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Budget 2026: India to power its clean tech and nuclear ambitions to build an innovation state

Clean energy and renewable technologies remain the sharpest tests of whether India can scale innovation to match its climate and industrial goals.

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Article Content:

India's research and innovation landscape is undergoing one of its most significant shifts since independence, and the last few budgets have made it clear that science and technology are no longer side notes to growth, but the growth model itself. For years, India's gross expenditure on R&D hovered around 0.6-0.7% of GDP, far below innovation leaders like South Korea or the United States, yet in absolute terms the national research budget has quietly but steadily expanded.

The last few years have shown that mission-driven research funding can shape entire industries more so clean tech, critical minerals and nuclear innovation, and India's introduction of large-scale innovation funds, such as the ₹1 lakh crore Research, Development and Innovation (RDI) scheme, signals an ambition to shift from incremental improvements to transformative technological leadership. Yet, the Union Budget 2026-27, will be expected to deepen this shift. It is needed to strengthen mid- and late-stage R&D finance, accelerate technology translation from labs to markets, and create predictable long-term regulatory environments for sectors like energy storage, advanced materials, clean mobility and nuclear reactors. In short, the Budget will need to turn India's early momentum into a sustained innovation engine.

Clean energy and renewable technologies remain the sharpest tests of whether India can scale innovation to match its climate and industrial goals. While schemes such as viability-gap funding for offshore wind and grid-scale battery storage have gained traction, industry now expects the government to pivot toward the next frontier: making India a global innovation and manufacturing base for batteries, power electronics, hydrogen technologies, and grid-integrated digital systems. The upcoming budget is likely to face demands for a comprehensive research-linked manufacturing plan, one that ties incentives to domestic IP creation, testing infrastructure, and product development. India's clean tech exports have crossed ₹54,000 crore and foreign investment continues to rise, but moving from an assembly economy to a design-led economy will require stronger R&D clusters, integrated testing labs, public-private innovation platforms, and deep technology partnerships with countries that dominate clean energy IP.

Critical minerals present an equally urgent challenge. While the National Critical Minerals Mission has created a strong starting framework, industry now looks at Government to create stable, long-term financial instruments that can support domestic exploration, processing and recycling technologies. India simply cannot power its energy transition without secure access to lithium, cobalt, nickel, copper, graphite and rare earths, and therefore there is need to expand the R&D envelope for mineral refining, substitutes for critical minerals, and next-generation recycling technologies for batteries and electronics. The mission's targets 1,200 exploration projects and 1,000 patents by 2030, are ambitious, but research institutes and industries, both, say that without larger dedicated research grants, access to concessional finance, and faster permitting regimes, India risks remaining dependent on imports during the most consequential decade of the global energy transition.

No sector, however, is being watched more closely than nuclear energy, particularly India's emerging Small Modular Reactor (SMR) programme. The ₹20,000 crore Nuclear Energy Mission has set the stage, but expectations from the next budget go far beyond initial R&D allocations. With data centres, AI infrastructure, heavy industries and clean hydrogen all in need of round-the-clock clean power, SMRs are increasingly viewed as a strategic industrial asset rather than just an energy technology. Industry now expects the policymakers to create a dedicated SMR ecosystem roadmap covering manufacturing clusters, component supply chains, safety-testing infrastructure, fuel-cycle innovation, and new financing models. A progressive Union budget would also provide funding for advanced reactor materials research, next-generation cooling technologies, and workforce skilling for nuclear engineering, areas where India needs

rapid capacity expansion.

Across all these sectors, the fundamental gap remains the same: India's R&D intensity is still too low for a country aiming to be a top-three global economy. To transform its innovation landscape, there is an urgent need to introduce incentives that reward private R&D spending, especially in deep tech and climate tech. This could include enhanced tax credits, innovation-linked production incentives, sovereign-backed capital funds, and targeted support for technology testing and certification facilities. Researchers and industry bodies have repeatedly highlighted that early-stage grants are not enough; India needs a strong bridge between lab-scale innovation and commercial deployment, particularly for hardware-intensive technologies like SMRs, batteries, electrolysers and power electronics. Without such mechanisms, Indian companies risk remaining technology takers rather than technology makers in a rapidly shifting global market.

Therefore, what is needed is conversion of India's newfound enthusiasm for research into institutional capacity, market confidence and long-term predictability. Whether through a multi-year innovation finance facility, a national programme for advanced materials, expanded SMR development corridors, or stronger global R&D partnerships, the Union Budget 2025-26, will need to signal that India is ready to lead, not follow, on clean technology innovation. If it succeeds, India can position itself not only as a major clean energy market but as a global innovator capable of exporting the technologies, materials and reactors that will shape the next generation of the low-carbon economy. If it falters, India risks missing a narrow window of opportunity in which nations are rapidly locking in supply chains, research partnerships and technological dominance. The intent is clear; the upcoming budget must now deliver the architecture that turns India's innovation promise into lasting national advantage.