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TODAY'S IMPORTANT CURRENT AFFAIRS

UPSC MAINS

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ENERGY SECTOR TRANSFORMATION

Source: The post is based on the article published in “The Hindu” on 04.06.2025.

In News: A Strategy fuelled by vision powered by energy.

Recently, India become the fourth largest economy .

Syllabus: Mains – GS III(INDIAN ECONOMY -GROWTH,DEVELOPMENT)



India economic growth

India has officially surpassed Japan to become the world's fourth largest economy in 2025, with a nominal GDP of approximately \$4.19 trillion, just edging past Japan's \$4.18 trillion, according to the IMF and confirmed by NITI Aayog and government officials.

- ❖ Since 2014, India's GDP has more than doubled, rising from the 10th largest to the 4th largest globally in just 11 years—a growth of about 105%.
- ❖ India is now behind only the US, China, and Germany, and is projected to become the third largest economy within the next 2.5 to 3 years if current trends continue.
- ❖ The country remains the world's fastest-growing major economy, with a projected GDP growth rate of 6.2% for 2025, far outpacing other large economies.

Drivers of India's Economic Rise

- ❖ **Reforms and Policy Initiatives:** Major reforms like the Goods and Services Tax, Insolvency and Bankruptcy Code, manufacturing sector incentives, and digitalization have underpinned sustained growth.
- ❖ **Energy Sector Transformation:** India is now the third largest **energy and oil consumer**, fourth largest refiner, and fourth largest LNG importer globally. The government's focus on energy security, diversification, renewables, and affordability has been central to its strategy.
- ❖ **Infrastructure Expansion:** Significant growth in pipelines, city gas networks, and strategic reserves, with LPG and CNG access expanding rapidly, supporting both urban and rural consumers.
- ❖ **Green Energy Push:** **Ethanol blending** in petrol has jumped from 1.5% in 2013 to nearly 20% in 2025, saving foreign exchange and reducing emissions. India is also investing heavily in **green hydrogen and compressed biogas**.
- ❖ **Outlook and Significance**
 - ✧ **Per Capita Income:** India's per capita income has doubled from \$1,438 in 2013-14 to \$2,880 in 2025, though it remains lower than many advanced economies.
 - ✧ **Consumer Focus:** Despite global price volatility, fuel prices in India have been kept stable through targeted subsidies and excise cuts, ensuring affordability for citizens.
 - ✧ **Future Trajectory:** India's economic momentum, demographic dividend, and continued reforms position it as a strategic global force, with ambitions to soon become the third largest economy

Energy Sector Transformation in India: Detailed Explanation

- ❖ **Structural Transformation (2014–2025):**
 - ✧ India's energy sector has undergone a major shift with a focus on affordable, clean, and self-reliant energy, driven by reforms and green initiatives.
 - ✧ The sector now addresses the **“energy trilemma”: availability, affordability, and sustainability**, through diversification, domestic production, renewables, and price reforms.

Key Developments:

- ❖ **Renewable Energy Surge:**
 - ✧ India is now ranked **3rd in solar, 4th in wind, and 4th in total renewable energy** capacity globally.
 - ✧ Installed renewable energy capacity jumped from 78 GW in 2014–15 to 199 GW in 2023–24, with solar alone rising from 2.82 GW in 2014 to 100 GW in 2025.
 - ✧ In 2024–25, a record 29 GW of renewable energy was added in a single year.

- ✧ Over 232 GW of renewable capacity is now installed, with another 176 GW under construction.
- ❖ **Hydrocarbon Sector Modernization:**
 - ✧ Major reforms like the **Open Acreage Licensing Policy (OALP)** have unlocked new exploration and investment, expanding domestic oil and gas production.
 - ✧ Significant discoveries and expanded gas infrastructure have increased the share of natural gas in the energy mix.
- ❖ **Electricity Generation and Grid Expansion:**
 - ✧ Total electricity generation grew from 2,05,608 GWh in 2014–15 to 3,70,320 GWh in 2023–24.
 - ✧ India's power sector has seen rapid capacity additions, with a target to **install 50 GW of non-fossil fuel capacity** annually to reach **500 GW by 2030**.
- ❖ **Policy and Investment:**
 - ✧ Consistent government tenders for solar, wind, hybrid, and storage projects have boosted private and public investment.
 - ✧ India is committed to achieving **50% of installed power** capacity from **non-fossil sources** by 2030 and **net-zero** emissions by 2070.
- ❖ **Global Leadership:**
 - ✧ India is the **first G20 country** to achieve its Paris Agreement goals and now shapes global clean energy discourse.

Significance of the Energy Sector as a Growth Driver

- ❖ **Economic Growth and Development**
 - ✧ The energy sector is central to India's rapid economic expansion, underpinning industrial growth, infrastructure, and rising household incomes.
 - ✧ **Massive investments**—estimated at \$600 billion to ₹40 trillion over the next decade—are set to expand generation, transmission, and smart metering, driving job creation, GDP growth, and technological advancement.
 - ✧ Electricity consumption is projected to grow by over **7% annually**, reflecting the sector's role in supporting urbanization, manufacturing, and digitalization.
- ❖ **Geopolitical Implications**
 - ✧ India's surging energy demand is making it a pivotal player in global energy markets, influencing commodity flows and prices.

- ✧ **Increased imports of oil, LNG,** and coal strengthen ties with Russia, the Middle East, Australia, and Southeast Asia, while **fostering competition for long-term** contracts and favorable trade terms.
- ✧ **India's diversified energy mix** and push for renewables **reduce overdependence** on any single source or region, enhancing national security and negotiating power.
- ✧ The India-US relationship is becoming more strategic, as both nations seek to secure supply chains and investment in clean technologies