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When Global Tensions Hit Home: Rethinking India's Energy Security

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Article Content:

Disruption in the Strait of Hormuz began as a regional event but has now become a global systemic shock. Tensions between the United States and Iran cannot be viewed solely through a geopolitical lens. Both sides face strategic limits, making de-escalation costly. This prolonged uncertainty is keeping energy markets and global growth on edge. The United Arab Emirates's exit from OPEC and shift from joint production frameworks signal a bigger structural change. For India, this creates a dual reality. In the short term, producer fragmentation increases price volatility. In the medium term, it may allow for more flexible bilateral arrangements. The oil market may not necessarily be cheaper, but become less predictable, changing the calculus of energy security.

India's energy dependence runs deeper than transport:

India's vulnerability is structural, not episodic. Fossil fuels in India go beyond transport; they are embedded throughout the economy. Oil powers transportation, but also petrochemicals and industrial feedstocks. Natural gas is vital for fertilisers, city gas, and refining. LPG remains households' main cooking fuel. Even as renewables expand, the system still relies on combustible fuels for process heat, industrial output, and daily use, making India vulnerable to global supply disruptions.

The macroeconomic impact: inflation, growth and remittances:

The first channel is the import bill. More than half of India's crude imports come from OPEC. Any sustained Gulf disruption drives higher import costs and inflation. Elevated crude prices raise costs for transport, manufacturing, fertilisers, aviation, and logistics. Inflation goes beyond fuel and affects the broader economy.

The second channel is more subtle but equally significant: remittances. India is the world's largest recipient of remittances, with substantial inflows from the Gulf. Economic stress in these economies, driven by oil volatility and fiscal tightening, will dampen income flows to India.

Together, these effects mean higher import costs, inflation, and weaker remittances, all of which weigh on growth. While estimates vary, a prolonged energy shock could plausibly reduce GDP growth by up to one percentage point through combined channels.

Energy transition as economic security:

For many countries, energy transition is primarily a climate objective. For India, it is also a matter of economic resilience and national security. The goal is not strict energy self-sufficiency, but risk reduction. Every incremental unit of domestic energy, whether gas, renewable power, or biofuel, reduces exposure to volatile global markets.

Policy direction already reflects this shift. The green hydrogen program is not positioned as a symbolic initiative but as an industrial strategy. Its applications span fertilisers, refining, steel, and future fuels such as ammonia and methanol.

Equally important is the next phase of renewables. India has built major solar and wind capacity. The challenge now is utilisation and reliability. Round-the-clock power, backed by storage and flexible dispatch, must become the new baseline. Pumped hydro, with over 100 GW identified, is central. Nuclear energy with small modular reactors adds long-term stability. Together, these technologies hedge against imported volatility.

Electrification and the minerals constraint:

Transport electrification is the fastest way to reduce oil dependence. Indian Railways exemplifies this, having nearly electrified its entire network. This proves large-scale fuel substitution is feasible. The next challenge is road transport and supporting infrastructure. Methanol and green shipping fuels need sharper focus now.

However, electrification brings new dependencies: critical minerals and rare earths. Batteries, motors, wind turbines, and grid systems rely on lithium, nickel, and rare earths. India's strategy must go beyond energy generation to cover supply chains. The launch of the National Critical Mineral Mission and Rare Earth Corridors shows this shift. These initiatives emphasise exploration, processing, stockpiling, and recycling. Without this focus, dependence shifts from imported oil to imported minerals.

Biofuels as a domestic buffer:

Biofuels are key to reducing import dependence. Ethanol blending has scaled quickly, with the 20% petrol blend target nearing. Compressed biogas converts agricultural and urban waste into energy, substituting imports while tackling issues like crop burning and waste. Sustainable aviation fuel (SAF) is a strategic frontier that offers a hedge against volatility in aviation fuel imports.

The broader advantage of biofuels lies in their local nature. Unlike crude oil or LNG supply chains, biofuel supply chains are domestic. This makes them inherently more resilient to geopolitical disruptions. Scaling them, however, will require coordinated policy across feedstock supply, pricing, logistics, and longterm offtake commitments.

Lessons from the Green Revolution:

India previously overcame a similar strategic supply chain challenge. In the 1960s, the country relied heavily on food imports. Over two decades, coordinated policy, technology, infrastructure, and institutional efforts made India food-secure. The lesson is not replication, but an approach. Largescale transformation requires sustained, mission-driven execution across fronts. Energy security requires similar effort. It is not a single policy lever, but an ecosystem: domestic production, diverse sourcing, electrification, storage, renewables, biofuels, and robust mineral supply chains.

A defining decade:

India's energy transition can no longer wait. Global tensions demand immediate action. The objective: reduce vulnerability, build domestic capability, and create a resilient system that absorbs shocks without slowing growth. This will not happen quickly. But as the Green Revolution showed, sustained, long-term effort can alter structural dependence. In a more uncertain global environment, energy security is no longer just about supply. It is about building a resilient pathway for India's growth.