GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO-2081
ANSWERED ON 18/12/2025

LEVERAGING INDIA'S THORIUM RESERVES

2081. SHRI KAMAL HAASAN

Will the PRIME MINISTER be pleased to state:-

(a) the comprehensive strategy and timeline for scaling up nuclear capacity from 8.88 GW to 100 GW by 2047 under the Nuclear Energy Mission for Viksit Bharat;
(b) the timeline for construction of thorium-based Advanced Heavy Water Reactors to harness India's thorium reserves, and in the absence thereof, the strategy adopted for scaling up nuclear capacity;
(c) the anticipated timeline for commencing construction of two additional Fast Breeder Reactors at kalpakkam; and
(d) the details of engagement with local communities and environmental and social impact assessments undertaken or proposed therefor?

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 comprehensive road map to reach a capacity of about 100 GW by 2047. The present nuclear power capacity is planned to be increased to about 22 GW by 2031-32 on progressive completion of projects under implementation. Further, NPCIL has drawn up plans to contribute about 54 GW out of the 100 GW capacity envisioned by 2047.

(b) India has limited uranium and abundant thorium reserves. Thorium unlike uranium, is a fertile material and need to be converted to fissile uranium-233 in a nuclear reactor, before it can be used to generate energy by nuclear fission. Realising this, the Three-Stage Nuclear Power Programme envisaged by the Department remains a key component of the India's nuclear power programme aiming towards optimum utilisation of limited uranium resources and exploitation of abundant thorium reserves for long term energy security in sustainable manner.

The Three-Stage Nuclear Power Programme aims to multiply the domestically available fissile resource through the use of natural uranium in Pressurised Heavy Water Reactors (PHWRs), followed by use of plutonium, obtained from the spent fuel

of PHWRs, in Fast Breeder Reactors (FBRs). Large scale utilisation of thorium will subsequently follow, making use of fissile uranium-233 bred from thorium in a breeder reactor fuelled using plutonium, only after adequate installed capacity of FBRs has been achieved.

(c & d) BHAVINI is currently commissioning a 500 MWe Prototype Fast Breeder Reactor (PFBR) project at Kalpakkam, Tamil Nadu. Government has accorded approval to carry out pre-project activities for 2 x 500 MWe twin unit of FBR 1&2 project at Kalpakkam, Tamil Nadu.

Environmental and social impact assessment study as per the applicable norms will be carried out for these projects. BHAVINI is taking adequate measures to gain the confidence of the local population through planned CSR and outreach activities. In the outreach activities, advantages of nuclear power and the safety features of PFBR are explained to the local public and to the students from schools & colleges from the neighborhood.

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