

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO - 1287**  
ANSWERED ON 30/07/2026

**ENHANCING NUCLEAR ENERGY**

1287. DR. SANTRUPT MISRA

Will the PRIME MINISTER be pleased to state:-

- (a) the targets set for enhancing the share of nuclear energy in the country's energy mix during the next two decades;
- (b) the details of vision regarding Small Modular Reactors, including any international partnerships for technology transfer; and
- (c) the timeframe and estimated cost for deploying the first indigenous Small Modular Reactors?

**ANSWER**

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS  
AND PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH)

- (a) The Government has drawn up a roadmap for reaching the 100 GW nuclear power capacity in the next two decades i.e. by 2047, as announced in the Nuclear Energy Mission in the Union Budget 2025-26, thereby increasing the share of reliable, low-carbon base-load nuclear energy in the country's energy mix and supporting the vision of Viksit Bharat and the goal of Net Zero carbon emissions by 2070.

The roadmap follows a two-pronged strategy comprising deployment of indigenous 700 MWe Pressurised Heavy Water Reactors (PHWRs) and large imported advanced reactors at greenfield sites, along with the development and deployment of Small Modular Reactors (SMRs) for brownfield applications such as repurposing retiring fossil fuel power plants, captive power for energy-intensive industries and off-grid applications.

As per the roadmap, the present nuclear power capacity of 8.78 GW is expected to reach about 22 GW by 2031-32 on progressive completion of projects presently at various stages of implementation. Another 32 GW of nuclear power capacity is envisaged to be set up beyond 2032 by Nuclear Power Corporation of India Limited (NPCIL) that is a Public Sector Enterprise under the administrative control of the Department of Atomic Energy (DAE). This will comprise indigenous Pressurised Heavy Water Reactors

(PHWRs) and Light Water Reactors (LWRs) planned to be setup by 2047, taking the NPCIL's nuclear power capacity to about 54 GW.

The balance of 46 GW comprising reactors of different technologies, is expected to be set up by other Public Sector Enterprises (Central & State), Private sector and Joint Ventures in different business models.

- (b) As announced in the Union Budget 2025-26 the Government envisions development and deployment of indigenously designed Small Modular Reactors (SMRs) under the Nuclear Energy Mission, with a target to operationalise at least five indigenous SMRs by 2033. Bhabha Atomic Research Centre (BARC), a constituent unit of Department of Atomic Energy (DAE) has undertaken design and development of pressurised water reactor (PWR) technology based on Small Modular Reactors (SMRs) namely,

- (i) 220 MWe Bharat Small Modular Reactor (BSMR-200),
- (ii) 55 MWe Small Modular Reactor (SMR-55), and
- (iii) a High Temperature Gas Cooled Reactor (HTGCR) having capacity up to 5 MW<sub>th</sub>, which can be coupled with suitable thermochemical cycle for hydrogen production.

In view of the availability of requisite in-house expertise for advanced nuclear technology development, international collaborations for SMR technology is not envisaged. However, India, as a Member State of the IAEA, regularly participates in technical events organised by the Agency for knowledge sharing.

- (c) The estimated time for construction of these SMRs is 60 to 72 months from receipt of financial approval.

The estimated cost of projects as mentioned below in the table:

| Reactors                                                                             | Project Cost (Rupees in Crores) |
|--------------------------------------------------------------------------------------|---------------------------------|
| 220 MWe Bharat Small Modular Reactor (BSMR-200)                                      | 5960                            |
| Twin Unit of 55 MWe Small Modular Reactor (SMR-55)                                   | 7000                            |
| High Temperature Gas Cooled Reactor (HTGCR) having capacity up to 5 MW <sub>th</sub> | 320                             |

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