Indian Economy · GS - III

Explain the key challenges for India's energy security. What measures do you suggest for ensuring energy security along with economic growth and sustainability?

EXAM YEAR	PAPER	SUBJECT
2026	GS - III	Indian Economy

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Import dependence, crude oil, gas, price volatility, geopolitics, energy transition, coal, renewables, storage, nuclear energy, energy efficiency, green hydrogen

Model Answer

Energy security means reliable, affordable and sustainable access to energy. For India, it is closely linked with economic growth because transport, industry, agriculture and households remain energy-intensive.

Key challenges:

1. Import dependence: Heavy dependence on imported crude oil and gas exposes India to geopolitical disruptions and global price volatility.
2. Energy transition: Rapid decarbonisation must occur without compromising affordable energy access.
3. Infrastructure gaps: Transmission constraints, inadequate storage and uneven distribution affect renewable integration.
4. Resource constraints: Coal dependence creates environmental and air-pollution concerns, while land and water requirements constrain some renewable projects.

A balanced strategy should include:

1. Diversifying crude and gas suppliers and expanding strategic petroleum reserves.

2. Accelerating solar, wind, nuclear, hydro and bioenergy while strengthening grid-scale battery and pumped-storage capacity.
3. Promoting green hydrogen, biofuels and EVs for hard-to-abate sectors and transport.
4. Improving energy efficiency through efficient appliances, industrial standards and demand-side management.
5. Expanding domestic exploration while reducing dependence through electrification and renewable substitution.

India has already diversified crude sources and promoted ethanol, CBG, EV infrastructure and energy efficiency as part of its import-reduction strategy.

Thus, India's energy strategy should pursue the “energy trilemma” of security, affordability and sustainability rather than treating decarbonisation and development as competing objectives.

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