Strategic Petroleum Reserves (SPR): A Luxury of the Rich & Mighty

Strategic Petroleum Reserves (SPR) refers to the stockpiling of crude oil in underground caverns to help a country manage sudden energy crises. These crises may arise due to natural disasters, supply disruptions, wars, soaring crude prices, or any other events that cause a sudden shortfall in energy resources—especially for nations heavily dependent on crude oil for their energy needs.

The International Energy Agency (IEA) mandates that its member countries maintain SPRs equivalent to at least 90 days' worth of oil imports. ***However, implementing this mandate is challenging due to two primary reasons.***

1. Infrastructure Development

Building the infrastructure to store such vast quantities of oil is a complex and expensive process. The most efficient storage method involves underground salt caverns, which are impermeable and prevent oil leakage. This method is also more cost-effective than using hard rock caverns, which are difficult to drill. The process involves flushing natural underground salt domes with fresh water, dissolving the salt to create caverns. The resulting brine (saltwater) is then extracted and stored elsewhere. ***Creating these caverns is not only time-consuming but also costly. Precise timelines and costs vary by country and are often not readily available through public sources***.

However, India's SPR development in two phases gives an idea of the time and cost involved.

Phase I (completed): Three SPR sites with a total capacity of 5.33 million metric tonnes (MMT) (approximately 39.1 million barrels) took 10 years and cost $600 million.

Phase II (ongoing): Expected to take 7 years, with a projected cost of $1.6 billion, increasing capacity to approximately 87 million barrels.

2. Regular Replenishment of Reserves

Maintaining SPRs requires regular replenishment, which is complicated by the volatility of global crude oil prices. Most countries prefer to purchase oil in bulk when prices are low, which can delay stockpiling efforts. Brent Crude prices, for example, fluctuate frequently, making it difficult for nations to time their purchases optimally.

Economic and Political Considerations

While SPRs are crucial for energy security, maintaining them requires significant financial strength. Only economically stable nations can afford to invest in and sustain such reserves. ***Additionally, political stability is essential to safeguard these massive oil stocks from security threats or geopolitical conflicts***.

Countries like Pakistan and Bangladesh lack the financial and political stability needed to establish SPRs. Their political instability makes it unlikely that they will develop such facilities in the near future. The situation is even worse for many African nations, which face constant turmoil, and several Pacific island nations that lack both resources and infrastructure.

However, some smaller economies, such as Sri Lanka and Nepal, have received assistance from India to develop oil reserves. These reserves primarily consist of metal storage tanks for refined petrol and diesel, offering some protection against energy shortages. However, they do not qualify as true strategic petroleum reserves, as both countries remain heavily dependent on India for refined oil. ***Consequently, their energy security remains fragile, with geopolitical and economic costs tied to external aid***.

Conclusion

Strategic Petroleum Reserves play a vital role in securing a nation's energy supply during crises. However, their implementation faces significant challenges, including high infrastructure costs, fluctuating oil prices, and the need for political stability. Currently the US holds the biggest SPR stocking facilities with total of 714 million barrels followed by China 475 million barrels and Japan with 324 million barrels.

While wealthier and politically stable nations can successfully maintain SPRs, smaller or less stable economies struggle to establish and sustain such reserves. In many cases, these nations rely on larger, more powerful countries for energy security—often at a significant geopolitical and economic cost.