



## India's Energy Strategy

**For Prelims:** [Liquefied Natural Gas](#), [International Energy Agency](#), [Ethanol Blended Petrol](#), [Organization of the Petroleum Exporting Countries](#), [Global Biofuel Alliance](#)

**For Mains:** Energy Security & Diversification, Opportunities and challenges in India's Energy Security.

[Source:TH](#)

### Why in News?

India has committed to increasing its oil and natural gas imports from the US, with energy trade expected to rise from **USD 15 billion to USD 25 billion** in the near future. This move is part of a broader goal to [double bilateral trade to USD 500 billion](#).

- The decision enhances [India's energy security](#) while strengthening **economic ties amid global geopolitical shifts**.

### Why is India Expanding Energy Trade with the US?

- **Energy Security:** India, the world's **3rd-largest oil importer and consumer**, relies on **imports for over 85% of its crude needs**. With **primary energy demand set to nearly double to 1,123 million tonnes of oil equivalent** by 2040 driven by a projected [Gross Domestic Product \(GDP\)](#) rise to **USD 8.6 trillion**, making supply stability crucial.
  - **Expanding energy trade with the US** reduces dependency on **West Asia and Russia**, while **diversifying sources** mitigates risks from geopolitical disruptions.
- **Bilateral Trade Growth:** Expanding **energy imports** helps balance **India's USD 45.7 billion trade surplus** with the US in 2024, while advancing the **'Mission 500'** initiative to double bilateral trade to **USD 500 billion by 2030**.
- **Infrastructure Boost:** Competitively priced **US crude and [Liquefied Natural Gas \(LNG\)](#)** aim to make the US a **leading supplier** to India, supporting **industrial growth, refining expansion, and petrochemical investments**.
- **Geopolitical Benefits:** Stronger US energy ties support **India's bid for full membership in the [International Energy Agency \(IEA\)](#)**.
  - Strengthened US-India ties in energy can **counterbalance China's influence in global energy markets**.

### What is the State of India's Energy Consumption?

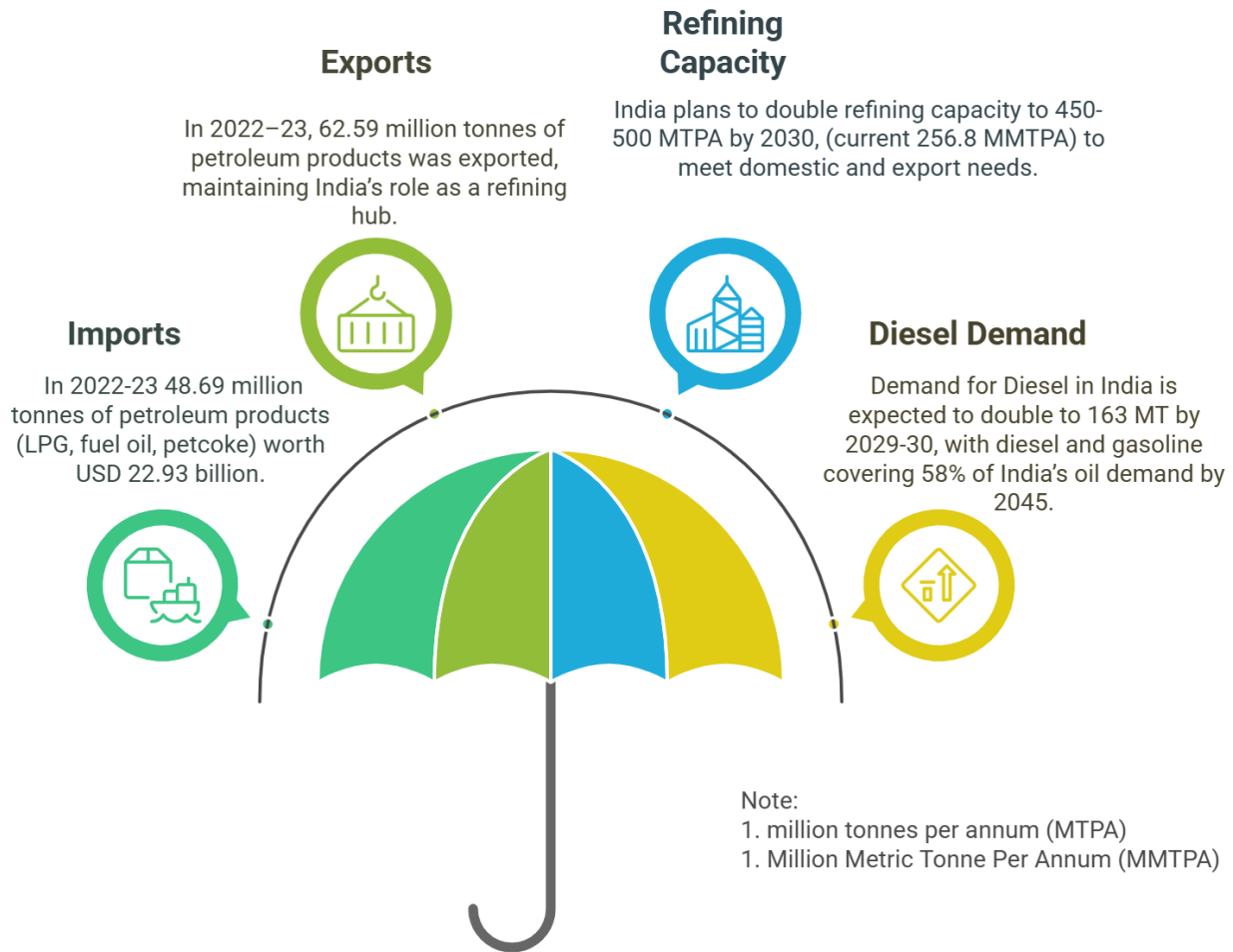
- **Crude Oil:**
  - **Total Imports (2023-24): 234.26 million tonnes** of crude oil.
  - **Import Dependence:** India's **crude oil import dependence increased to 87.8%** in 2023-24, with **domestic production meeting less than 13%** of the total demand.
  - **Future Projection:** Crude oil consumption is expected to grow at a [Compound Annual](#)

**Growth Rate (CAGR)** of 4.59% to 500 million tonnes by FY40.

▪ **Petroleum Products and Diesel:**

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### Petroleum Products and Diesel



- **Natural Gas and Cleaner Fuels:** India aims to increase **natural gas's share in the energy mix to 15% by 2030** (from the current ~6%).
  - **Total LNG Imports (2023-24): 31.80 billion cubic meters (bcm) worth USD 13.405 billion.**
  - **Ethanol Blending Target: Advanced to 20% by 2025-26** to reduce reliance on fossil fuels, with **ethanol production capacity** reaching around **1,600 crore litres** as of September 2024.
    - The **Ethanol Blended Petrol (EBP)** programme has reduced CO<sub>2</sub> emissions by 544 lakh metric tons and substituted **181 lakh metric tons of crude oil.**

### What is India Doing to Meet the Energy Needs?

- **Increasing Domestic Production:** India aims to **double its oil & gas exploration area** from **0.5 million sq. km by 2025** to **1 million sq. km by 2030**.
  - New projects in the **Krishna-Godavari (KG) Basin** and **offshore exploration** efforts are expected to boost output.
- **Global Energy Partnerships:** India's diversified import strategy from sources like **US, Russia, Brazil, Canada, and Africa** helps ensure supply security amid geopolitical disturbances, though

it may **not fully shield against long-term price volatility.**

- Russia now supplies **40% of India's crude imports** (less than 1% before 2022).
- India is strengthening ties with **IEA, [Organization of the Petroleum Exporting Countries \(OPEC\)+](#)** for long-term contracts.
- The **[Global Biofuel Alliance](#)**, an initiative by **India** which intends to expedite the global uptake of biofuels.
- **LNG & Gas Pipeline Expansion:** The **Unified Pipeline Tariff** aims for "One Nation, One Grid, One Tariff," benefiting remote consumers and boosting gas market growth.
  - India is expanding **city gas distribution networks, and import terminals** to support growing demand.
- **Strategic Petroleum Reserves (SPR):** SPR Program acts as a buffer against supply disruptions and price volatility in global markets.
  - India aims to commercialize **50% of its SPR** to raise funds and build additional storage tanks to offset high oil prices.
  - **Clean & Renewable Energy:** India targets **500 GW of renewable energy capacity by 2030** with expansion of **solar, wind, and hydro projects** to reduce reliance on fossil fuels.
  - The government promotes **ethanol blending, biodiesel, and compressed biogas (CBG)** while announcing a **USD 67 billion investment in hydrogen energy projects in 2024.**
- **Policy Reforms:** The government allows 100% FDI under the automatic route for oil & gas PSUs and upstream and private sector refining projects, boosting investment and energy sector growth.
  - The **[Hydrocarbon Exploration and Licensing Policy](#)** aims to increase domestic oil and gas production.
  - Subsidies are provided for **electric vehicles (EVs), green hydrogen, and biofuels** to reduce dependence on crude oil.

## Conclusion

India's oil and gas needs are driven by economic growth, rising demand, and high import dependence. To ensure energy security, the country is expanding refining capacity, investing in natural gas, and diversifying imports while transitioning to cleaner energy.

### **Drishti Mains Question:**

How does India's strategy of diversifying its oil and gas imports impact its energy security?

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### **Prelims**

**Q.1 With reference to furnace oil, consider the following statements: (2020)**

1. It is a product of oil refineries.
2. Some industries use it to generate power.
3. Its use causes sulphur emissions into environment.

**Which of the statements given above are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans: (d)**

**Q.2 The term 'West Texas Intermediate', sometimes found in news, refers to a grade of**

**(2020)**

- (a)** Crude oil
- (b)** Bullion
- (c)** Rare earth elements
- (d)** Uranium

**Ans: (a)**

**Mains:**

**Q.** The question of India's Energy Security constitutes the most important part of India's economic progress. Analyse India's energy policy cooperation with West Asian countries. **(2017)**

**Q.** "Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs)". Comment on the progress made in India in this regard. **(2018)**

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