
26	Poland	867	447	956	-	14	303	2588	38
27	Egypt	326	485	11	-	29	23	875	106
28	Argentina	694	820	23	41	142	121	1840	47
29	Singapore	11205	1709	54	-	-	71	13038	6
30	Netherlands	2195	1230	210	47	-	810	4492	18
Rest of World		267	208	76	25	86	42	704	2824
Total World		**564**	**426**	**484**	**73**	**117**	**149**	**1813**	**8083**

Notes: Total may not add up due to rounding off.

1. Primary energy comprises commercially traded fuels, including modern renewables used to generate electricity.
2. Energy from all sources of non-fossil power generation is accounted for on an input-equivalent basis.
3. Conversion factor used for Oil as per product basket of 1 Mtoe = 0.0431 Exajoules, for all other fuels 1 Mtoe = 0.0419 Exajoules.
4. Population 2024 data have been taken from "Population Reference Bureau"
5. All figures are provisional

Source: Energy Institute Statistical Review of World Energy 2023

Appendices



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
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.
NEL	Nyara Energy Ltd. (Formerly known as Essar Oil 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

Contd....

(IV) Others(Contd.)

Int. Con.	Internal Consumption
JV	Joint Venture
K.Cal	Kilocalories
K.g	Kilogram.
KG - D6	Krishna Godavari Dhirubhai 6
Kl	Kilo litre
KM	Kilometer
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	1 Cubic Decimetre
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 (mm2).
1 Square Foot	0.0929030 Square Metre (m2).
1 Square Yard	9 Square Feet.
	0.836127 Square Metre (m2).
1 Square Metre	10.7639 Square Feet.
	1.19599 Square Yards.
1 Acre	4840 Square Yards
	4046.86 Sq. Metres (m2)
	0.404686 Hectares.
1 Hectare	10,000 Square Metres (m2).
	2.47105 Acres.
	0.01 Square Kilometre (km2)
1 Square Kilometre	100 Hectares.
	0.386102 Square Mile.
1 Square Mile	640 Acres.
	258.999 Hectares
	2.58999 Square Kilometre (km2).

(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
1Metric 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 (cm3)
1 Pint	0.568261 Cubic Decimetres (dm3) or Litres.
1 Litre	61.024 Cubic Inches
	1.75975 Pints
	1 Cubic Decimeter (dm3)
	0.264172 American Gallons
	0.219963 Imperial Gallons
	0.0353147 Cubic Foot
1 Hectolitre	100 Cubic Decimetres (dm3) 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.
	0.00378541 Cubic Metre (M3)
1 Imperial Gallon	277.420 Cubic Inches
	4.54609 Cubic Decimetres (dm3) or Litres
	1.20095 American Gallon
	0.160544 Cubic Foot
	0.02894 American Barrel
	0.00454609 Cubic Metre (m3)
1 Cubic Foot	28.3168 Cubic Decimetres (dm3) or Litres
	7.48052 American Gallons
	6.22883 Imperial Gallons
	0.17811 American Barrel
	0.0283168 Cubic Metre (m3)
1 Americal Barrel	9702 Cubic Inches
	158.987 Cubic Decimetres (dm3) or Litres
	42 American Gallons
	34.9726 Imperial Gallons
	5.6146 Cubic Feet
	0.158987 Cubic Metre (M3)
1 Cubic Metres	1000 Litres.
	264.172 American Gallons
	219.969 Imperial Gallons
	35.3147 Cubic Feet
1 Kilolitre	1000 Cubic Decimetres (dm3) or Litres
	6.28981 Americal Barrels.
1 Gross Ton (Shipping)	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	0.8569	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 150 C to 29.50 C

Product	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	
1 Cubic Metre	= 35.31 Cubic feet	
1 BCM(Billion Cubic Metre) / Year of gas (consumption or production)	= 2.74 MMSCMD	365 Days a Year
1 TCF (Trillion Cubic Feet) of Gas Reserve	= 3.88 MMSCMD	100% Recoverable for 20 years @ 365 days/ annum)
1 MMTPA of LNG	=3.60 MMSCMD	Molecular Weight of 18 @ 365 days/ annum)
1 MT of LNG	=1314 SCM	Molecular Weight of 18
Gross Calorific Value (GCV)	10000 Kcal/ SCM	
Net Calorific Value (NCV)	90% of GCV	
1 Million BTU (MMBTU)	= 25.2 SCM	@10000 Kcal/SCM; 1 MMBTU= 252,000 Kcal)
Specific Gravity of Gas	0.62	Molecular Weight of Dry Air=28.964 gm/mole)
Density of Gas	=0.76 Kg/SCM	Molecular Weight of Gas 18 gm/mol
Gas required for 1 MW of Power generation	=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:

(a) Represent average global factor for crude Oil/NGL production. For a specific crude oil, relevant conversion factors may have to be used.

(b) Factor used by United Nations to represent average calorific value of hard coals for purposes of standardising coal production to hard coal equivalent base.

(c) Calorific value of 1kwh of electricity.

(d) 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 15^{0}C, 013.25 mbar, dry.

(XXI) Coal Replacement and Equivalents of different Fuels

Fuels	Original Unit	Unit million tonnes of coal equivalent (mtce)	Unit 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)	109m3	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	12 thousand million KWH
(1 Kwh=3412 BTU)	
(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

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स्वच्छ भारत
एक कदम स्वच्छता की ओर

पहल

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Pradhan Mantri UJJWALA Yojana

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