

Indian minister eyes 9% nuclear share by 2047

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Installed nuclear capacity is set to more than triple by 2031, and nuclear power plants are likely to generate about 9% of the country's electricity by 2047, according to Minister of State Jitendra Singh. India's nuclear power plants generated more than 3% of its electricity last year - despite representing only 1.6% of the country's installed capacity.



A pressuriser for Kudankulam 5, one of four VVER reactors currently under construction in Tamil Nadu, begins its journey of 17,000 km to the site on 4 April. The pressuriser, made by AEM-Technologies Izhora (part of Rosatom's machine-building division, Atomenergomash), weighs more than 187 tonnes and is about 14 metres in length (Image: AEM)

The 47,112 TWh of electricity generated by India's nuclear reactors in 2021-22 was "about 3.15% of the total electricity generated in the country", Singh told the Lok Sabha - the lower house of the Indian parliament - on 5 April. In written answers to questions, he confirmed that installed nuclear capacity is set to increase from 6780 MWe today to 22,480 MWe by 2031 "on progressive completion of projects under construction and accorded sanction", he said, and the government has given 'in principle' approval for new sites for future reactors.

Singh said projects to build a total of ten reactors have been accorded administrative approval and financial sanction. These are: Kaiga units 5 and 6 in Karnataka; Gorakhpur units 3 and 4 in Haryana; Chutka units 1 and 2 in Madhya Pradesh; and Mahi Banswara units 1 and 2 and units 3 and 4 in Rajasthan. All are 700 MWe pressurised heavy water reactors (PHWRs). "These reactors are planned to be set up in 'fleet mode' progressively by the year 2031 at a cost of Rs 1,05,000 crore," he said. (Rs 1,05,000 crore is INR105 billion (USD1.3 billion)).

He also listed reactors classed by the government as "under construction": a total of four 700 MWe PHWRs (Kakrapar units 3 and 4 in Gujarat and Rawatbhata units 7 and 8 in Rajasthan); four Russian-supplied 1000 MWe VVER pressurised water reactors at Kudankulam in Tamil Nadu; and the 500 MWe Kalpakkam prototype fast breeder reactor, which is also in Tamil Nadu. Singh also included Gorakhpur units 1 and 2 - both 700 MWe PHWRs - as "under construction", although there has not yet been any announcement that concrete pouring for the base mat of the reactor building - used by the International Atomic Energy Agency as the benchmark for the start of construction - has taken place.

According to the Press Trust of India, Singh said on 9 April that nuclear is "likely" to account for nearly 9% of India's electricity by 2047, thanks to the approval by Prime Minister Narendra Modi of the construction of reactors in fleet mode. He also credited Modi with a decision to allow nuclear installations to be developed under joint ventures with public sector undertakings (PSUs). India's Atomic Energy Act was amended in 2015 to enable the Nuclear Power Corporation of India Ltd to form joint venture companies with other Indian PSUs to help the state-owned company to secure funding for new projects.

Singh has previously called for India's private sector companies and start-ups to take part in the development of small modular reactor technology.

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The minister's latest remarks were made following a review meeting with senior scientists from the Department of Atomic Energy's Bhabha Atomic Research Centre.

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