FIPI

Federation of Indian Petroleum Industry

POLICY & ECONOMIC REPORT

OIL & GAS MARKET

DECEMBER 2023

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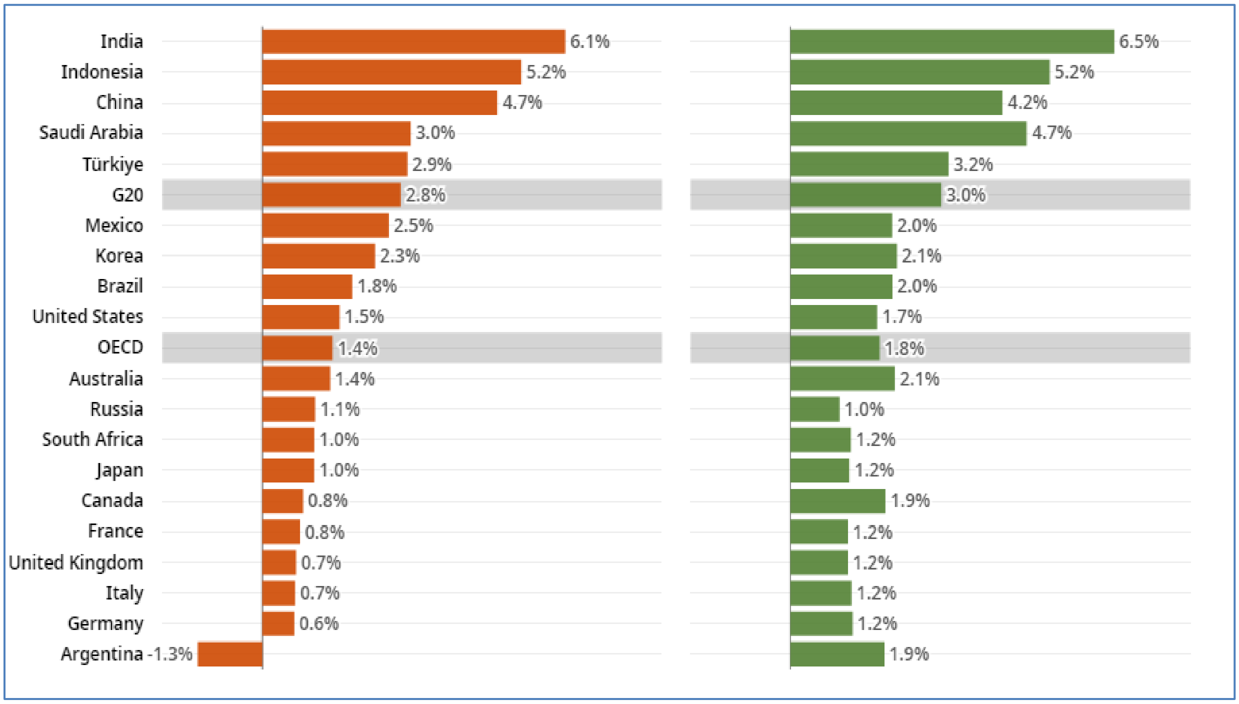
Executive Summary

According to Organization for Economic Cooperation and Development (OECD), global economic growth is projected to be 2.9% in 2023, and is expected to fall to 2.7% in 2024. The economic growth has been moderating on the back of tighter financial conditions, weak trade growth and lower business and consumer confidence. Further, risks related to the heightened geopolitical tensions, due to the evolving conflict between Hamas-Israel; and the impact of monetary policy tightening has also led to lower economic growth forecast.

Figure 1: GDP growth projections for FY 2024 and FY 2025 (% year on year growth)



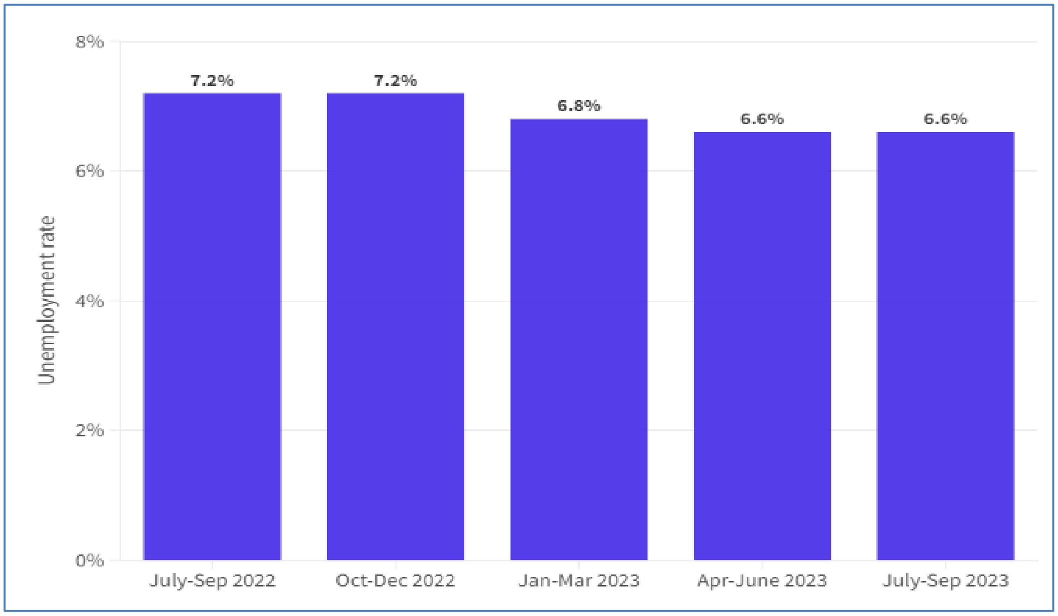
Source- OECD Economic Outlook

As far as India is concerned, according to RBI's forecast for India's GDP growth, Indian economy is expected to grow at 7 per cent in FY24, 6.5 per cent and 6 per cent in Q3 and Q4 respectively. The GDP growth rate in the first three quarters of FY25 has been pegged at 6.7 per cent, 6.5 per cent and 6.4 per cent respectively. Further, Finance Minister Nirmala Sitharaman said that India retained its tag as the world's fastest-growing major economy, as India's GDP grew at 7.6 per cent in Q2FY24, the highest in the world. The growth in economic activity is attributed to rising manufacturing activity as the manufacturing sector is contributing 13.9 per cent to the economy.

According to RBI, CPI inflation rose to 5.6 per cent in November 2023, as there was recurrence of food price spikes but it is expected to ease to 4.6 per cent in the first three quarters of 2024-25. The central bank projects inflation in for Q3 and Q4 at 5.6% and 5.2%, respectively and the inflation for FY 2023-24 is projected at 5.4 per cent. For the next fiscal year - FY 2024-25, CPI inflation for Q1FY25 is projected at 5.2 per cent; Q2 at 4.0 per cent; and Q3 at 4.7 per cent.

- The unemployment rate in urban areas of the country decreased from 7.2% in July-September, 2022 to 6.6% in July–September 2023 according to the Periodic Labour Force Survey (PLFS) conducted by the National Sample Survey Office (NSSO).

Figure 2: Unemployment rate in urban areas



Source- Periodic Labor Force Survey

India's overall exports (Merchandise and Services combined) in November 2023 is estimated to be USD 62.58 Billion, exhibiting a growth of 1.23 per cent over November 2022. Overall imports in November 2023 are estimated to be USD 67.88 Billion, exhibiting a negative growth of (-) 6.16 per cent over November 2022.

As far as oil and gas industry is concerned, crude spot prices averaged lower in November, extending the previous month's losses. The decline in prices was more pronounced in light sweet benchmarks Brent and WTI, in a sign that the supply of light sweet crude in and around their respective trading hubs was higher than demand. This was also reflected in the market structure of WTI, which flipped into contango. Weak gasoline and naphtha crack spreads in the US added downward pressure on light sweet crudes.

High crude supply availability in Northwest Europe, mainly supply from the US Gulf Coast (USGC), weighed on the value of crude differentials in the Atlantic Basin and pushed the value of the North Sea Dated benchmark lower. A large build in US crude Graph 1 - 1: Crude oil price movements stocks along with the rise of Cushing, Oklahoma, crude stocks, the delivery point of WTI futures, weighed on the value of WTI. The Dubai benchmark fell the least among the other benchmarks as demand from Asian refiners limited declined. The strength of the sour crude market in Asia was also reflected in the sharp decline of the front-month Brent/Dubai Exchange of Futures for Swaps (EFS), which dropped to a discount.

Hedge funds and other money managers turned more bearish about crude oil, closing a large volume of bullish futures and options positions, specifically in the NYMEX WTI market. Simultaneously, they raised bearish positions for nine consecutive weeks to the week of 28 November 2023. This has fuelled volatility and accelerated the decline in oil futures prices. Between late October and the week of 28 November 2023, hedge funds and other money managers sold an equivalent of 89 mb, after liquidating an equivalent of 204 mb in the previous month.

Crude oil futures prices experienced a significant downturn, marked by heavy selloffs amidst a highly volatile futures market. Speculators played a major role in this trend, cutting their bullish positions sharply while increasing short positions. The market dynamic was fuelled by exaggerated concerns about oil demand growth, which negatively impacted market sentiment.

Natural gas spot prices at the US Henry Hub benchmark averaged $2.71 per million British thermal units (MMBtu) in November 2023. Henry Hub's natural gas prices receded in November after five consecutive monthly increases. Prices fell m-o-m by 9.4% as mounting pressure from continuing US inventory builds and robust domestic production offset a seasonal demand increase. According to estimates from the US Energy Information Administration (EIA), as of November 24 2023, underground storage sites were around 8.9% higher than at the same time last year and 7.9% above the five-year average. Moreover, US LNG demand in other regions, particularly Europe, softened amid healthy inventories. Prices were down by 48.7%, y-o-y.

Economy in Focus

1. A snapshot of the global economy

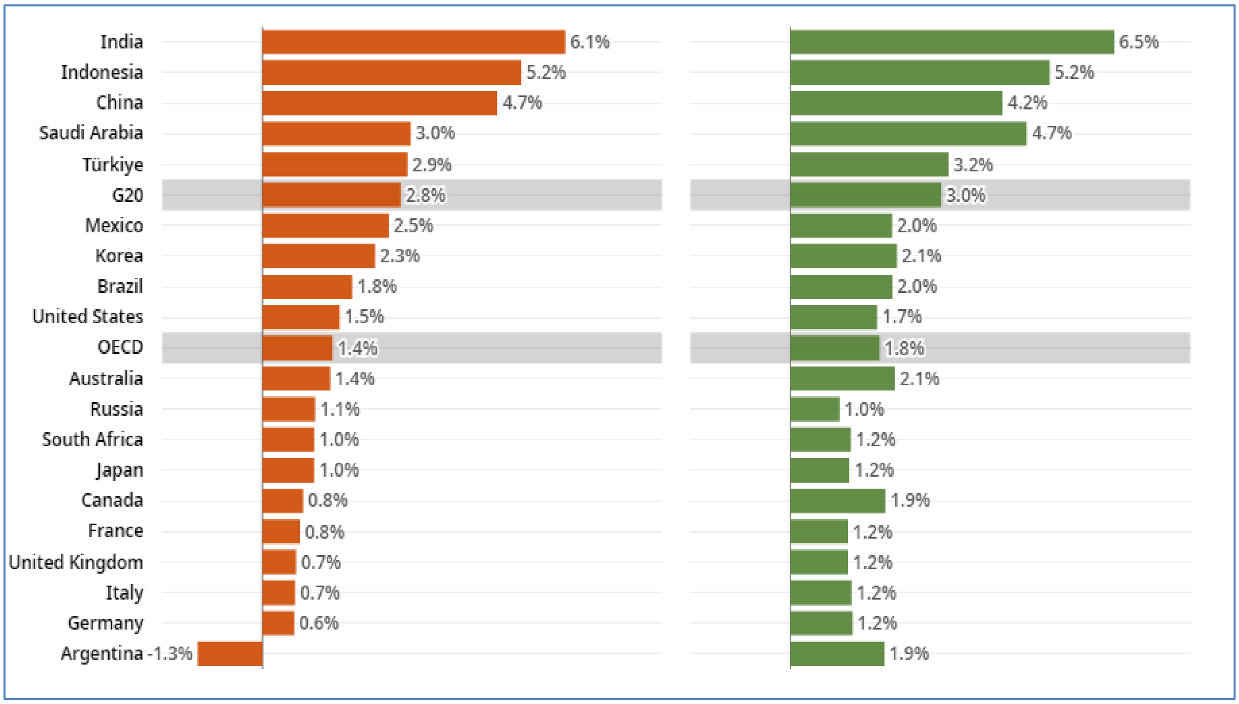
Global economic growth

- According to Organization for Economic Cooperation and Development (OECD), global economic growth is projected to be 2.9% in 2023, and is expected to fall to 2.7% in 2024.

- The economic growth has been moderating on the back of tighter financial conditions, weak trade growth and lower business and consumer confidence.

- Further, risks related to the heightened geopolitical tensions, due to the evolving conflict between Hamas-Israel; and the impact of monetary policy tightening has also led to lower economic growth forecast.

Figure 3: GDP growth projections for FY 2024 and FY 2025 (% year on year growth)



Source- OECD Economic Outlook

- For the current year FY 2024, according to OECD, the global economy expanded at an annualized rate of 3.1% in the first half of 2023, up from 2.8% in the second half of 2022.

- According to OECD, growth has slowed in many advanced economies, especially in Europe as the euro area grew by only 0.1% in the third quarter of 2023, mainly due to energy price shock and the war in Ukraine.

- In contrast, GDP growth has held up better in the United States with rate ranging at 1.5% in FY 2024 and at 1.7% in FY 2025. This is due to easing of monetary policy from the second half of 2024 as inflation continues to decline and is projected to help strengthen domestic demand growth in 2025.

- Growth rates in emerging economies like China have been higher ranging in the level of 4.7%. Consumption growth remains subdued and activity in the real estate sector continues to weaken, but monetary policy easing and additional infrastructure investment will help underpin domestic demand. Consumer price inflation is expected to remain very low, at under 2% in 2024 and 2025.

- India has been relatively unaffected by the surge in energy prices in 2022 and the tightening of monetary conditions in the advanced economies over the past two years. Real GDP growth is projected to be 6.3% in FY 2023-24 and 6.1% in FY 2024-25. Surging services exports and public investment will continue to drive the economy.

Global inflation

- The average annual consumer price inflation is projected to decline to 5.8% and 3.8% in 2024 and 2025 respectively, from 6.2% in 2023. According to OECD, inflation is projected to be back on target in most major economies in year 2025.

- For G7 economies, core inflation is estimated to have fallen to an annualized rate of below 3% in the third quarter of 2023, down from over 4¼ per cent during the first half of the year.

Global trade

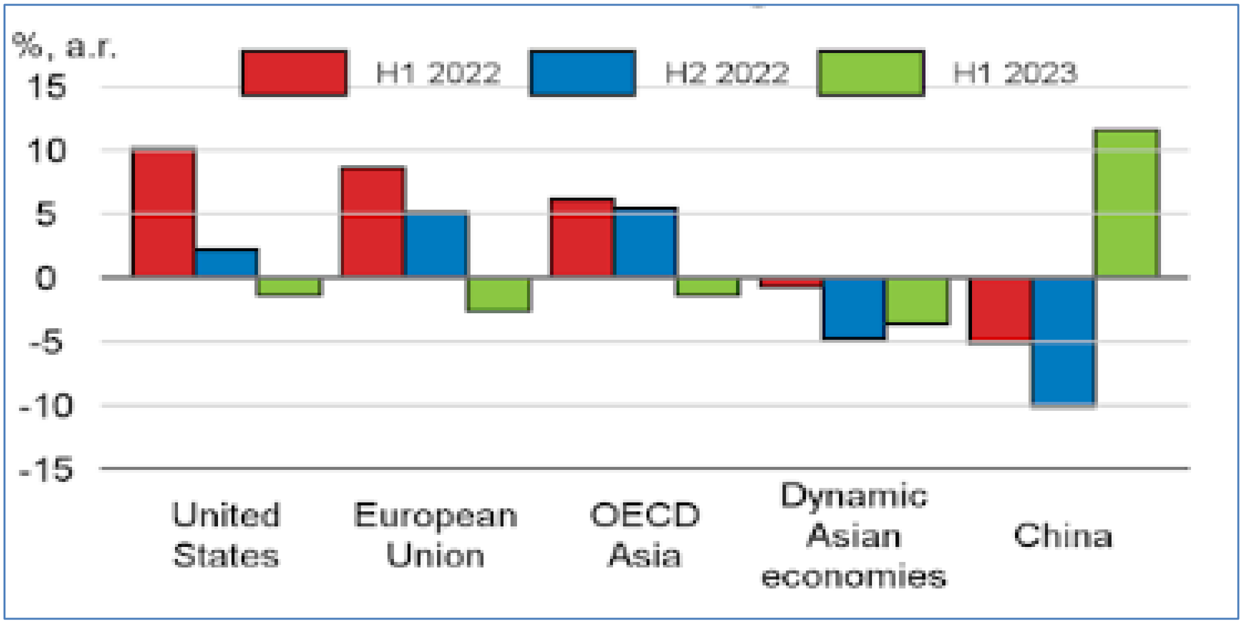
- Global trade growth has been weak over the past year. Volumes of traded goods and services are estimated to have grown by only 0.1% at an annualized rate in the first half of FY 2023-24.

- Merchandise trade volumes fell by 1.9% annualized in the first half of the year, whilst services trade volumes are estimated to have risen by 6.6%, as the ongoing normalization of travel in Asia helped to boost tourism.

- Trade volumes rose sharply in China in the first half of 2023 after a very weak second half of 2022, but growth in the OECD economies slowed.

- Data for the third quarter shows some recovery in trade growth in the United States, Japan, and Korea, alongside slower, but still positive Chinese trade growth. By contrast, trade volumes in Germany, France, Spain, and the Netherlands contracted.

Figure 4: Trade Volume Growth



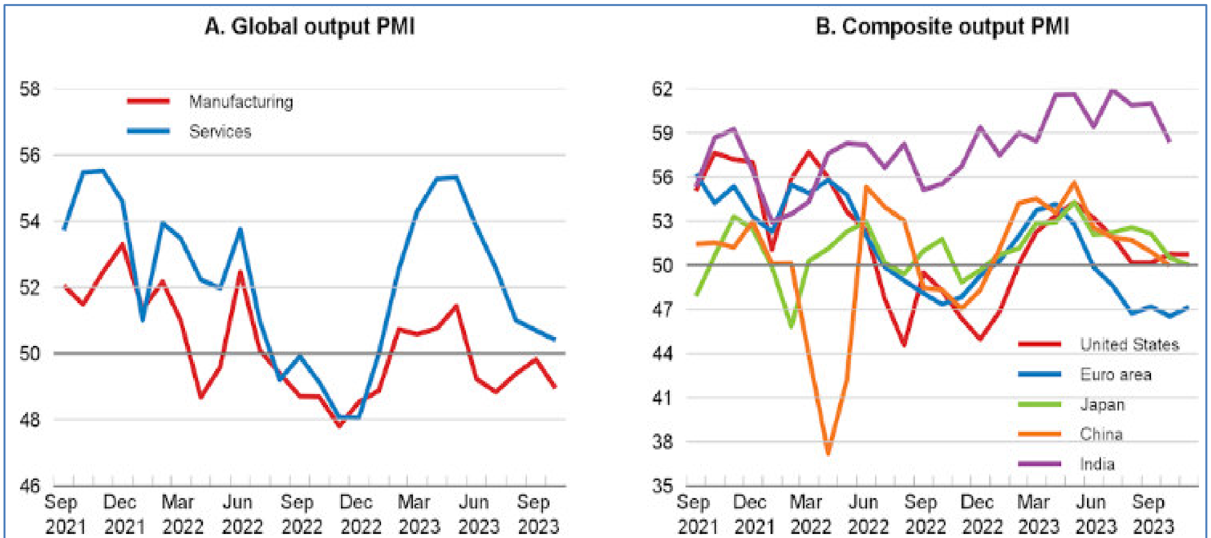
Source- OECD

Global PMI

- According to OECD, slack in economic growth in many economies, have led to weak PMI readings (line graph depicted in below figure) in many major economies, with India being a notable exception.

- The slowing credit growth in many economies and persistently low levels of consumer confidence have led to lower signs of PMI.

Figure 5: Global PMI Index



Note: Values below 50 indicate that a balance of firms reports a contraction in output. Panel B includes the November Flash PMIs for the advanced economies.

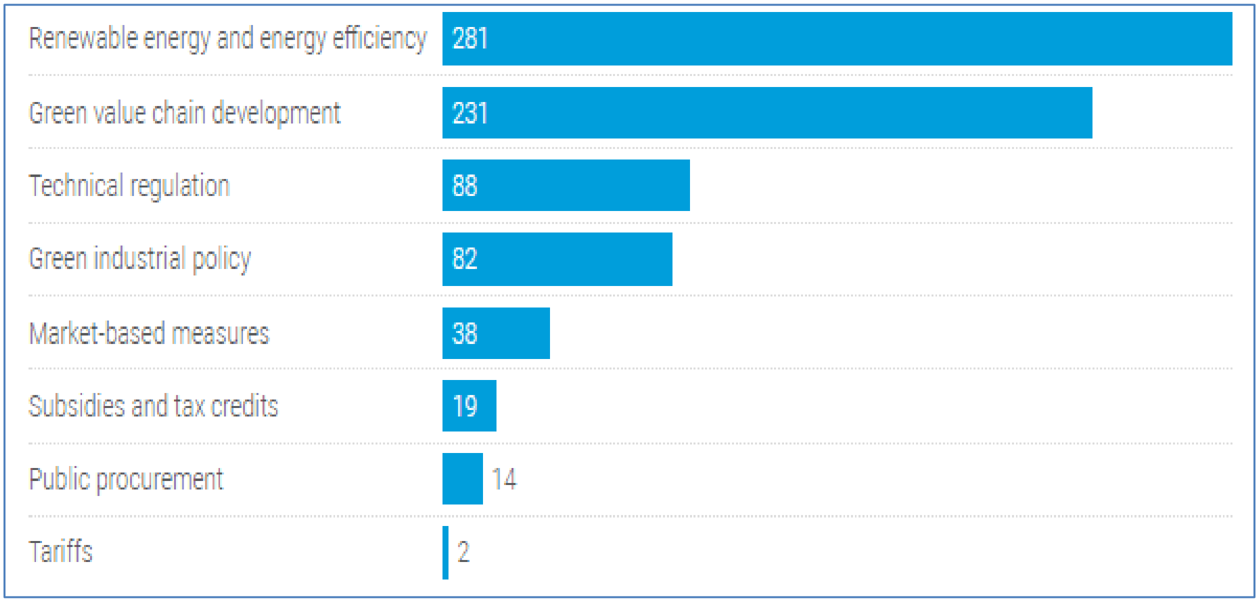
Source- S&P Global

2. UNCTAD study shows trade's untapped potential in climate action

An UNCTAD study released at COP28 examines how 60 developing countries have integrated trade into their national pledges under the Paris Agreement, known as Nationally Determined Contributions (NDCs). The study maps out how trade is systematically used in these national climate plans.

The study identified 680 trade-related measures within the examined NDCs. In general, the study shows that most of them focus on increasing renewable energy, enhancing energy efficiency, and promoting green value chains.

Figure 6: Trade related climate measures target mostly energy & green value chains



Source- UNCTAD

The report's key findings are as under: -

- **Renewable energy and energy efficiency:** These are the most common measures, adopted by over 50 countries in the study. They often lead to increased imports of renewable energy equipment like solar panels and wind turbines.
- **Green value chain development:** Aiming to reduce greenhouse gas emissions and enhance sustainability in value chains, these account for 31% of all measures in Africa, 35% in Asia and 38% in Latin America and the Caribbean.
- **Technical regulations:** Including minimum energy performance standards and labeling requirements, these are the most frequently used measures to ensure, for example, imported products meet specific carbon emission and efficiency standards. UNCTAD has identified over 2,360 climate change-related non-tariff measures (NTMs) regulating 26.4% of world trade, equivalent to $6.5 trillion.
- **Green industrial development:** These measures aim to develop low-carbon green value chains and economic diversification. About 20% overlap with green value chain development efforts.

- **Market-based measures:** These include carbon credit schemes and subsidies, and more than half identified in the study are related to REDD+ (Reducing emissions from deforestation and forest degradation). Measures linked to REDD+ were identified in 53% of NDCs from Latin American and Caribbean countries and 35% from African nations.
- **Other trade-related measures:** These include references to subsidies, tax credits, public procurement, and tariffs (35 measures). They focus mainly on incentivizing eco-friendly practices like electrical mobility and energy efficiency.

While many trade-related measures are present in the NDCs, trade is rarely explicitly cited as a policy tool for carbon reduction targets. This suggests limited involvement of trade ministries in NDC preparation. The study therefore calls for improved coordination and greater involvement of trade stakeholders and ministries in the NDC elaboration and validation processes.

Trade policy tools can help countries increase low-carbon goods uptake by reforming import tariffs, rethinking government procurement and promoting trade facilitation. According to UNCTAD, trade is part of the solution to both climate change and the Sustainable Development Goals.

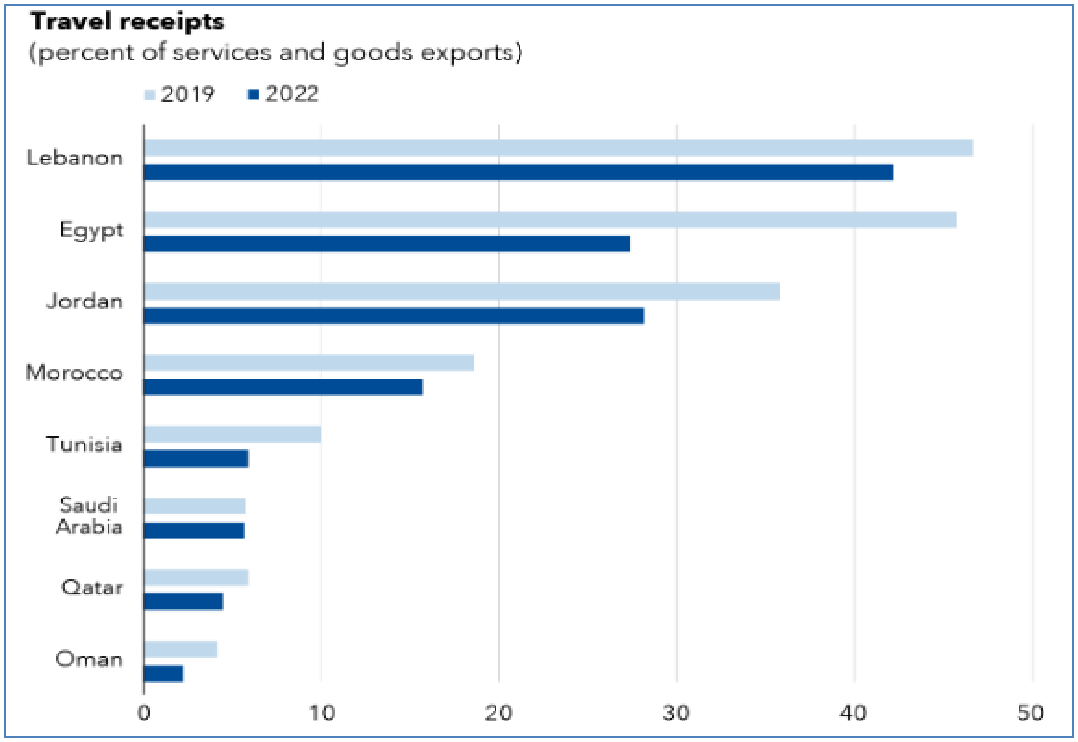
3. Middle East conflict risks reshaping the region's economies- IMF

The conflict in Gaza and Israel is causing immense human suffering. In addition to the direct impact, the conflict will also have consequences for the broader Middle East and North Africa region, with impacts on both people and economies. This comes at a time when economic activity in the region was already expected to slow, falling from 5.6 percent in 2022 to 2 percent in 2023.

The extent of the impact on the region remains highly uncertain and will depend on the conflict's duration, intensity, and spread. A large-scale conflict would constitute a major economic challenge for the region.

While Israel, the West Bank and Gaza are hardest hit, the economic impact extends far beyond the area to its neighboring countries of Egypt, Jordan, and Lebanon. Amid concerns about the threat of escalation, visitors have been canceling travel to the region, hitting hard at the very lifeline of these economies. Tourism, which accounted for 35 percent to almost 50 percent of goods and services exports in these economies in 2019, is a critical source of foreign exchange and employment. Tourism-dependent economies like Lebanon, where hotel occupancy rates fell by 45 percentage points in October compared to a year ago, will see knock-on effects for growth.

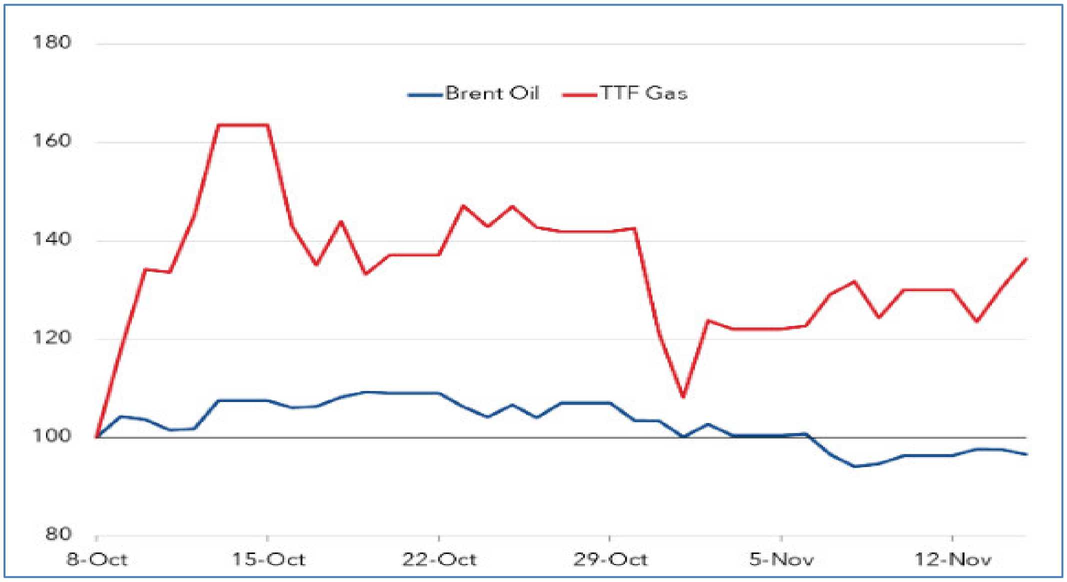
Figure 7: Tourism receipts at risk amid travel concerns



Source- IMF

Impact on energy prices- The impact on energy and financial markets has been limited and temporary. After an initial surge, oil prices retreated and are now below pre-conflict levels, reflecting changes in global demand conditions. Natural gas prices have also come down after a large spike but are still about 25 percent above pre-conflict levels.

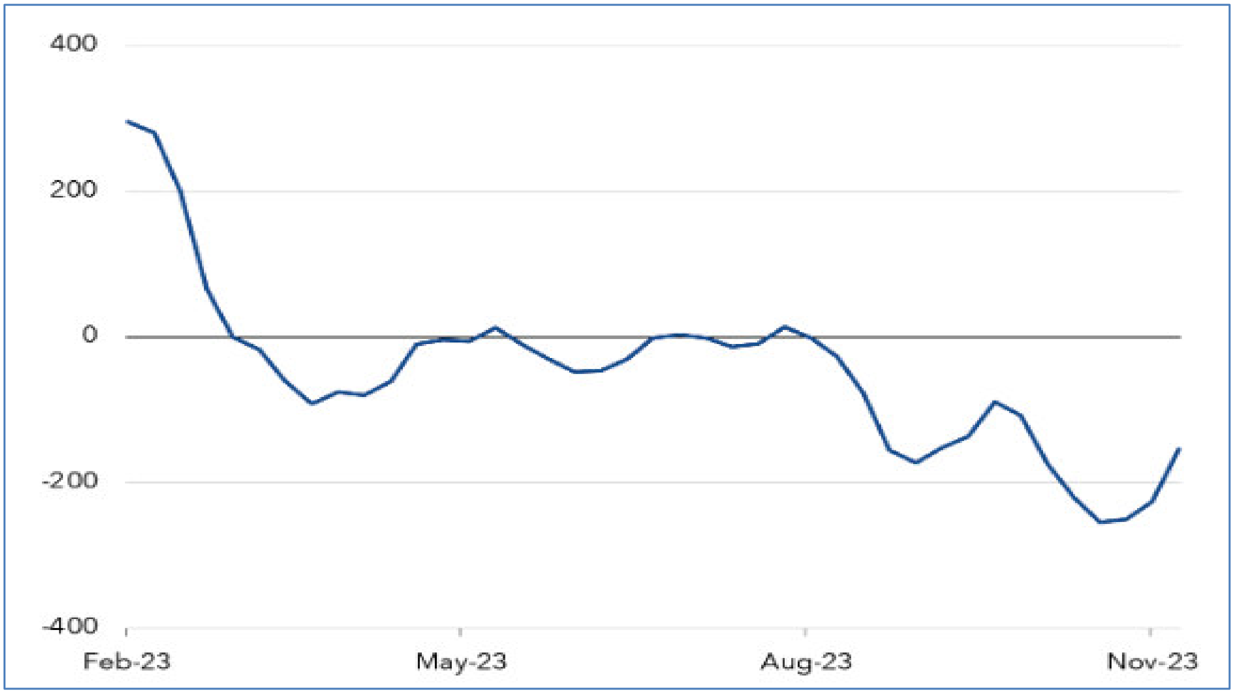
Figure 8: Impact on energy prices (index, Oct 6th, 2023 = 100)



Source- IMF

Impact on International investment flows- Government bond yields have climbed for some economies, but the broader impact has so far been minimal. Net portfolio flows to the region—a sign of investment sentiment—were on a downward trend that accelerated with the crisis but have since reverted to pre-conflict levels.

Figure 9: MENA net equity & debt portfolio flows (mn USD)



Source- IMF

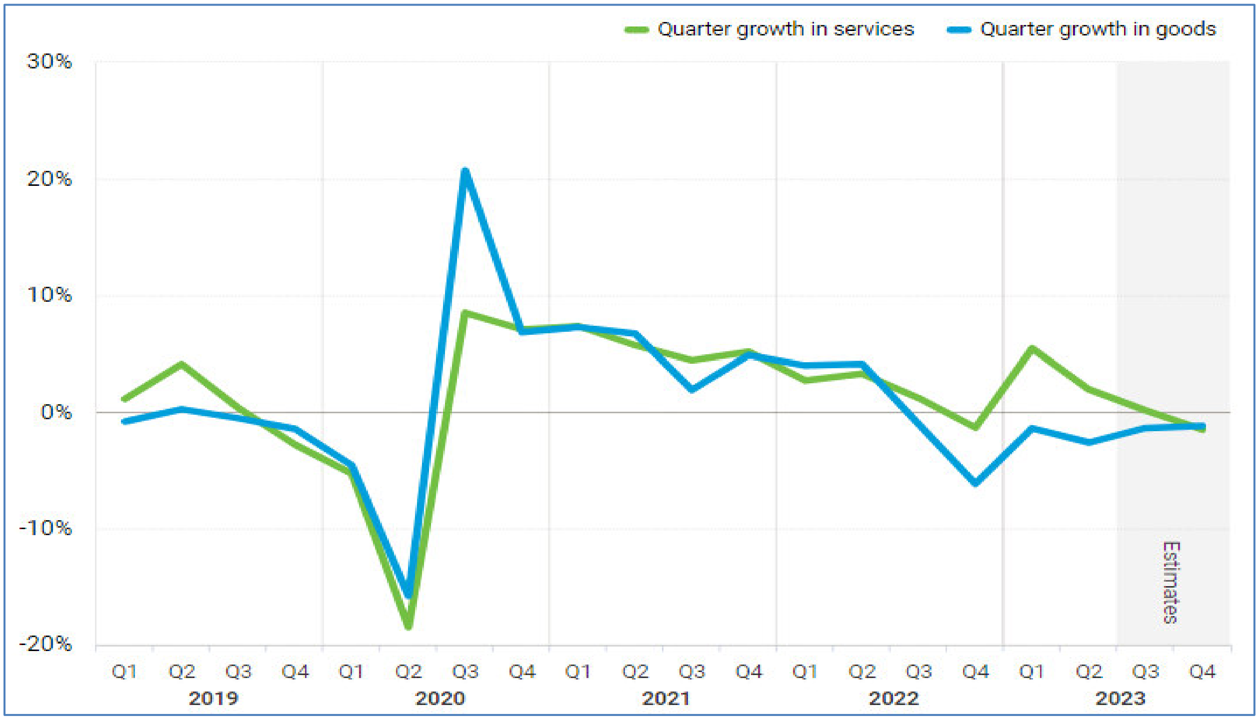
Thus, the more prolonged the conflict, the more impacted the tourism, trade, investment, and other financial channels would become. Refugee flows could increase significantly, adding to social and fiscal pressures in the countries that receive them and potentially causing more protracted weakness.

4. Global trade expected to shrink by nearly 5% in 2023 amid geopolitical strains and shifting trade patterns- UNCTAD

Global trade is projected to end the year 5% down compared to 2022's record level, shrinking by about $1.5 trillion to below $31 trillion, according to UNCTAD's Global Trade Update.

Other elements weighing on trade include lower demand in developed countries, less trade in East Asia, an uptick in trade-restrictive measures, commodity price volatility and lengthening supply chains, particularly between China and the United States.

Figure 10: Trends for trade in goods & services, quarterly growth, 2019- 2023



Source- UNCTAD

Further, UNCTAD mentioned few positives such as a slight increase in trade volumes, suggesting resilient global demand for imports, and a $500 billion increase in trade in services. The sector grew by 7% in 2023 owing to a delayed COVID-19 recovery.

Also, some developing economies, particularly Mexico and East Asian countries, have had opportunities to better integrate the supply chains affected by geopolitical concerns.

The Global Trade Update notes a significant uptick in 2023 in trade-restrictive measures, especially non-tariff measures (NTMs). It says the increase is driven by a resurgence of industrial policies and the pressing need for countries to fulfill climate commitments. These factors have prompted countries to favor policies that support domestic industries and reduce reliance on foreign supply chains.

Another recent UNCTAD report, Trade regulations for climate action, identified 2,366 climate change-related NTMs affecting 3.5% of all potentially tradable goods and covering 26.4% of global trade.

5. Indian Economy

India's economic growth

- According to RBI's forecast for India's GDP growth, Indian economy is expected to grow at 7 per cent in FY24, 6.5 per cent and 6 per cent in Q3 and Q4 respectively.

- The GDP growth rate in the first three quarters of FY25 has been pegged at 6.7 per cent, 6.5 per cent and 6.4 per cent respectively.

- Further, Finance Minister Nirmala Sitharaman said that India retained its tag as the world's fastest-growing major economy, as India's GDP grew at 7.6 per cent in Q2FY24, the highest in the world.

- The growth in economic activity is attributed to rising manufacturing activity as the manufacturing sector is contributing 13.9 per cent to the economy.

India PMI

- In November 2023, the S&P Global India Manufacturing PMI rebounded to 56.0 from October's eight-month low of 55.5, aligning with market expectations. This marked the 29th consecutive month of expansion in factory activity.

- India's manufacturing sector also witnessed growth in new orders—rebounding from October's one-year low—and foreign sales extended their growth streak for the 20th month.

  - The rise in buying activity and input stocks was notable, driven largely by robust demand conditions. The output of eight key infrastructure sectors jumped 12.1 percent in October 2023 against 0.7 percent expansion in the year-ago period on the back of a sharp uptick in production of coal, steel, cement, and electricity. The eight core sectors—coal, crude oil, natural gas, refinery products, fertilizer, steel, cement, and electricity—contribute 40.27 percent to the Index of Industrial Production (IIP).

  - According to S&P Global, India's services Purchasing Managers' Index (PMI) in November fell to 56.9 as compared to 58.4 in October. This is the lowest figure in 2023 so far. Before this, services PMI was recorded at 57.2 in January.

  - The slowdown was mainly owing to a slowdown in new orders as well as output across sectors. The anticipation of rising inflation also curbed the consumer demand.

  - Further, according to S&P, Indian services firms endured a further increase in their operating expenses, with labor, food, material, and transportation costs reportedly rising since October.

Inflation in India

- According to RBI, CPI inflation rose to 5.6 per cent in November 2023, as there was recurrence of food price spikes but it is expected to ease to 4.6 per cent in the first three quarters of 2024-25.

- The central bank projects inflation in for Q3 and Q4 at 5.6% and 5.2%, respectively and the inflation for FY 2023-24 is projected at 5.4 per cent.

- For the next fiscal year - FY 2024-25, CPI inflation for Q1FY25 is projected at 5.2 per cent; Q2 at 4.0 per cent; and Q3 at 4.7 per cent.

- Further, the Reserve Bank of India's Monetary Policy Committee unanimously decided to keep the repo rate unchanged at 6.5% for the fifth time in a row.

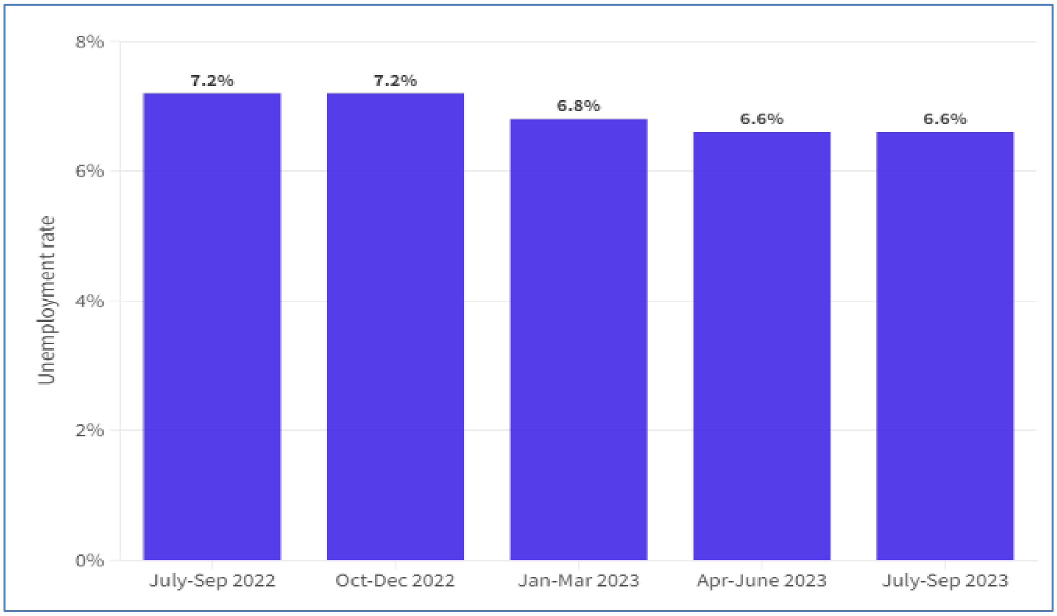
Unemployment in India

- The unemployment rate in urban areas of the country decreased from 7.2% in July-September, 2022 to 6.6% in July–September 2023 according to the Periodic Labour Force Survey (PLFS) conducted by the National Sample Survey Office (NSSO).

- For persons of age 15 years and above, the unemployment rate was 6.6% while it was 6% for male category. For the female category, it decreased from 9.4% in July–September last year to 8.6% in this year for the same quarter.

- PLFS defines unemployment rate as the percentage of persons unemployed among the persons in the labor force.

Figure 11: Unemployment rate in urban areas



Source- Periodic Labor Force Survey

- The worker population ratio, percentage of employed persons in the population, in urban areas increased from 44.5% in July-September, 2022 to 46% in July-September, 2023 for persons of age 15 years and above. For male category, it increased from 68.6% to 69.4% during this period and for female category, it increased from 19.7% to 21.9% during this period.

- Further, the women labour force participation rate (LFPR) — percentage of persons in labor force —in urban areas, increased from 47.9% in July-September, 2022 to 49.3% in July–September, 2023 for persons of age 15 years and above.

India’s external position

India’s foreign trade position

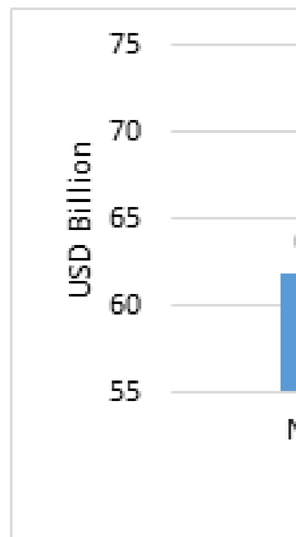
- India’s overall exports (Merchandise and Services combined) in November 2023 is estimated to be USD 62.58 Billion, exhibiting a growth of 1.23 per cent over November 2022.
- Overall imports in November 2023 are estimated to be USD 67.88 Billion, exhibiting a negative growth of (-) 6.16 per cent over November 2022.

Table 1: Trade during November 2023

		November 2023 (USD Billion)	November 2022 (USD Billion)
Merchandise	Exports	33.90	34.89
	Imports	54.48	56.95
Services	Exports	28.69	26.93
	Imports	13.40	15.39
Overall Trade (Merchandise +Services)	Exports	62.58	61.82
	Imports	67.88	72.34
	Trade Balance	**-5.30**	**-10.52**

Source- RBI

Figure 12: Overall Trade during November 2023



Source- RBI

- For the month of November 2023, under merchandise exports, 15 of the 30 key sectors exhibited growth in November 2023 as compared to same period last year (November 2022). These include Fruits & Vegetables (31.14%), Meat, Dairy & Poultry Products (19.91%), Oil Meals (17.22%), Mica, Coal & Other Ores, Minerals Including Processed Minerals (16.62%), Gems & Jewellery (11.97%), Spices (11.3%), Coffee (11%), Drugs & Pharmaceuticals (7.33%), Cotton Yarn/ Fabs. /Made-Ups, Handloom Products Etc. (6.33%), Cereal Preparations & Miscellaneous

Processed Items (5.9%), Carpet (4.22%), Ceramic Products & Glassware (2.17%), Handicrafts Excl. Hand Made Carpet (1.17%) and Electronic Goods (1.09%).

- For April-November 2023, under merchandise exports, 14 of the 30 key sectors exhibited positive growth during April-November 2023 as compared to April-November 2022. These include Iron Ore (203.93%), Oil Meals (34.33%), Electronic Goods (23.56%), Ceramic Products & Glassware (20.9%), Fruits & Vegetables (15.1%), Tobacco (10.44%), Oil Seeds (9.56%), Drugs & Pharmaceuticals (8.05%), Meat, Dairy & Poultry Products (6.31%), Cereal Preparations & Miscellaneous Processed Items (6.27%), Cotton Yarn/Fabs./Made-Ups, Handloom Products Etc. (5.72%), Coffee (4.72%), Spices (3.34%) and Cashew (0.3%).

- India’s trade deficit has shown considerable improvement in April-November 2023. Overall trade deficit for April-November 2023 is estimated at USD 61.44 Billion as compared to the deficit of USD 100.38 Billion during April-November 2022, registering a decline of (-) 38.79 percent. The merchandise trade deficit during April-November 2023 is USD 166.35 Billion compared to USD 189.21 Billion during April-November 2022, registering a decline of (-) 12.08 percent.

6. ADB raises India's FY24 growth forecast to 6.7% from 6.3%

The Asian Development Bank (ADB) has raised its forecast for India's economic growth rate to 6.7 per cent for FY 2023-24 from 6.3 per cent that it had announced in September 2023. The upward revision is based on India’s higher-than-expected gross domestic product (GDP) growth of 7.6 per cent in the September 2023 quarter.

Economic data also indicate that the industrial sector, including manufacturing, mining, construction, and utilities, grew by double digits. According to ADB forecast for FY2024, agriculture is expected to grow slightly slower than expected, but this will be more than offset by industry’s much stronger-than-expected growth, hence the upward revision.

On the demand side, higher growth in fixed investment — driven by increased capital spending by the central government and state governments — will compensate for lower growth in private consumption expenditure and weaker-than expected exports.

ADB kept its earlier forecasts on India’s inflation unchanged at 5.5 per cent in FY24.

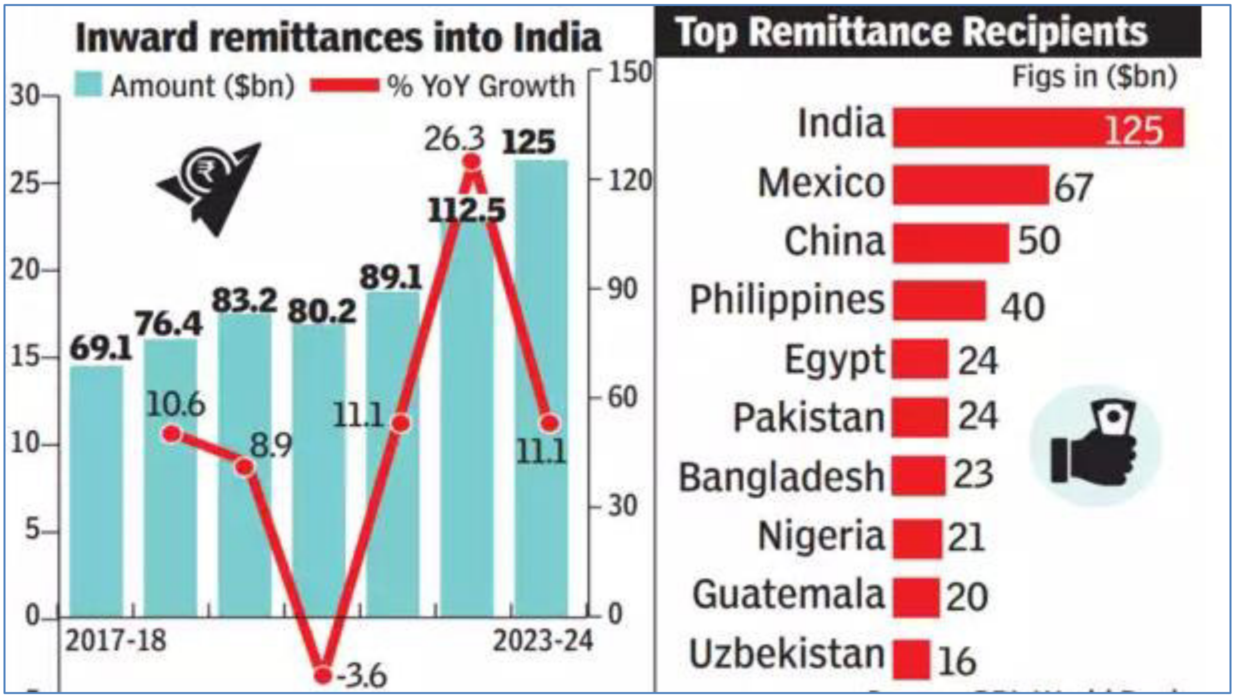
7. India tops remittance flows at USD 125 billion in 2023: World Bank

According to World Bank, India saw the highest amount of remittance inflows in the world in 2023, rising over 11% to USD 125 billion, driven by several factors, including the country's agreement with the UAE, for promoting the use of dirhams and rupees for bilateral trade.

This rise in remittance will increase India's share in South Asian remittances to 66 per cent in 2023 from 63 per cent in 2022. India was followed by Mexico (USD 67 billion), China (USD 50 billion), the Philippines (USD 40 billion), and Egypt (USD 24 billion). Economies where remittance inflows represent substantial shares of Gross Domestic Product (GDP) — highlighting the importance of remittances for funding current account and fiscal shortfalls — are Tajikistan (48 per cent), Tonga (41 per cent), Samoa (32 per cent), Lebanon (28 per cent), and Nicaragua (27 per cent).

Further according to World Bank the main contributing factors are declining inflation and strong labour markets in high-income source countries, which boosted remittances from highly skilled Indians in the US, the UK, and Singapore, which collectively account for 36 per cent of the total remittance flows to New Delhi.

Figure 13: Remittances in India



Source- RBI

The report said that remittance flows to India were also boosted by higher flows from the Gulf Cooperation Council (GCC), especially the UAE, which accounts for 18% of India's total remittances and is the second-largest source of them after the US. Remittance flows to India benefited particularly from its February 2023 agreement with the UAE for setting up a framework to promote the use of local currencies for cross-border transactions and cooperation for interlinking payment and messaging systems.

According to the report, the use of dirhams and rupees in cross-border transactions would be instrumental in channeling more remittances through formal channels. Despite low oil prices and production cuts, and a near collapse in GDP growth in the GCC from 8% in 2022 to 1.5% in 2023, lower inflation (2.6% in 2023 compared with 3.3% in 2022) orchestrated by domestic policy played a key role in sustaining Indian migrants' ability to continue to send remittances to India.

8. India set to become 3rd largest economy by 2030: S&P

According to rating agency, S&P Global Ratings, India is poised to become the world's third-largest economy by 2030, with an estimated 7% GDP growth in the fiscal year 2026-27. Currently, India is the fifth largest economy, lagging US, China, Germany, and Japan.

S&P in their Global Credit Outlook 2024 pegged India's GDP growth rate of 6.4 per cent for the financial year ending March 2024, a decrease from the 7.2 per cent recorded in the preceding financial year.

S&P said that the robust growth of India's domestic digital market has the potential to drive the expansion of its thriving startup ecosystem, particularly in the realms of financial and consumer technology, over the next decade. Additionally, in the automotive sector, India is positioned for development, leveraging infrastructure, investment, and innovation.

9. **India's forex reserves at $606 bn for the week ending Dec 8**

- According to Reserve Bank of India (RBI), India’s foreign exchange (forex) reserves jumped $2.816 billion to hit over four-month high mark of $606.859 billion in the week ended December 8.
- In the previous reporting week, the overall reserves had risen $6.107 billion to $604.042 billion.
- For the week ended December 8, the foreign currency assets -- a major component of the reserves -- increased by $3.089 billion to $536.699 billion.
- Gold reserves were down $199 million to $47.13 billion during the week.
- The Special Drawing Rights were down $63 million to $18.188 billion.
- India's reserve position with the International Monetary Fund (IMF) was down $11 million to $4.842 billion in the reporting week.

10. Year End Review for Department for Promotion of Industry and Internal Trade

- Keeping in view India’s vision of becoming ‘Atmanirbhar,’ Production Linked Incentive (PLI) Schemes for 14 key sectors were announced with an outlay of Rs. 1.97 lakh crore to enhance India’s Manufacturing capabilities and Exports.
    - 746 applications have been approved till November 2023.
    - PLI units established in more than 150 districts (24 States).

  - Over Rs. 95,000 crores of investment reported till September 2023, which has led to production/sales of Rs. 7.80 lakh crore and employment generation (direct & indirect) of over 6.4 lakh.
  - Export have been boosted by Rs. 3.20 lakh crore. Incentives worth around Rs. 2,900 crores have been disbursed in FY 2022-23.
  - There has been a value addition of 20% in mobile manufacturing within a period of 3 years. Of the USD 101 billion total electronics production in FY 2022-23, smartphones constitute USD 44 billion, including USD 11.1 billion as exports.
  - Import substitution of 60% has been achieved in the Telecom sector and India has become almost self–reliant in Antennae, GPON (Gigabit Passive Optical Network) & CPE (Customer Premises Equipment).
  - There has been a significant reduction in imports of raw materials in the Pharma sector.

- **Startup India initiative-**
  - Over 1,14,000 startups spread across all 36 States and UTs of the country create more than 12 lakh jobs.
  - Under the Fund of Funds for Startups (FFS) Scheme, the Government has committed about Rs. 10,229 crores to 129 Alternative Investment Funds (AIFs). A total of Rs. 17,272 crores have been invested by the AIFs in 915 startups.
  - Under the Startup India Seed Fund Scheme (SISFS), a total sum of Rs. 747 crores has been approved to 192 incubators. Also, the selected incubators have approved a total of Rs. 291 crores to 1,579 startups.
  - Under India's G20 Presidency in 2023, a Startup20 Engagement Group was institutionalized to create a global narrative for supporting startups and enabling synergies among startups, corporates, investors, innovation agencies and other key ecosystem stakeholders.

- **Open Network for Digital Commerce (ONDC)**
  - Open Network for Digital Commerce (ONDC) is an initiative by DPIIT aiming at promoting open networks for all aspects of exchange of goods and services over digital or electronic networks.
  - ONDC recorded more than 6.3 million transactions in the month of November'23 across 600+ cities. 2.3 Lakh+ sellers and service providers are active on the ONDC network spread across 500+ cities and towns across India. 59 Network Participants are live on the Network.

- **One District One Product (ODOP)**

  - One District One Product (ODOP) aims to foster balanced regional development across all districts of the country by being vocal for local products. More than 1,200 products have been identified across 767 districts of the country which are showcased on ODOP portal and many of these products are also being sold on GEM and other e-commerce platforms.

- **National Single Window System (NSWS)**
    - NSWS simplifies processes by providing a single platform for G2B clearances across various Ministries/Departments, reducing duplication by auto-populating form fields based on investor profiles. It presently offers approvals from 32 Central Ministries/Departments and 25 States/UTs.
    - The NSWS Portal has successfully processed over 2,55,000 approvals as of November 2023, marking a significant milestone in streamlining processes for both Central and State/UTs. It incorporates government schemes like Vehicle Scrapping, Indian Footwear and Leather Development (IFLDP), Sugar and Ethanol Policies, facilitating applications for over 400 investors in IFLDP, 25 for Registered Vehicle Scrapping Facility, and 19 for Automated Testing Stations.
- **Make in India 2.0**
    - Since its launch, Make in India has made significant achievements and is now focusing on 27 sectors under Make in India 2.0. DPIIT is coordinating Action Plans for 15 manufacturing sectors, while the Department of Commerce is coordinating for 12 service sectors.
    - Now, DPIIT is working closely with 24 sub-sectors which have been chosen keeping in mind the Indian industries strengths and competitive edge, need for import substitution, potential for export and increased employability. These 24 sub-sectors are – furniture, air-conditioners, leather, and footwear, ready to eat, fisheries, agri-produce, auto components, aluminum, electronics, agrochemicals, steel, textiles, EV components and integrated circuits, ethanol, ceramics, set top boxes, robotics, televisions, close circuit cameras, toys, drones, medical devices, sporting goods, gym equipment. Efforts are on to boost the growth of the sub-sectors in a holistic and coordinated manner.
- **Progress on Unified Logistics Interface Platform (ULIP):**
    - The integration of ULIP with 35 systems of 08 different Ministries through 113 APIs, covering 1,800+ fields has been completed. 699 industry players have been registered on ULIP. Over 125 private companies have signed NDA, and this will enhance supply chain visibility and boost trade. Over 65 applications have been made live. GST data is being integrated with ULIP to provide end-to-end multimodal tracking of cargo and demand-supply mapping for trade.
- **IPR Strengthening**

- Various Policy and Legislative reforms have been undertaken in last 9 years in institutional strengthening and process digitalization. India's rank in the **Global Innovation Index (GII)** amongst 132 economies has improved from 81st in 2015 to 40th in GII 2022 ranking and in 2023 India has retained its 40th position.

Lessons from Economics

Climate Economics

Climate economics refers to the method to quantify the effects of climate change throughout the economy, from the local to the global level. This work includes everything from assessing the impact of natural disasters on economic growth in developing countries, to the effects of heat on labor productivity, to changes in mortality rates in communities around the world.

It describes a global social cost of carbon, which is a measure of the value of the climate damages per ton of CO2 released. This measure can then be used by policymakers worldwide when planning climate policies.

Costs and Benefits of Climate change

The future costs and benefits of climate change are uncertain and unevenly distributed. For example. the costs of dealing with the impacts of climate change fall disproportionately on developing countries, whilst the financial costs of cutting emissions to mitigate those impacts fall mostly to developed nations.

Some of the key findings given by leading global research firms are as under: -

- According to Morgan Stanley, climate-related disasters cost the world $650 billion from 2016-2018.
- The Organization for Economic Co-operation and Development (OECD) puts the cost of achieving the UN's Sustainable Development Goals, in a way compatible with Paris, at $6.9 trillion a year, to 2030.
- In 2019, World Bank estimate suggests the necessary global infrastructure investment would cost $90 trillion by 2030.

Policies to combat climate change may also affect growth and prosperity. Despite wind and solar photovoltaics (PV) being cheaper than fossil fuels in most countries, some forms of low-carbon energy are still more expensive, such as green hydrogen. But climate policies that subsidize or support emerging low-carbon technology can prove cost effective in the long run, for example by making energy cheaper, avoiding climate impacts and producing co-benefits, such as reducing the health impacts of air pollution.

The Global Commission on the Economy and Climate concluded that transitioning to a low-carbon, sustainable growth path could deliver a direct economic windfall of $26 trillion and create over 65 million new jobs by 2030 compared with business-as-usual.

Indian context on climate change

- The Central government told the UN Framework for Climate Change Convention (UNFCCC) that India has spent about Rs 13.35 lakh crore in 2021-22, just over 5.5% of its GDP on climate adaptation.
- Adaptation efforts are meant to reduce the impacts of climate change. Along with mitigation, or reduction of greenhouse gas emissions, adaptation is a central pillar of global climate action. Adaptation activities include actions like creating sea-walls to protect against rising sea levels; development of temperature-resilient crops; heat-action plans; early warning systems, creation of disaster-resilient infrastructure are all examples of adaptation activities.
- Under the global climate change framework, countries are supposed to measure their annual greenhouse gas emissions every few years, and submit it to UNFCCC for maintaining a global inventory. This used to be called National Communication, NATCOMs, under the 1997 Kyoto Protocol mechanism. Under the Paris Agreement that has replaced Kyoto Protocol, this submission is called Biennial Update Reports, or BURs.
- India submitted its third NATCOM which will finish its obligations under the Kyoto Protocol. It has also submitted three BURs under the Paris Agreement so far, and that will continue. The third National Communication contains detailed inventory of India's greenhouse gas emissions for the year 2019.
- It shows that India's total emissions in 2019 was 3.13 billion tons of carbon dioxide equivalent. Accounting for the absorptions by the forestry sector, the net emissions was 2.64 billion tons. This is less than half of United States and less than one-fourth of that of China.
- The inventory shows that energy sector, comprising, among others, electricity production and road transport, accounted for over 75 per cent of India's total emissions, followed by agriculture which contributed about 13 per cent and industry whose share was about 8 per cent.
- In an assessment of the risks, it faced on account of climate change, India said total economic value of crop loss (food as well as non-food) due to climate impacts were projected to range between USD 28.6 and 54.8 billion between 2030 and 2050 (2015 prices). Over the next 50 years, these losses could shoot up to USD 612 to 1,014 billion.

Oil Market

Crude oil price – Monthly Review

Oil market sentiment turned decidedly bearish in November and early December as non-OPEC+ supply strength coincided with slowing global oil demand growth. The extension of OPEC+ output cuts through 1Q24 did little to increase oil prices.

Record-breaking supply from the United States, Brazil and Guyana, and sharply higher Iranian oil production, along with easing demand, prompted some OPEC+ members to announce more extensive cuts to fend off a potential inventory build. Improved drilling efficiencies and well productivity in the shale patch saw US oil supply exceed 20 mb/d in September, defying industry warnings of an imminent slowdown in growth due to cost inflation and oil field service capacity constraints. Evidence of a slowdown in oil demand is mounting, with the pace of expansion set to ease from 2.8 mb/d y-o-y in 3Q23 to 1.9 mb/d in 4Q23. A deterioration in the macroeconomic outlook led to a downward revision in our global oil consumption growth forecast of nearly 400 kb/d in the final three months of the year.

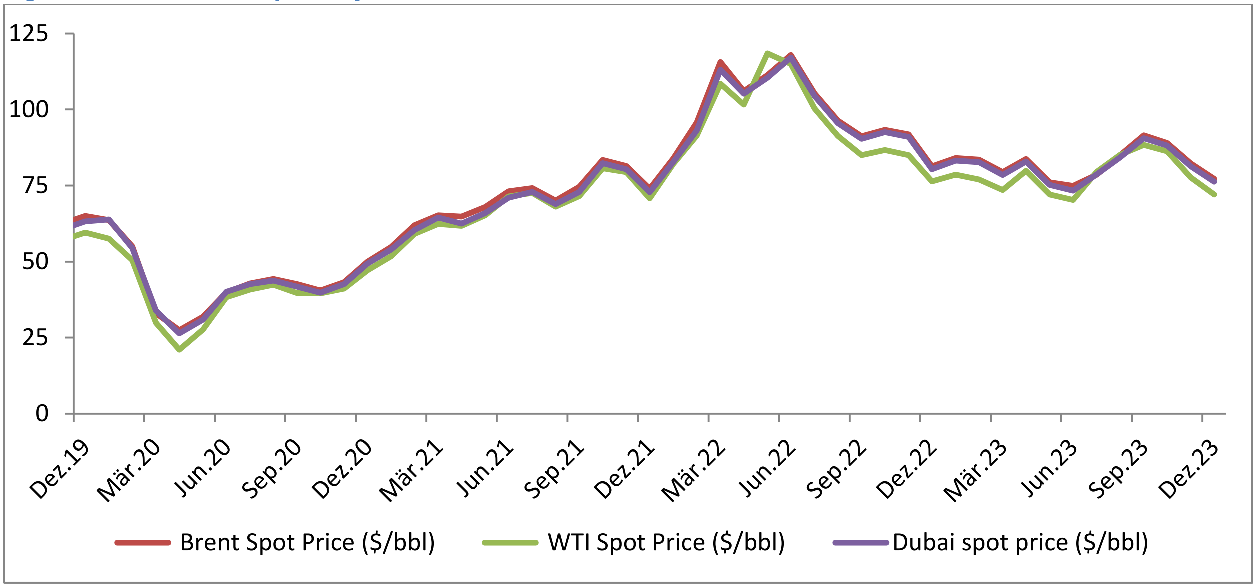
Europe, Russia and the Middle East account for most of the adjustment. The impact of higher interest rates is feeding through to the real economy while petrochemical activity shifts increasingly to China, undermining growth elsewhere. Europe is particularly soft amid the continent's broad manufacturing and industrial slump. In addition, tighter efficiency standards and an expanding electric vehicle fleet continue to curb oil use. Oil consumption growth is expected to ease significantly in 2024, to 1.1 mb/d, with demand baselines normalizing as Covid-related distortions fade.

Hedge funds and other money managers turned more bearish about crude oil, closing a large volume of bullish futures and options positions, specifically in the NYMEX WTI market. Simultaneously, they raised bearish positions for nine consecutive weeks to the week of 28 November 2023. This has fuelled volatility and accelerated the decline in oil futures prices. Between late October and the week of 28 November 2023, hedge funds and other money managers sold an equivalent of 89 mb, after liquidating an equivalent of 204 mb in the previous month.

Crude oil futures prices experienced a significant downturn, marked by heavy selloffs amidst a highly volatile futures market. Speculators played a major role in this trend, cutting their bullish positions sharply while increasing short positions. The market dynamic was fuelled by exaggerated concerns about oil demand growth, which negatively impacted market sentiment. The OPEC Reference Basket (ORB) value declined in November, dropping by $6.86/b, or 7.5%, m-o-m to stand at $84.92/b, as all ORB component values dropped alongside their respective crude oil benchmarks, and lower crude differentials and official selling prices in almost all regions. Year-to-date, the ORB averaged $83.28/b, representing a decline of $18.61, or 18.3%, compared with $101.89/b in 2022.

Brent crude ranged an average to $77.67 a barrel and WTI ranged to $72.47 per barrel in the month of December.

Figure 14: Benchmark price of Brent, WTI and Dubai crude



Source- World Bank

- Brent crude price averaged $77.67 per bbl in December 2023, down by 5.5% on a month on month (MoM) and 4.4% on year on year (YoY) basis, respectively.
- WTI crude price averaged $72.47 per bbl in December 2023, down by 6.6% on a month on month (MoM) and 5.1% on year on year (YoY) basis, respectively.
- Dubai crude price averaged $76.82 per bbl in December 2023, down by 5.5% on a month on month (MoM) and 4.5% on year on year (YoY) basis, respectively.

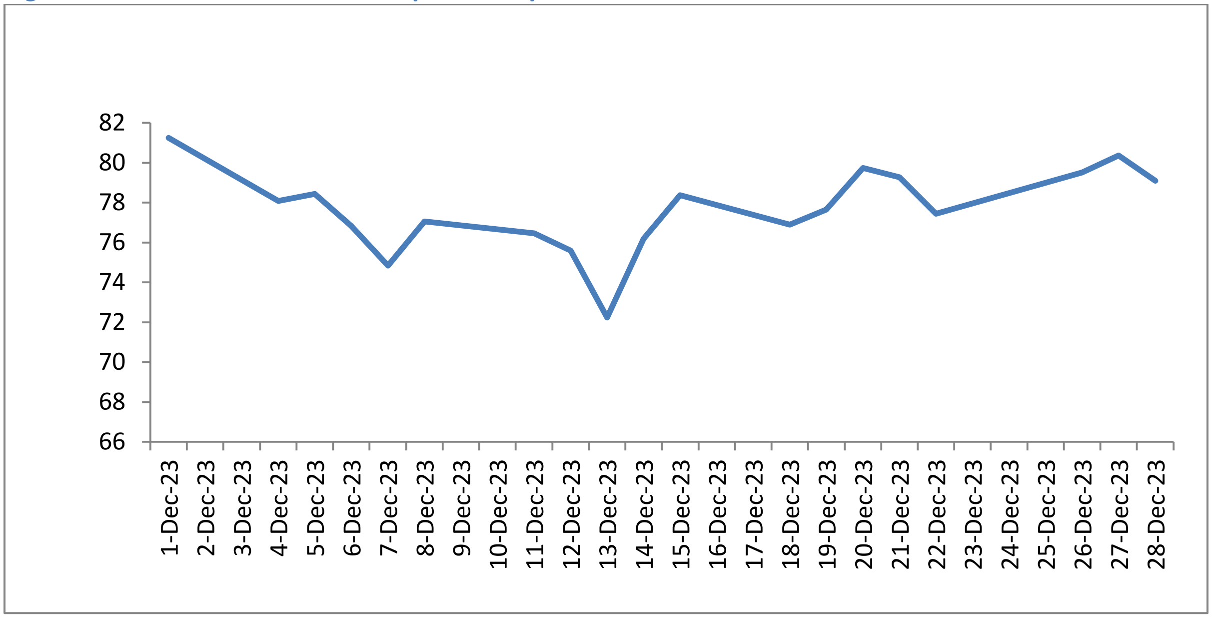
Table 2: Crude oil price in December, 2023

Crude oil	Price ($/bbl)	MoM (%) change	YoY (%) change
Brent	77.67	-5.5%	-4.4%
WTI	72.47	-6.6%	-5.1%
Dubai	76.82	-5.5%	-4.5%

Source- World Bank

Indian Basket Crude oil price

Figure 15: Indian crude oil basket price in $ per bbl



Source- PPAC

- Indian crude basket price averaged $77.42 per barrel in December 2023, down by 7.1% on Month on Month (M-o-M) and 0.5% on a year on year (Y-o-Y) basis, respectively.

Oil production situation

- Non-OPEC liquids supply growth forecast remains unchanged at 1.8 mb/d for 2023. The main drivers of liquids supply growth in 2023 include the US, Brazil, Kazakhstan, Norway, Guyana, Mexico and China. For 2024, non-OPEC liquids production is expected to expand by 1.4 mb/d, broadly unchanged from the previous month’s assessment. The main drivers for liquids supply growth next year are expected to be the US, Canada, Guyana, Brazil, Norway and Kazakhstan. The largest declines are anticipated in Mexico and Malaysia.

- OPEC NGLs and non-conventional liquids are forecast to grow by around 50 tb/d to average 5.4 mb/d in 2023 and by another 65 tb/d in 2024 to average 5.5 mb/d. OPEC-13 crude oil production in November dropped by 57 tb/d m-o-m to average 27.84 mb/d.

Table 3: Non-OPEC liquids production in 2023, mb/d

Non-OPEC liquids production	2022	1Q23	2Q23	3Q23	4Q23	2023
Americas	26.91	27.90	28.18	29.02	28.24	28.34
of which US	*19.28*	*20.10*	*20.70*	*21.20*	*20.33*	*20.58*
Europe	3.58	3.69	3.65	3.54	3.69	3.64
Asia Pacific	0.48	0.45	0.45	0.44	0.47	0.45
Total OECD	**30.97**	**32.04**	**32.28**	**33.01**	**32.40**	**32.43**
China	4.48	4.63	4.63	4.49	4.49	4.56
India	0.77	0.76	0.78	0.78	0.77	0.77
Other Asia	2.30	2.31	2.25	2.24	2.27	2.27
Latin America	6.34	6.69	6.76	7.06	7.04	6.89
Middle East	3.29	3.27	3.29	3.27	3.29	3.28
Africa	1.29	1.24	1.27	1.27	1.28	1.27
Russia	11.03	11.19	10.86	10.78	9.66	10.62
Other Eurasia	2.83	2.99	2.93	2.82	2.95	2.92
Other Europe	0.11	0.11	0.10	0.10	0.10	0.10
Total Non-OECD	**32.44**	**33.21**	**32.82**	**32.82**	**31.86**	**32.69**
Total Non-OPEC production	63.41	65.25	65.15	65.83	64.26	65.12
Processing gains	2.40	2.47	2.47	2.47	2.47	2.47
Total Non-OPEC liquids production	**65.81**	**67.72**	**67.62**	**68.29**	**66.73**	**67.59**
Previous estimate	**65.81**	**67.72**	**67.63**	**68.11**	**66.92**	**67.59**
Revision	0.00	0.00	0.00	0.19	-0.19	0.00

Source- OPEC

- From the above table, it can be inferred, that the total non-OPEC liquids production is expected to reach 67.59 mb/d by 2023.
- OPEC NGLs and non-conventional liquids production in 2023 is forecast to grow by around 50 tb/d to an average of 5.4 mb/d.
- OPEC-13 crude oil production averaged 27.84 mb/d in November 2023, lower by 57 tb/d m-o-m.

Oil demand situation

- The world oil demand growth forecast for 2023 remains unchanged from last month's estimate at 2.5 mb/d. Downward revisions in the OECD Europe and Asia Pacific in 3Q23 and 4Q23 are offset by upward revisions in OECD Americas. Similarly, in the non-OECD, downward adjustments to the Middle East and Africa in 3Q23 and 4Q23 were offset by upward revisions in China, Other Asia, and Latin America. Oil demand in the OECD is expected to grow by around 0.1 mb/d in 2023 and by 2.4 mb/d in the non-OECD.
- For 2024, world oil demand is expected to grow by a healthy 2.2 mb/d, unchanged from the previous month's assessment. The OECD is expected to expand by about 0.3 mb/d, with OECD Americas contributing the largest increase. The non-OECD is expected to increase by around 2.0 mb/d, led by growth in China, India, the Middle East, and Other Asia.

Table 4: World Oil demand, mb/d

	2022	1Q23	2Q23	3Q23	4Q23	2023	Growth	%
Total OECD	**45.75**	**45.43**	**45.71**	**46.20**	**45.93**	**45.82**	**0.07**	**0.14**
~ of which US	*20.16*	*19.92*	*20.50*	*20.47*	*20.05*	*20.24*	*0.08*	*0.38*
Total Non-OECD	**53.90**	**56.15**	**55.76**	**55.92**	**57.35**	**56.29**	**2.39**	**4.44**
~ of which India#	*5.14*	*5.40*	*5.40*	*5.17*	*5.50*	*5.37*	*0.23*	*4.48*
~ of which China	14.95	15.73	16.06	16.27	16.37	16.11	1.16	7.75
Total world	**99.66**	**101.57**	**101.47**	**102.12**	**103.28**	**102.11**	**2.46**	**2.47**

Source- OPEC monthly report, December 2023

Note: 2023 = Forecast. Totals may not add up due to independent rounding*

Global petroleum product prices

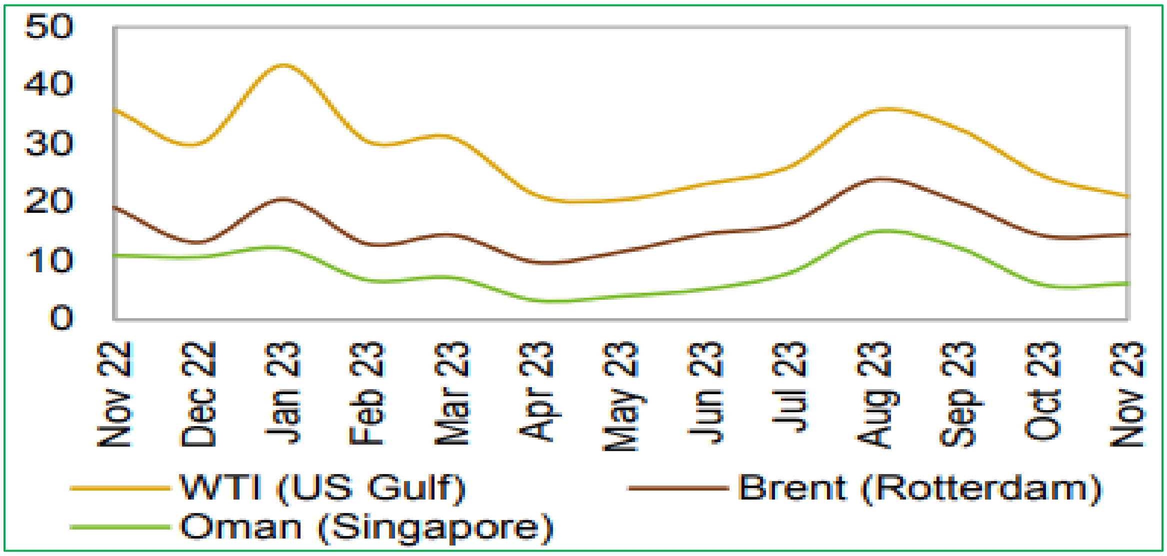
USGC refining margins against WTI extended their downward trend, having declined for the third consecutive month, although losses were significantly more contained compared to the previous month. Pronounced and continual decreases in gasoline crack spreads in line with seasonality weighed heavily on product markets despite the temporary support received over the Thanksgiving holidays. Moreover, higher refinery product output as a result of refiners' increased runs following the end of heavy turnarounds led to pressure on product markets all across the barrel, except gasoil. Total US gasoil inventories showed a drop over the month of November, further exacerbating the already low inventory levels, signaling tight availability.

In addition, lower temperatures in the US, along with higher y-o-y average heating degree (326 in November 2023 vs. 248 in November 2022, Platts), drove increased demand for heating oil, which helped gasoil crack spreads to post solid gains in November. However, these substantial gains were completely outweighed by the weakness observed in all other products, particularly gasoline. US refiners are expected to keep their focus on diesel production to increase heating oil production and replenish stocks, given the improvements in product crack spreads. In terms of operations, US refinery intake shifted course and increased with the end of heavy maintenance works, resulting in a monthly gain of 450 tb/d and bringing the average to 16.09 mb/d in November. USGC margins against WTI averaged $21.05/b, down by $3.47, m-o-m, and $14.80, y-o-y.

Refinery margins in Rotterdam against Brent increased slightly, mostly underpinned by positive performance at the top section of the barrel. Both gasoline and naphtha markets strengthened as exports for both products firmed up with some countries preparing for gasoline stockbuilds ahead of the year-end holiday season. On the other hand, products at the middle and bottom sections of the barrel in Northwest Europe experienced losses as stronger refinery processing rates contributed to expanding product balances in the region.

Refinery throughput in Europe experienced a reversal, trending upwards. According to preliminary data, it was 120 tb/d higher, at an average of 9.25 mb/d. Refinery margins against Brent in Europe averaged $14.48/b in November, 18¢ higher, m-o-m, but $4.64 lower y-o-y.

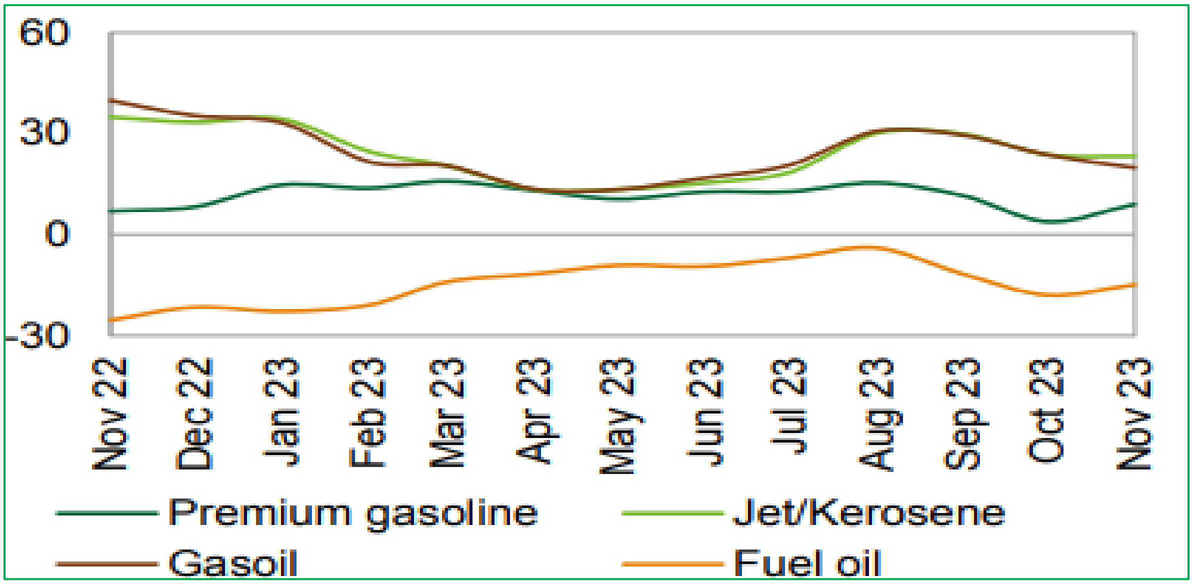
Figure 16: Refining Margins ($/bbl)



Source- Argus and OPEC

The Asian gasoline 92 crack posted significant gains, albeit not fully recovering all the ground lost in the previous month. This positive performance lifted gasoline crack spreads from the 12-month low in October, although they remained in the single-digit range. Most of the support was derived from healthy regional requirements, lower exports from China, and reported refinery problems in the Middle East, which limited gasoline flows from the Middle East to Asia in November. Reports indicating a temporary restraint in the release of additional Chinese product export quotas could help limit the upside potential for gasoline surplus in the near term. The Singapore gasoline crack spread against Dubai in November averaged $9.03/b. This was up by $5.13, m-o-m, and by $2.04 higher, y-o-y.

Figure 17: Singapore crack Spreads vs. Dubai ($/bbl)



Source- Argus and OPEC

The Singapore gasoil crack spread weakened along with that of jet/kerosene. The end of the heavy turnaround season in the Atlantic Basin points to pressure on East-to-West gasoil outflows going forward, potentially increasing the supply-side pressures in Asian gasoil markets in the near term unless refiners in the region decide to reduce runs. The Singapore gasoil crack spread against Oman averaged $19.88/b, down by $3.79, m-o-m, and by $19.91 lower, y-o-y.

Table 5: Singapore FOB, refined product prices ($/bbl) in November 2023

Singapore product prices	Price ($/b)	MoM (%) change	YoY (%) change
Naphtha	69.57	-1.7%	-6.3%
Premium gasoline (unleaded 95)	98.00	-0.9%	-0.3%
Regular gasoline (unleaded 92)	92.36	-1.4%	-0.8%
Jet/Kerosene	106.63	-6.1%	-11.9%
Gasoil/Diesel (50 ppm)	106.08	-9.4%	-16.5%
Fuel oil (180 cst 2.0% S)	103.06	-8.6%	-17.8%
Fuel oil (380 cst 3.5% S)	68.43	-4.8%	12.6%

Source- OPEC

Petroleum products consumption in India

Monthly Review:

- Overall consumption of all petroleum products in November 2023 with a volume of 18.72 MMT registered a de-growth of 0.66% on volume of 18.84 MMT in November 2022.
- MS (Petrol) consumption during the month of November 2023 with a volume of 3.13 MMT recorded a growth of 9.38% on volume of 2.86 MMT in November 2022.
- HSD (Diesel) consumption during the month of November 2023 with a volume of 7.52 MMT recorded a de-growth of 3.01% on volume of 7.76 MMT in the month of November 2022.
- LPG consumption during the month of November 2023 with a volume of 2.49 MMT registered growth of 0.76% over the volume of 2.47 MMT in the month of November 2022.
- ATF consumption during November 2023 with a volume of 0.690 MMT registered a growth of 11.67% over the volume of 0.618 MMT in November 2022.
- Bitumen consumption during November 2023 with a volume of 0.644 MMT registered de-growth of 10.78% over volume of 0.722 MMT in the month of November 2022.
- Kerosene consumption registered growth of 15.91% during the month of November 2023 as compared to November 2022.

Table 6: Petroleum products consumption in India, November 2023

Consumption of Petroleum Products (P)	Consumption in '000 MT	MoM (%) change	YoY (%) change
LPG	2,486	-0.4%	0.8%
Naphtha	1,027	-7.9%	1.9%
MS	3,129	-0.4%	9.4%
ATF	690	-0.2%	11.7%
SKO	45	32.7%	15.9%
HSD	7,528	-1.4%	-3.0%
LDO	55	-19.0%	-3.6%
Lubricants & Greases	309	0.7%	-24.4%
FO & LSHS	525	-1.4%	-4.9%
Bitumen	644	-9.4%	-10.8%
Petroleum coke	1,442	-6.6%	25.9%
Others	840	-14.8%	-30.2%
TOTAL	**18,720**	**-2.8%**	**-0.7%**

Source- PPAC

Natural Gas Market

Natural Gas Price – Monthly Review

- Natural gas spot prices at the US Henry Hub benchmark averaged $2.71 per million British thermal units (MMBtu) in November 2023. Henry Hub's natural gas prices receded in November after five consecutive monthly increases. Prices fell m-o-m by 9.4% as mounting pressure from continuing US inventory builds and robust domestic production offset a seasonal demand increase. According to estimates from the US Energy Information Administration, as of November 24, underground storage sites were around 8.9% higher than at the same time last year and 7.9% above the five-year average. Moreover, US LNG demand in other regions, particularly Europe, softened amid healthy inventories. Prices were down by 48.7%, y-o-y.

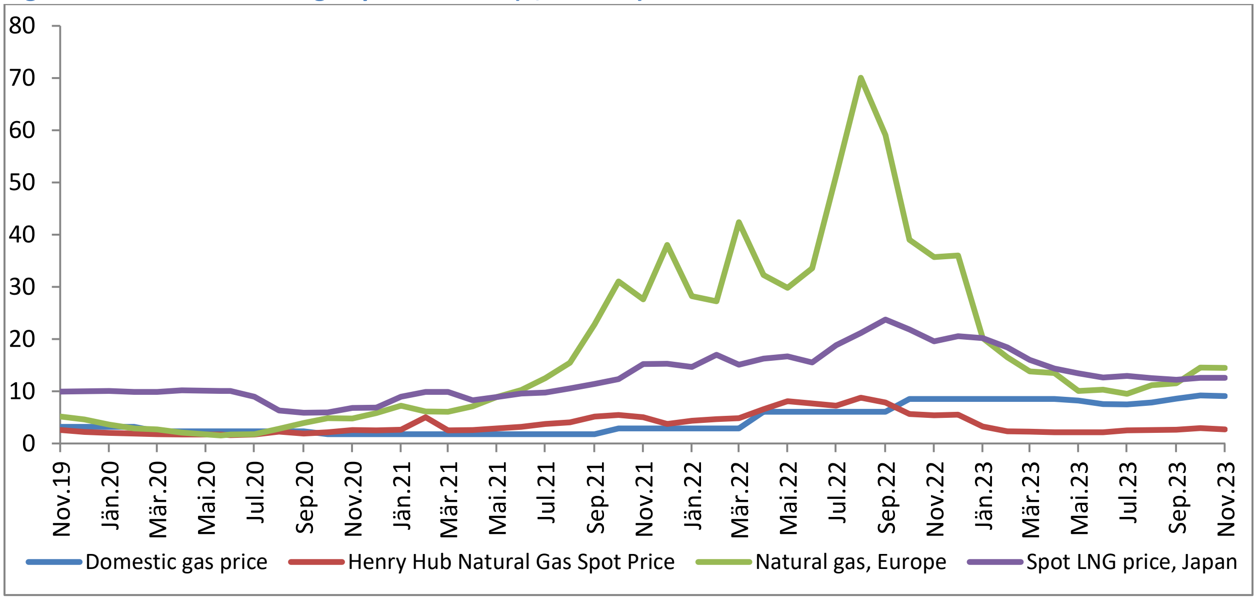
- The natural gas spot price at the Title Transfer Facility (TTF) in the Netherlands in Europe traded at an average of $14.49 per MMBtu. Natural gas prices in Europe receded after three consecutive monthly increases. The average Title Transfer Facility (TTF) price fell from $14.6/mmbtu in October to $14.5/mmbtu in November, a 0.6% m-o-m drop. Lower volatility of the geopolitical risk premium eased pressure on prices, but it remained elevated. Data from Gas Infrastructure showed EU inventories at over 95.0% capacity as of 30 November. However, the moderate m-o-m decline indicates that significant upside risks remain. Prices were down by 59.5%, y-o-y.

- Japan Liquefied Natural Gas Import Price averaged at $12.62 per MMBtu for November 2023, as compared to price of $12.57 per MMBtu in October 2023. Japan's liquefied natural gas (LNG) imports dropped in November compared to the same month last year, according to the provisional data released by the country's Ministry of Finance. The country's LNG imports decreased by 3.9% year-on-year in November to 5.33 million tonnes, the data shows. For the month of November 2023, LNG import bill of about $3.44 billion decreased by 34.1% compared to the same month last year.

- The Union Cabinet has approved a new formula for pricing of natural gas and imposed cap or ceiling price on the same. Natural gas produced from legacy or old fields, known as APM gas, will now be indexed to crude oil prices. From April 1 2023, APM gas will be priced at 10 per cent of the price of basket of crude oil that India imports. The rate such arrived at however will be capped at USD 6.5 per MMBTU. The price such arrived at will also have a floor of USD 4 per MMBTU.

- Further, in accordance with MoP&NG, Govt. of India, pricing freedom for gas being produced from discoveries in Deepwater, Ultra Deepwater and High Pressure-High Temperature areas, the gas price ceiling for the period 1st April, 2023 - 30th September, 2023 was notified as US$ 12.12/MMBTU on Gross Calorific Value (GCV) basis as per notification dated 31st March, 2023. Gas price ceiling was further revised for the period 1st October, 2023 – 31st March, 2024 was notified as US$ 9.96/MMBTU on Gross Calorific Value (GCV) basis as per notification dated 30th September 2023.

Figure 18: Global natural gas price trends ($/mmbtu)



Source- EIA, World Bank

Table 7: Gas price, November 2023

Natural Gas	Price ($/MMBTU)	MoM (%) change	YoY (%) change
India, Domestic gas price (Dec'23)	8.47	-7.1%	-1.2%
India, Gas price ceiling – difficult areas (Oct'23-Mar'24)	9.96	-17.82%	-20.06%
Henry Hub	2.71	-9.1%	-50.3%
Natural Gas, Europe	14.49	-0.5%	-59.4%
Liquefied Natural Gas, Japan	12.62	0.4%	-35.6%

Source- EIA, PPAC, World Bank

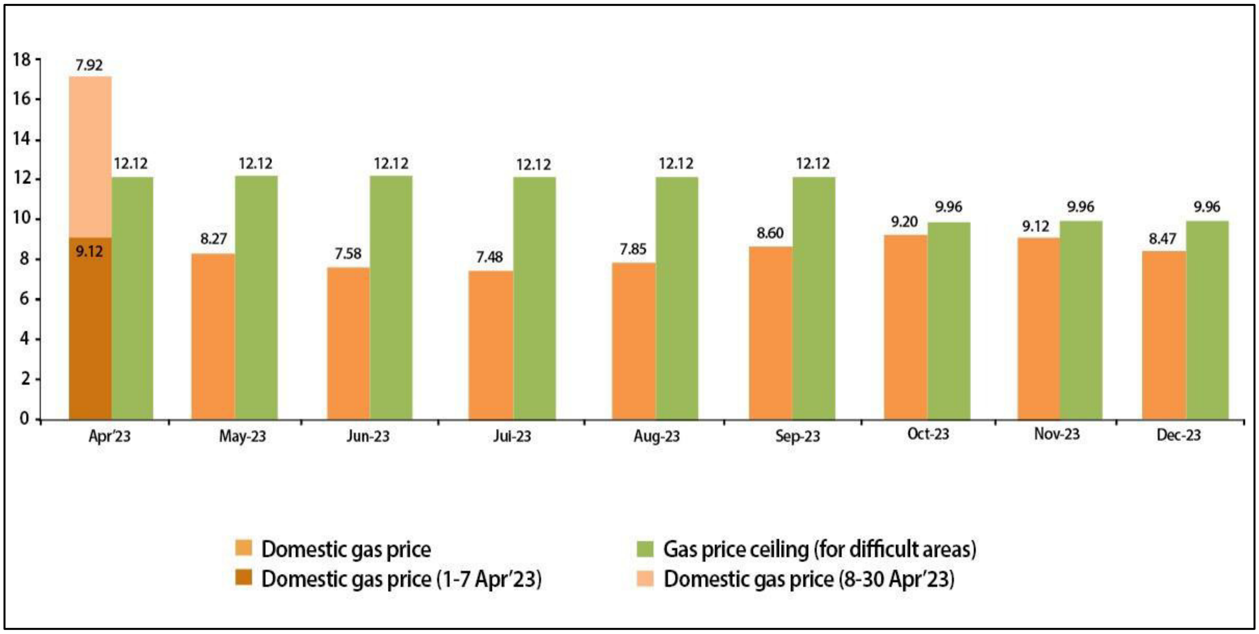
Table 8: Gas price, GCV Basis

Period	Domestic Gas calculated price in US$/MMBTU
1-7 April 2023	9.16
8-30 April 2023	7.92
1-31 May 2023	8.27
1-30 June 2023	7.58
1-31 July 2023	7.48
1-31 August 2023	7.85
1-30 September 2023	8.60
1-31 October 2023	9.20

Period	Domestic Gas calculated price in US$/MMBTU
1-30 November 2023	9.12
1-31 December 2023	8.47

Source- PPAC

Figure 19: Domestic natural gas price April – December 2023 ($/mmbtu)



Source- PPAC

Indian Gas Market

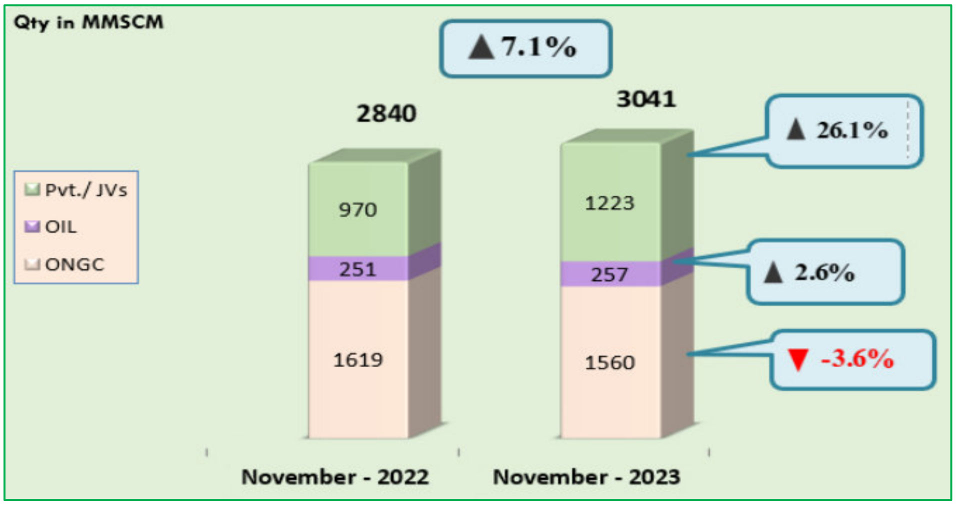
- Gross production of natural gas for the month of November 2023 was 3041 MMSCM which was higher by 7.1% compared with the corresponding month of the previous year.
- Total imports of LNG (provisional) during the month of November 2023 was 2393(P) (increase of 7.9% over the corresponding month of the previous year).
- Natural gas available for sale during November 2023 was 4935 MMSCM (increase of 8.5% over the corresponding month of the previous year).
- Total consumption during November 2023 was 5622 MMSCM (provisional). Major consumers were fertilizer (33%), City Gas Distribution (CGD) (19%), Power (10%), Refinery (8%) and Petrochemicals (4%).

Monthly Report on Natural gas production, imports and consumption – November 2023

1. Domestic Natural Gas Gross Production:

Domestic natural gas gross production for the month of November 2023 was 3,041 MMSCM (increase of 7.1% over the corresponding month of the previous year).

Figure 20: Domestic natural gas Gross production (Qty in MMSCM)

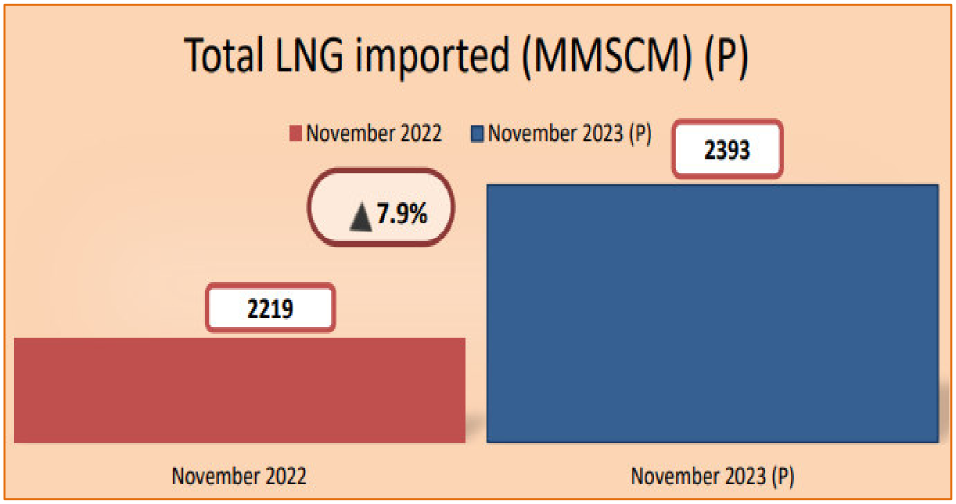


Source- PPAC

2. LNG imports:

Total imports of LNG (provisional) during the month of November 2023 were 2,393 MMSCM (increase of 7.9%) over the corresponding month of the previous year 2,219 MMSCM.

Figure 21: LNG imports (Qty in MMSCM)

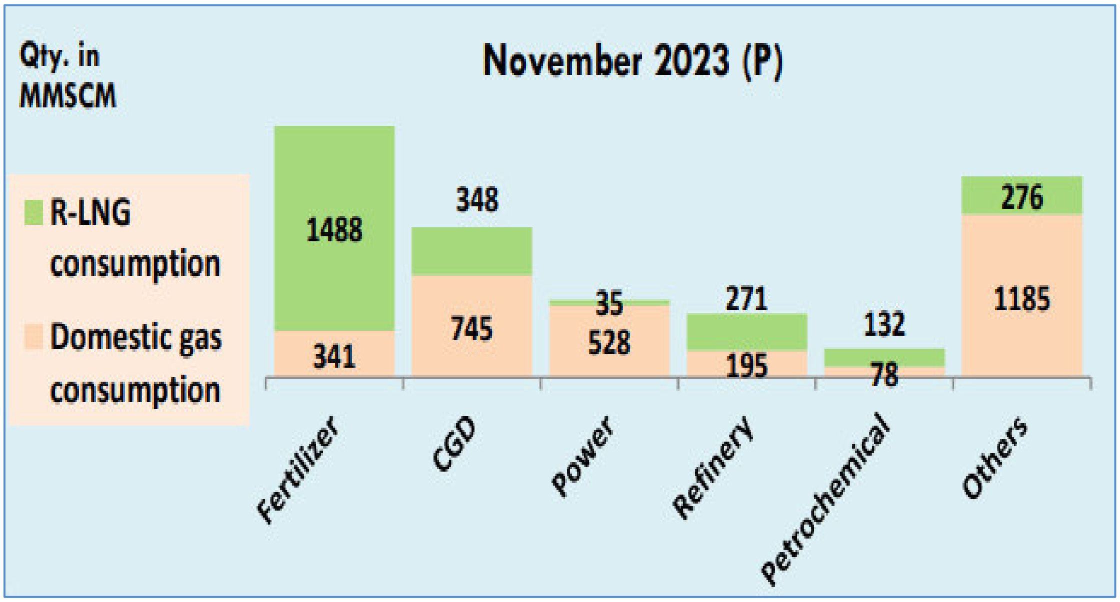


Source- PPAC

3. Sectoral Consumption of Natural Gas:

Major consumers were fertilizer, CGD, power, refinery, petrochemicals among others.

Figure 22: Sectoral Consumption of Natural Gas (Qty in MMSCM) in November 2023



Source- PPAC

Key developments in Oil & Gas sector

- **Monthly Production Report for November, 2023**

1. Production of Crude Oil

Indigenous crude oil and condensate production during November 2023 was 2.4 MMT. OIL registered a production of 0.3 MMT, ONGC registered a production of 1.6 MMT whereas PSC registered production of 0.5 MMT during November 2023. There is a degrowth of 0.4% in crude oil and condensate production during November 2023 as compared to November 2022.

2. Production of Natural Gas

Gross production of natural gas for the month of November 2023 (P) was 3041 MMSCM which was higher by 7.1% compared with the corresponding month of the previous year. The cumulative gross production of natural gas of 24081 MMSCM for the current financial year till November 2023 was higher by 5.1% compared with the corresponding period of the previous year.

3. Crude Oil Processed (Crude Throughput)

Total Crude oil processed during November 2023 was 21.7 MMT which is 10.7% higher than November 2022, where PSU/JV refiners processed 15.0 MMT and private refiners processed 6.7 MMT of crude oil. Total indigenous crude oil processed was 2.0 MMT and total Imported crude oil processed was 19.7 by all Indian refineries (PSU+JV+PVT). There was a growth of 3.5 % in total crude oil processed in April November FY 2023 – 24 as compared to same period of FY 2022 – 23.

4. Production of Petroleum Products

Production of petroleum products was 22.8 MMT during November 2023 which is 12.4% higher than November 2022. Out of 22.8 MMT, 22.5 MMT was from refinery production & 0.3 MMT was from fractionator. There was a growth of 5.0 % in production of petroleum products in April November FY 2023 – 24 as compared to same period of FY 2022 – 23. Out of total POL production, in November 2023, share of HSD is 43.7 %, MS 15.6 %, Naphtha 6.5 %, ATF 6.2 %, Pet Coke 5.5 %, LPG 4.7% which are of major products and rest are shared by Bitumen, FO/LSHS, LDO, Lubes & others.

Key Policy developments/significant news in Energy sector

Decrease in windfall tax on petroleum crude, SAED reduced on diesel; Petrol to remain zero; Windfall tax increase on ATF

The Indian government decreased the windfall tax on crude petroleum to Rs 1,300 per ton from Rs 5,000 per ton with effect from December 19, 2023. Special Additional Excise Duty (SAED) on diesel was reduced to Rs 0.5 per litre from Rs 1 per litre. The windfall tax on petrol will remain nil. However, the levy on export of jet fuel or ATF has been hiked to Rs 1 per litre from nil earlier.

India first imposed windfall profit taxes on 1st July 2022, joining a growing number of nations that tax super normal profits of energy companies. At that time, export duties of ₹6 per litre ($12 per barrel) each were levied on petrol and ATF and ₹13 a litre ($26 a barrel) on diesel. A ₹23,250 per ton ($40 per barrel) windfall profit tax on domestic crude production was also levied. The export tax on petrol has since been scrapped. The tax rates are reviewed every fortnight based on average oil prices in the country.

Coal Import for blending at 6% till March 2024, to ensure uninterrupted power supply across the country

The Union Minister for Power and New & Renewable Energy has given an explanation of the government's policy regarding use of imported coal in thermal power plants, as given below.

The concern of Ministry of Power is to ensure sufficient availability of coal at Thermal Power Plants (TPPs) so that the demand for electricity may be met. Coal, whether domestic or imported, is procured by Thermal Power Plants [Domestic Coal Based (DCBs) plants or Imported Coal Based Plants (ICBs)] separately and as per their requirements. As Coal is under open general licence (OGL) since 1993, thermal power plants / generators have been regularly importing coal as per their preference (imported coal has high Gross Calorific Value and therefore is of better quality) and need, based on their commercial prudence. There are a number of Power Plants based exclusively on imported coal. In addition, the Domestic Coal Based (DCBs) plants have been importing coal for blending purpose since 2009. The imports for blending varied between a peak of 47.6 MT in 2015-16 to 23.8 MT in 2019-20. In 2020, Ministry of Power advised States to reduce imports for blending; as a result, the imports declined to 8.1 MT in the year 2021-22. Information regarding coal imports by DCBs and ICBs is regularly collected and monitored by Central Electricity Authority.

The import of coal by thermal Power Plants during last 14 years and in the current year (up to October 2023) is as follows:

Import of coal by power sector			
			Figure in Million Tonnes
Year	**For Blending**	**By Imported Coal Based plants**	**Total Imports**
2009-10	18.8	4.4	23.2
2010-11	21.1	9.4	30.5
2011-12	27.3	17.6	44.9
2012-13	31.1	31.6	62.7
2013-14	38.6	40.9	79.5
2014-15	47.6	42.5	90.1
2015-16	37.1	44.0	81.1
2016-17	19.8	46.3	66.1
2017-18	17.0	39.4	56.4
2018-19	21.4	40.3	61.7
2019-20	23.8	45.5	69.3
2020-21	10.4	35.1	45.5
2021-22	8.1	18.9	27.0
2022-23	35.1	20.5	55.6
2023-24 (Apr-Oct)	13.6	21.7	35.3

The above table clearly shows that Import of coal for DCBs was on decline since 2019-20 primarily due to increased availability of domestic coal on account of various policy measures taken to increase domestic coal production. Accordingly, the Ministry of Power, in FY 2020-21, gave advisory to GENCOS to reduce their imports as Ministry of Coal informed that sufficient domestic coal was available. However, from July '21 onwards the consumption of coal in Thermal Power Plants increased because of increased demand and the supply of domestic coal on a daily basis was less than consumption which resulted in depletion of coal stock and stocks at plants' end came down from 28.7 Million Tones (MT) as on 30.06.2021 to about 8.1 Million Tones (MT) as on 30.09.2021.

Therefore, in December 2021, Ministry of Power advised State GENCOs and Independent Power Producers to import @4% and Central GENCOs @10% of their requirements during 2022-23. During the month of April, 2022, the Power Demand and the coal consumption in power plants grew by about 12% as compared to April 2021. In view of the high demand for power and receipt of coal being less than consumption leading to depletion of coal stock, Ministry of Power on 28.04.2022 advised States and IPPs to import coal @ 10% of their requirement to maintain sufficient coal stock during the monsoon season. The gap between receipt of domestic coal and consumption continued and shortages partially met through Imported Coal.

During April-Sep 2022 (QI, Q2 of FY 2022-23) the receipt of domestic coal was about 355 MT against the consumption of 385 MT (Dom: 359 MT + Imp: 1.4 x 18.9 MT). The gap between supply of domestic coal and consumption of coal was about 1.6 lakh tons / day during this period. On the improvement of the situation, Ministry of Power advised GENCOs on 01.08.2022 to take decision regarding blending at their level considering the domestic coal supply and stock position (need based blending) with continuous monitoring of stock levels.

The gap between daily coal consumption and daily arrival of domestic coal ranged between 2.65 Lakh Tones to 0.5 Lakh Tones between the months of September 2022 and January 2023. If the imports for blending had not been made, the coal stocks in thermal power plants would have reduced to ZERO in September 2022 and would have continued so, leading to widespread power cuts and blackouts. Therefore, Ministry of Power advised Central, State Gencos and Independent Power Producers (IPPs) on 09.01.2023 to import coal @ 6% by weight through a transparent competitive procurement for blending to have sufficient coal stocks at their power plants for smooth operations till September 2023.

In the current Financial Year, Power Supply position has been regularly reviewed by the Ministry of Power and it has been observed that there is consistent rising trend in the power demand in the country coupled with inadequate supply of domestic coal which has resulted in rapid depletion of coal stocks at Domestic Coal Based (DCB) Plants across the country. During April-October 2023, the average growth in coal-based generation, with respect to corresponding period of FY 23, was 8.6% and the depletion in DCB plants stocks was 15.3 MT (Month-wise position is shown in table).

Major outcomes from 28th Session of the UN Climate Change Conference (COP 28)

An inter-ministerial delegation from India attended the 28th Session of the UN Climate Change Conference (COP 28) held in Dubai, United Arab Emirates from 30th November'2023 to 13th December'2023.

The major outcome from COP 28 included the decision on Outcome of the First Global Stock take, ratcheting up global climate ambition before the end of the decade. These global efforts will be taken up by the countries in a nationally determined manner considering the Paris Agreement and their different national circumstances. Another major outcome of COP 28 is the agreement on the operationalization of the Loss and Damage Fund and its funding arrangements.

The decision on Loss and Damage Fund adopted at COP 28 approved the Governing instrument of the Loss and Damage Fund and decided that the Fund will be serviced by new, dedicated, and independent secretariat. It was also decided that the Fund will be supervised and governed by the Board. The Fund is accountable to and functions under the guidance of the Conference of Parties serving as the meeting of the Parties to the Paris Agreement (CMA). Since the decision, an amount of around USD 700 million to date has been pledged by several countries, including United Arab Emirates, Germany, United Kingdom, European Union, Japan. The purpose of the Fund is to assist developing countries that are particularly vulnerable to the adverse effects of climate change in responding to economic and non-economic loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events.

Another major outcome related to Loss and Damage is the decision on Santiago network for averting, minimizing, and addressing loss and damage to catalyze the technical assistance of relevant organizations, bodies, networks and experts for the implementation of relevant approaches associated with climate change impacts. The host of the Secretariat for the Santiago Network was finalized at COP 28. The joint consortium of the United Nations Office for Disaster Risk Reduction and the United Nations Office for Project Services have been selected as the host of the Santiago network secretariat for an initial term of five years, with five-year renewal periods.

Countries including Canada, Japan, Spain, Switzerland, and the United States of America have announced their financial contributions to the work of the Santiago network.

Ministry of Heavy Industries provides subsidy amounting to Rs. 5294.00 crore to EV manufactures on sale of 11,79,669 no. of EVs under phase-II of FAME Scheme, as on 11th December, 2023

The Ministry of Heavy Industries has given subsidy amounting to Rs. 5294.00 crore to electric vehicle manufactures on sale of 11,79,669 no. of electric vehicles under phase-II of FAME India Scheme, as on 11.12.2023.

Sl. No.	Wheeler Type	Total No. of Vehicle
1.	2-wheeler	10,42,110
2.	3-wheeler	1,22,690
3.	4-wheeler	14,869
Total		**11,79,669**

The details of sold electric vehicles category wise are as under:

Further, MHI sanctioned 6862 electric buses to various cities/STUs/State Govt. entities for intracity operations. Out of 6862 e-buses, 3487 e-buses have been supplied to STUs as on date i.e. 29thNovember, 2023.

Ministry of Heavy Industries has also sanctioned Rs. 800 Cr. as capital subsidy to the three Oil Marketing Companies (OMCs) of the Ministry of Petroleum and Natural Gas (MoP&NG) for establishment of 7,432 electric vehicle public charging stations.

Further, the Ministry of Heavy Industries has launched two production linked incentive schemes to promote domestic manufacturing of Advanced Automotive Technology products including electric vehicles and advanced chemistry cells:

Production Linked Incentive (PLI) Scheme for Automobile and Auto Component Industry with a budgetary outlay of Rs. 25,938 crores, provides financial incentives to boost domestic manufacturing of Advanced Automotive Technology products including electric vehicles and their components. The scheme provides incentive up to 18% of eligible sales of electric vehicles and their components.

The Government has approved Production Linked Incentive (PLI) scheme, 'National Programme on Advanced Chemistry Cells (ACC) Battery Storage' for manufacturing of ACC in the country with a budgetary outlay of Rs. 18,100 crores. The scheme incentivizes the establishment of Giga scale ACC manufacturing facilities in the country for 50 Giga Watt hour (GWh). These ACCs will be used in batteries which are aimed to promote the widespread adoption of EVs.

The Ministry of Heavy Industries formulated Faster Adoption and Manufacturing of Electric Vehicles in India Phase II (FAME India Phase II) Scheme for a period of five years commencing from 1st April,2019 with a total budgetary support of Rs. 10,000 crores. This phase mainly focuses on supporting electrification of public & shared transportation, and aims to support through demand incentive 7090 e-buses, 5 lakh e-3 Wheelers, 55000 e-4 Wheeler Passenger Cars and 10 lakh e-2 Wheelers. In addition, creation of charging infrastructure is also supported under the Scheme.

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