

**GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA**

UNSTARRED QUESTION NO:2155
ANSWERED ON:02.12.2009
THORIUM POWER PLANTS
Gaddigoudar Shri P.C.

Will the Minister of ATOMIC ENERGY be pleased to state:

- (a) whether thorium is in abundance in the country;
- (b) if so, the details thereof;
- (c) whether any reactor has been designed that can run by the thorium;
- (d) if so, the details thereof;
- (e) whether thorium can replace uranium in the reactors for generation of power; and
- (f) if so, the details thereof?

Answer

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS (SHRI PRITHVIRAJ CHAVAN)

(a) Yes, Sir.

(b) The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy, has established 10.21 million tonnes of monazite resources under all categories (indicated, inferred and speculative). Indian monazite contains about 9-10% of ThO₂ and about 8,07,713 tonnes of Thorium metal can be recovered from the above resources.

(c) Yes, Sir.

(d) The Department of Atomic Energy has designed a 300 MWe advanced Heavy Water Reactor to generate most of its power from thorium based fuel.

(e) Complete replacement of uranium by thorium in existing Indian Reactors is not feasible without a major change in design. However, thorium has been used in a few bundles of Pressurised Heavy Water Reactors earlier. Large scale use of thorium is planned in the 3rd stage of the Indian Nuclear Power Programme.

(f) The Department of Atomic Energy plans to initiate steps towards construction of an Advanced Heavy Water Reactor, a mainly thorium based reactor, during the XI Plan period. Large scale deployment of thorium for nuclear power generation is envisaged to be carried out after adequate nuclear installed capacity using Pressurised Heavy Water Reactors and Fast Breeder Reactors has been set up.