

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO –1761**  
ANSWERED ON 30/07/2025

**RESEARCH & DEVELOPMENT FOR SMALL MODULAR REACTORS**

1761. SHRI DHAVAL LAXMANBHAI PATEL

Will the PRIME MINISTER be pleased to state:-

- (a) the current status of institutional Research and Development for Small Modular Reactors(SMRs) technologies targeting commercialisation by 2030 along with the progress of international collaborations (e.g. IAEA, US, UK); and
- (b) the expected deployment plan and regulatory approvals by 2035?

**ANSWER**

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

- (a) Small Modular Reactors (SMRs) are being designed and developed by Bhabha Atomic Research Centre (BARC), a constituent unit of Department of Atomic Energy (DAE). SMRs are considered for deployment in brown field sites as a part of Nuclear Energy Mission to enhance India's nuclear energy capacity. These reactors are Bharat Small Reactor (220 MWe PHWR), Bharat Small Modular Reactor (BSMR-200 MWe PWR) and Small Modular Reactor (SMR-55 MWe PWR) which are being indigenously designed & developed with an objective of repurposing of retiring fossil fuel-based power plants, captive plants for energy intensive industries and off-grid applications for remote locations.

Conceptual and detailed designs for these reactors are at advanced stage. Prototype demonstration reactors establish technology readiness for design, construction, and operation.

In view of the available in-house expertise and know-how of technologies being developed, no collaboration has been envisaged. However, BARC participates in

national & international meetings on nuclear reactor technologies for knowledge sharing, and as a member of the International Atomic Energy Agency (IAEA), India regularly participates in IAEA technical events for capacity building.

- (b) It is planned to establish lead units of SMR-55 and BSMR 200 MWe at DAE sites for technology demonstration. These demonstration reactors are likely to be constructed in 60 to 72 months after receipt of project sanctions.

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