

India's Nuclear Energy Push: Small Modular Reactors and Private Sector Collaboration

LONDON, UNITED KINGDOM, July 30, 2024 /EINPresswire.com/ -- In a landmark move towards diversifying India's energy portfolio, Finance Minister Nirmala Sitharaman unveiled ambitious plans for nuclear energy development in the Union Budget 2024-25. The government has announced its intention to partner with the private sector to research, develop, and deploy Small Modular Reactors (SMRs), marking a significant shift in India's nuclear energy strategy.

SMRs represent a departure from traditional large-scale nuclear plants, offering more flexible and potentially cost-effective nuclear power solutions.

These reactors, with a capacity of up to 300 megawatts per unit, can be factory-built and deployed in locations unsuitable for larger plants. This innovation aligns with India's goal of increasing its nuclear power capacity from the current 7.48 gigawatts (GW) to 22.28 GW by 2031.

The finance minister emphasized that nuclear energy is expected to form a significant part of the energy mix for "Viksit Bharat" (Developed India). To support this initiative, the government will allocate funds from the ₹1 trillion R&D budget announced in the Interim Budget 2024-25. This strategic shift comes as India seeks to balance its growing energy needs with environmental responsibilities. The country has pledged to achieve net-zero carbon emissions by 2070, and nuclear power, considered a cleaner alternative to fossil fuels, plays a crucial role in this commitment.

In addition to SMRs, the budget also highlighted advancements in thermal power technology. The development of advanced ultra-supercritical thermal power plants has been completed, resulting from a joint venture between NTPC (National Thermal Power Corporation) and BHEL



Union Finance Minister Nirmala Sitharaman presents the Union Budget 2024-25 in the Lok Sabha, in New Delhi on July 23, 2024. | Photo Credit: PTI

(Bharat Heavy Electricals Limited). The government plans to provide fiscal support for setting up an 800 MW commercial plant based on this technology, promising improved efficiency in thermal power generation.

The budget also outlined plans to transition from energy efficiency targets to emission targets, signaling a more direct approach to controlling greenhouse gas emissions across industries. Furthermore, the government intends to facilitate the transition of industries to the Indian carbon market model, creating a domestic carbon trading system to incentivize businesses to reduce their carbon footprint.

To enable private sector participation in nuclear energy, the government is examining provisions of the Atomic Energy Act, 1962. This move could potentially open up new avenues for collaboration and investment in the nuclear sector.

NTPC, India's state-run power generation company, has already taken steps towards nuclear energy expansion. It has formed a joint venture with Nuclear Power Corp. of India Ltd (NCPIL) and plans to invest ₹1.5 trillion over the next decade to set up 10 GW of nuclear power capacity.

These initiatives reflect India's commitment to a diverse and sustainable energy future. By embracing nuclear energy, enhancing thermal power efficiency, and establishing a carbon market, India is positioning itself at the forefront of clean energy innovation while addressing its energy security concerns. The focus on research and development in the nuclear sector, coupled with private sector involvement, is expected to accelerate India's progress towards a more sustainable energy landscape.

Rosemarie Panagakou
Greenewclear
info@greenewclear.com

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