GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA

UNSTARRED QUESTION NO:5048
ANSWERED ON:13.08.2014
THORIUM BASED REACTORS
Hegde Shri Anant Kumar Dattatreya

Will the Minister of ATOMIC ENERGY be pleased to state:

(a) whether thorium based reactors have been set up by the Government in various parts of the country;

(b) if so, the details thereof, location-wise;

(c) whether India has large reserves of thorium as compared to other countries; and

(d) if so, the details thereof and the total volume of thorium reserves found in the country and total power estimated to be generated through these reserves?

Answer

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

(a)&(b) No, Sir. Thorium based reactors have not yet been set up in the country for generation of power. However, a 30 kW (thermal) research reactor KAMINI, the only operating reactor in the world using uranium-233 fuel (which is produced by irradiation of thorium) has been setup at Indira Gandhi Centre for Atomic Research, Kalpakkam (Tamil Nadu).

(c)&(d) Yes, Sir. India has abundant quantity of thorium resources contained in the mineral monazite occurring in the beach sand placer deposits along the eastern and western coasts of the country as well as the inland placers in parts of Kerala, Tamil Nadu, Odisha, Andhra Pradesh, West Bengal, Jharkhand and Chhattisgarh. The Department of Atomic Energy (DAE) through its Atomic Minerals Directorate for Exploration & Research (AMD) has carried out exploration activities over the past six decades, which have resulted in establishing in situ resources of 11.93 million tonnes of monazite as on May 2014 in the country. Indian Monazite contains about 9-10% of Thorium oxide (ThO_2) which in turn results in about 1.07 million tonnes of Thorium oxide (ThO_2).

A three stage nuclear power programme has been devised to efficiently utilise this large reserve of thorium. The energy potential of this thorium reserve is estimated to be more than 155,500 GWe-years.