

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.2855
TO BE ANSWERED ON 10.07.2019

CONVERSION OF THORIUM INTO URANIUM

2855. SHRI CHANDAN SINGH:

Will the PRIME MINISTER be pleased to state:

- (a) whether any success has been achieved in converting Thorium into Uranium and to use it as fuel in Atomic Energy production in the country;
- (b) If so, the details thereof; and
- (c) the installed capacity to convert Thorium in the Country?

ANSWER

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

- (a),(b)&(c) Yes, Sir. For conversion of Thorium into Uranium (Uranium-233), Thorium has to be first irradiated in nuclear reactors and the spent Thorium based fuel has to be reprocessed to obtain Uranium-233. Fuel bundles containing pure Thorium Oxide (Thoria) pellets have been irradiated in the initial cores of our operating Pressurised Heavy Water Reactors (PHWRs). Thoria based fuels have also been irradiated in the research reactors. 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 Indira Gandhi Centre for Atomic Research (IGCAR) at Kalpakkam. KAMINI is the only reactor in the world operating with Uranium-233 fuel. A facility called Power Reactor Thoria Reprocessing Facility (PRTRF) has been setup in Bhabha Atomic Research Centre (BARC) and a few of the Thoria bundles, irradiated in PHWRs, have also been reprocessed to obtain Uranium-233.
