GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYASABHA
STARRED QUESTION NO.*197
TO BE ANSWERED ON 04.08.2022

Thorium reserves in the country

*197 **Dr. V. Sivadasan :**

Will the ***PRIME MINISTER*** be pleased to state:

(a) the estimated reserves of Thorium in the country; and

(b) progress achieved by the country in utilizing Thorium in nuclear reactors for producing energy?

ANSWER

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

(a)to(b) A statement is placed on the Table of the House.

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Government of India
Department of Atomic Energy

STATEMENT REFERRED TO IN REPLY TO RAJYA SABHA STARRED QUESTION NO. *197 DUE FOR ANSWER ON 04.08.2022 BY DR. V. SIVADASAN REGARDING THORIUM RESERVES IN THE COUNTRY.

(a) Atomic Minerals Directorate for Exploration and Research (AMD) carries out the exploration of Atomic Minerals in the country.13.07 Million Tonne (mt) of monazite [a mineral containing thorium (Th) and rare earth elements] in the coastal beach placer sands has been established in the country. It contains approximately 1.04 mt thorium metal (Th) or approximately 1.17 mt thorium oxide (ThO_2).

(b) Progress achieved by the country in utilizing Thorium in nuclear reactors for producing energy is as under:

- Thorium Oxide (Thoria) pellets contained in bundles have been used in the initial cores of operating Pressurised Heavy Water Reactors (PHWRs) and operating experience has been generated. Thoria based fuels have also been irradiated in the research reactors of Bhabha Atomic Research Centre (BARC) and Indira Gandhi Centre for Atomic Research (IGCAR). After such irradiation these fuel elements have been examined in the laboratories at BARC and IGCAR.

- The irradiated thoria pins of research reactors have been reprocessed to obtain Uranium 233. The recovered Uranium-233 has been fabricated as fuel for the 30 kW (thermal) KAMINI reactor, which is in operation at IGCAR at Kalpakkam. This has helped in establishing fuel reprocessing cycle for Thoria.

- A Critical Facility for Advanced Heavy Water Reactor was commissioned at BARC and is being used since then for carrying out experiments to further validate the physics design features of Advanced Heavy Water Reactor (AHWR). AHWR core is designed for using Uranium-Thorium and Plutonium-Thorium Fuels.

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