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Now that the government has opened the nuclear power sector to private participation, the key question is this: how can private investment be pulled in quickly?

The answer is simple — almost obvious: sell existing, operating nuclear power plants.

Government-owned Nuclear Power Corporation of India Ltd (NPCIL) currently operates 24 nuclear power reactors with a total capacity of 8,780 MW; another eight reactors, totalling 6,600 MW, are under construction. Of the operating reactors, 14 are under IAEA safeguards. The remaining 10 are pressurised heavy water reactors (PHWRs) built using indigenous technology.

There is merit in putting the 14 safeguarded reactors and the eight under-construction units under the hammer. The unsafeguarded reactors are arguably of strategic and defence relevance and should therefore remain with NPCIL.

THE BENEFITS

Selling India's nuclear power plants offers two immediate benefits: it strengthens the government's asset monetisation programme and brings the private sector into the nuclear business without delay.

In her Union Budget 2025 speech, Finance Minister Nirmala Sitharaman announced a second National Asset Monetisation Plan, to be implemented between 2025 and 2030, with an ambitious target of raising ₹10 lakh crore.

The SHANTI Act, 2025, has handed the Finance Minister a fresh catalogue of jewels to monetise. Since building a new nuclear power plant is necessarily time-consuming, the private sector is likely to step in, wallet in hand, to buy operational assets. Steel and cement companies are under increasing pressure to 'green' their products; basic economics suggests they may not hesitate to pay a premium for clean, reliable baseload power.

Today, it costs ₹15 crore to set up a 700-MW nuclear power plant, ₹35 crore for a 1,000 MW, according to the rating agency, ICRA, which recently rated

Time to sell India's nuclear power plants

ATOMIC MOVE. This will aid the government's asset monetisation programme and open up the N-power sector to private players



NPCIL. Similarly, SMRs will likely cost at least ₹30 crore.

India's safeguarded nuclear capacity is a little over 3 GW. Most of these plants — except Kudankulam Units 1 and 2 — are vintage assets. Their valuation would involve intense technical scrutiny, but their fully operational status should command a premium, offsetting concerns about age.

The 6,600 MW of capacity under

The 14 safeguarded reactors and the eight under-construction units can be sold, while the unsafeguarded reactors, which are of strategic and defence relevance should remain under NPCIL control

construction, on the other hand, represents an asset offered almost on a silver platter.

At least two plants (Kudankulam 3 and RAPP 8) are very likely to be completed in 2026; two more 700 MW projects in Haryana should be completed in the next couple of years.

These plants — both operational and under construction — could be individually corporatised, just as the Ordnance Factory Board was split into seven separate companies, and sold independently.

A rough — and admittedly speculative — estimate suggests that the government could raise at least ₹2 lakh crore through the sale of existing and under-construction nuclear assets.

EFFICIENCY IMPROVEMENT

NPCIL has operated its nuclear fleet reasonably efficiently. The average plant load factor (PLF) over the past three years has been above 85 per cent. It

would therefore be unfair to suggest that a private company, with limited nuclear experience, would automatically do better.

However, there is an important nuance. NPCIL operates under a cost-plus regime, with a single-part tariff that ensures full recovery of fixed costs. Rating agency CRISIL has described this arrangement as "healthy" — which it is, from NPCIL's standpoint. The structure also results in relatively high tariffs. For instance, Rajasthan Atomic Power Project Unit 7 (700 MW) earns a tariff of ₹4.83 per kWh, excluding water charges, insurance and taxes.

It is true that tariffs for NPCIL-owned plants are determined by the Central Electricity Regulatory Commission (CERC), as is the case with NTPC's coal-fired stations. However, CERC sets nuclear tariffs based on normative costs supplied by the Department of Atomic Energy, NPCIL's parent body. With private operators in the picture, such cosy arrangements would not survive.

Broadly, privately operated nuclear plants can be expected to be run more tightly, with sharper cost control and better project execution. NPCIL's track record in managing upgrades and refurbishments is mixed. Madras Atomic Power Station Unit 1 has been under prolonged shutdown since April 2018, while Tarapur Units 1 and 2 have remained offline since 2020.

NPCIL'S ROLE

NPCIL's financial performance proves that the sector is profitable. In 2024-25, the company achieved a turnover of ₹20,350 crore and made a net profit of ₹4,737 crore — a net profit margin of 23.2 per cent (31.71 per cent in the previous year.)

The biggest risk it faces is the counterparty risk, as it sells electricity to distribution utilities that are financially weak. But as a captive plant in the hands of a private company, even that risk would disappear.

Selling nuclear plants does not mean burying NPCIL. The ₹20,350-crore behemoth will continue to play a critical role. First, the SHANTI Act reserves heavy water production and uranium enrichment exclusively for the government — areas where NPCIL has deep expertise.

Second, it will continue to operate unsafeguarded reactors, keeping India's strategic and defence interests in view. Third, NPCIL would be the natural consultant of choice for new private operators entering the sector.