

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYASABHA
UNSTARRED QUESTION NO – 2250
ANSWERED ON 20/03/2025

DEVELOPMENT AND DEPLOYMENT OF SMRs

2250. SHRI KARTIKEYA SHARMA

Will the PRIME MINISTER be pleased to state:-

- (a) whether the Government is considering the development and deployment of Small Modular Reactors (SMRs) as part of the Country's nuclear energy strategy, if so, the details thereof;
- (b) the current status of research and development efforts in the country towards SMR technology, including collaborations with domestic and international stakeholders; and
- (c) the details of the timeline for the potential commissioning of the first SMR in the country?

ANSWER

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

(a) to (c) Yes, Small Modular Reactors (SMRs) are being designed, developed and considered for deployment in brown field sites as a part of Nuclear Energy Mission to enhance India's nuclear energy capacity and with an objective to replace retiring thermal power plants to decarbonise the energy sector. It is planned to make prototype demonstration reactors for establishing technology for design, construction and operation of reactors before commercial deployment. Three demonstration reactors are planned for development and deployment. The details of these reactors & plan for deployment are described below:

- i) Bharat Small Modular Reactor (BSMR), is Completely indigenous 200MWe Pressurised Water Reactor (PWR). DAE has requisite scientific & technological know-how for its design and development. Majority of equipment are within manufacturing capability of Indian industries. It can be deployed as captive plant for bigger industries, and exclusion zone required

will be significantly lower. Proposal for construction of lead unit of BSMR 200 MWe at DAE site is to be placed for in-principle approval.

- ii) Small Modular Reactor (SMR) is 55 MWe Pressurised Water Reactor, the design is block type and it is highly modular design. Exclusion zone for this reactor is not beyond plant boundary. Two lead units are planned to be installed at DAE site. Currently, the conceptual design of this reactor is in advanced stage. Necessary technology for deployment of these reactors is available in the country and majority of equipment are within manufacturing capability of Indian Industries.

Advanced reactor designs described above are being pursued by BARC along with other DAE units in line with objective of Atmanirbhar Bharat mission. These demonstration reactors are likely to be constructed in 60 to 72 months after receipt of project sanctions.

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