

GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
**LOK SABHA**  
**UNSTARRED QUESTION NO. 1826**  
TO BE ANSWERED ON 27.07.2022

**Thorium Production**

1826. SHRI OMPRAKASH BHUPALSINH alias PAWAN RAJENIMBALKAR:

Will the PRIME MINISTER be pleased to state:

- (a) the quantum and details of Thorium produced during the year 2021-22;
- (b) the name and details of furnaces in which Thorium has been utilised in the country during the year 2021-22;
- (c) the details of the Enriched Thorium produced;
- (d) whether Thorium has been utilised in Heavy Water Reactor and if so, the details thereof; and
- (e) whether Thorium has been exported during the year 2021-22 and if so, the details thereof including the revenue generated from the said export?

**ANSWER**

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

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- (a) 1776.32 tons of Thorium, in the form of Thorium Oxalate and Thorium Nitrate, has been produced during the year 2021-22.
- (b) If we consider furnace equivalent to a reactor in which Thorium is burnt, DAE would like to state that Thorium being a fissile element, is unsuitable for use in reactor. However, Thorium gets converted into Uranium 233 fissile isotope and a reactor KAMINI uses U<sub>233</sub> produced from Th<sub>232</sub>. In the year 2021-22, KAMINI has been operating with U-233 (obtained from Th-232) fuel.
- (c) DAE has not produced any enriched Thorium.
- (d) 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 BARC and IGCAR. After such irradiation these fuel elements have been examined in the laboratories at BARC and IGCAR.
- (e) No, Sir.

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