

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 805
TO BE ANSWERED ON 09.02.2023

Thorium-rich Monazite sand reserves in Tamil Nadu

805 Shri M. Mohamed Abdulla :

Will the PRIME MINISTER be pleased to state:

- (a) the status of Advanced Heavy Water Reactor (AHWR) and the expected date of its opening and achieving criticality;
- (b) the total quantity of Thorium-rich Monazite sand reserves found in the state of Tamil Nadu;
- (c) whether Central Government proposes any roadmap for restrictions on the export of such monazite abundant sand; and
- (d) if so, the details thereof, and if not, the reasons therefor?

ANSWER

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

- (a) Advanced Heavy Water Reactor (AHWR) designed by Bhabha Atomic Research Centre (BARC) is intended to serve as a technology demonstrator for Thorium utilisation. Several advanced safety features have been incorporated in the design of this reactor. Most of these advanced features are First Of A Kind (FOAK). The design of all nuclear systems of the reactor has been completed. Several innovative features of the design are being validated through large scale engineering experiments. AHWR will generate nearly 60% of its power from Thorium. A Critical Facility has been constructed in BARC, and is being used for carrying out experiments to further validate the physics design features of AHWR. In order to facilitate an early scrutiny of the innovative features of the design from the safety considerations, a Pre-Licensing Design Safety appraisal of the reactor has been completed by the Atomic Energy Regulatory Board. Presently, engineering detailing of AHWR systems is underway. Construction of this reactor will begin after completion of engineering detailing, obtaining clearance from statutory and regulatory agencies and financial sanction for the project.

- (b) As on December, 2022, Atomic Minerals Directorate for Exploration and Research (AMD) has established 2.47 million tonne (Mt) of *in-situ* monazite (a phosphate mineral of thorium, rare earth elements and uranium) resource in the coastal beach placer sands and inland alluvium in the State of Tamil Nadu.
- (c) Yes, Sir.
- (d) Vide Directorate General of Foreign Trade (DGFT) notification dated 21.08.2018, the export of Beach Sand Minerals (BSM) i.e. ilmenite, rutile, leucoxene, zircon, sillimanite and garnet has been brought under State Trading Enterprises (STE) and shall be canalized through M/s IREL (India) Limited (a PSU under DAE). In order to implement the provisions of DGFT notification, IREL has issued Standard Operating Procedure (SOP) and as per the SOP, the BSM producer / seller desirous of exporting the BSM shall furnish Monazite Test Certificate (MTC) issued by AMD for such consignments as one of the pre-requisites.

Further, as per order / notification issued by DAE from time to time (latest order No.3/10(17)/2018-PSU/Part File-I/6016 dated 05.05.2022), export of ilmenite, rutile, leucoxene, zircon, sillimanite and garnet is permitted with monazite content upto the permissible limit of 0.25%.
