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EDITORIAL ANALYSIS

India's Energy Security Math — Why 22 Days of SPR Is Not Enough for a 2030 Geopolitical Reality

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India's Energy Security Math — Why 22 Days of SPR Is Not Enough for a 2030 Geopolitical Reality

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THE EDITORIAL ARGUMENT

India's Strategic Petroleum Reserves (SPR) at Vishakhapatnam, Mangalore, and Padur cover approximately **10 days** of national oil consumption. When Phase 2 sites (Chandikhol in Odisha, Padur expansion) are operational — currently under construction — coverage will rise to approximately **22 days**.

By international standards, this is inadequate. The International Energy Agency's recommendation for member countries is **90 days** of imports as strategic reserves. Japan holds approximately 145 days of reserves (combining government and commercial stocks). South Korea holds approximately 115 days. The United States holds approximately 30 days of strategic reserves plus commercial inventory equivalent to approximately 25 additional days.

India is at one-fourth or less of the IEA standard. At the precise moment when geopolitical risks are intensifying — Middle East conflict, US-China decoupling, OPEC+ supply discipline — this gap deserves serious examination.

THE VULNERABILITY CALCULATION

India's energy security calculation is structural:

INDICATOR	VALUE
Daily oil consumption	~5 million barrels per day
Daily import dependence	~85% (approximately 4.25 mb/day imported)
Annual import bill	~$160 billion (FY26 estimate)
Strategic Petroleum Reserve	5.33 MMT (~10 days; Phase 1 operational)
Phase 2 (under construction)	+6.5 MMT = ~22 days total when complete
Iran-Hormuz disruption risk	~20% of global crude flows through Strait of Hormuz
Russia oil source	India is largest buyer of seaborne Russian crude
Saudi Arabia source	~20% of India's crude imports
Iraq source	~25% of India's crude imports (largest single source)

A serious supply disruption — Strait of Hormuz closure, OPEC+ production cut coordinated with conflict, simultaneous multi-source disruption — could exhaust India's SPR within 3-4 weeks under current capacity. The economic consequences of such a disruption (rupee crash, fiscal stress, fuel rationing, manufacturing slowdown) would be severe.

WHY INDIA IS BEHIND

Several structural factors explain India's SPR deficit:

1. Late start. ISPRL was incorporated only in 2004; the first SPR (Vishakhapatnam) became operational in 2015. India started building strategic reserves a generation after most major economies.

2. Capital-intensive infrastructure. Underground rock cavern construction is expensive — approximately ₹3,000-4,000 crore per million tonnes of capacity. Phase 2 (6.5 MMT) requires approximately ₹20,000-25,000 crore in capital investment.

3. Operating cost concerns. Beyond construction, SPRs require continuous filling decisions: when to procure (low-price windows) vs hold (rising prices). Suboptimal procurement timing has historically inflated India's reserve costs.

4. Competing fiscal priorities. SPR expansion competes with infrastructure (highways, railways), social welfare (PM-KISAN, food subsidies), and direct climate investment (renewables, EV transition). Each Finance Ministry prioritises political-economy considerations differently.

THE GEOPOLITICAL RISK MATRIX IN 2026

Several active geopolitical risks make the SPR gap more urgent than it has been in two decades:

Middle East risk. US-Iran tensions, Houthi attacks on Red Sea shipping, Israeli operations, and Saudi-Iran rivalry create multiple potential supply disruption pathways. Brent crude has been trading near $106/barrel — partly reflecting these risks.

OPEC+ discipline. OPEC and Russia have coordinated on production cuts since 2017. Their leverage over global supply is significant. India is among the principal price-takers in this dynamic.

US-China decoupling spillovers. As the US restricts Chinese access to certain energy and technology markets, alternative supply chains are reorganising. India's position in this reorganisation affects its energy security calculations.

Climate policy shifts. As major economies decarbonise, the structure of global oil markets is changing. Producers have an incentive to maximise revenue before demand peaks. This may produce more volatile prices in the late-2020s.

WHAT A REAL SPR STRATEGY WOULD LOOK LIKE

To approach IEA standards, India would need:

Phase 3 SPR — additional 100+ MMT. This is approximately 18 times the Phase 1 capacity. At current cost structures, this would require investment of ₹3-4 lakh crore over 10-15 years.

Commercial reserve incentivisation. Major oil importers maintain reserves through both government and private channels. India could incentivise commercial inventories through tax provisions or strategic financing — adding 30-60 days of effective reserves without direct fiscal expenditure.

International reserve sharing arrangements. India is an "Association" member of the IEA (since 2017). Full membership could enable reserve-sharing arrangements with member countries during emergencies.

Strategic supplier diversification. India has diversified beyond Middle East dependence (now ~40-45% from Middle East, down from 60%+ in 2015). Continued diversification — Russia (current 30%+), US, Africa, Latin America — reduces vulnerability to any single regional disruption.

Domestic production focus. India's domestic crude production has stagnated around 30 MMT per year for over a decade. Investment in domestic exploration (especially deepwater) could reduce import dependence at the margin.

THE TRADEOFF QUESTION

Critics of large SPR expansion argue:

- India's transition to renewable energy and EVs will reduce oil dependence over the next 15-20 years
- A massive SPR investment now becomes a stranded asset if oil consumption peaks before 2040
- Resources are better spent on accelerating the energy transition itself

This is a reasonable argument. India's National Energy Policy targets significant electrification of mobility and industry by 2040. If achieved, oil import dependence could fall from 85% to 50% or lower.

But the risk-management calculation favours both strategies in parallel: SPR expansion to manage short-term supply shocks AND accelerated transition to manage long-term dependence. The two are complementary, not competitive.

WHAT SHOULD COME NEXT

1. **Formal Phase 3 announcement** — concrete plans, sites, and capital commitment in the 2026-27 budget cycle
2. **IEA full membership pursuit** — building on Association status to access reserve-sharing arrangements
3. **Commercial reserve framework** — tax and financing incentives for major refiners to hold larger inventories
4. **Strategic supplier compact** — multi-decade supply agreements with key producers (Saudi Arabia, UAE, Russia, US)
5. **SPR governance reform** — independent ISPRL board with broader expertise; transparency on procurement timing decisions

UPSC RELEVANCE

PAPER	ANGLE
GS3 — Economy	Energy security; oil import dependence; CAD; rupee dynamics
GS2 — IR	India-IEA relationship; OPEC+; Middle East energy diplomacy
GS3 — Internal Security	Strategic reserves; war preparedness; supply disruption planning

Mains Keywords: Strategic Petroleum Reserves, ISPRL, Vishakhapatnam Mangalore Padur, IEA 90-day standard, Chandikhol Phase 2, Brent crude, oil import dependence, Strait of Hormuz, OPEC+, Middle East risk

Prelims Facts Corner

ITEM	FACT
ISPRL incorporated	2004
Phase 1 SPRs	Vishakhapatnam, Mangalore, Padur (5.33 MMT)
Phase 2 (under construction)	Chandikhol (Odisha), Padur expansion
Total post-Phase 2	~11.83 MMT (~22 days)
IEA reserve standard	90 days
India's IEA status	Association country since 2017
Daily consumption	~5 mb/day
Import dependence	~85%
Largest crude source (FY26)	Iraq (~25%)
Russia share	~30%+ (largest seaborne buyer)
2022 SPR release	5 mb (first ever; coordinated US-Japan-UK)

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