GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 3368
TO BE ANSWERED ON 25.03.2021

URANIUM AND THORIUM RESERVES IN THE COUNTRY

3368 SHRI SUJEET KUMAR:

Will the PRIME MINISTER be pleased to state:

(a) whether there are large reserves of Uranium and Thorium in the country which have not been utilized;

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

(c) the action being taken by Government to extract and utilize these vast reserves?

ANSWER

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

(a)&(b) Yes Sir, The Atomic Minerals Directorate for Exploration and Research (AMD), a constituent unit of Department of Atomic Energy (DAE), has the mandate to identify, evaluate and augment mineral resources of uranium and thorium in the country. AMD has carried out exploration and prospecting for uranium deposits in a number of prospective geological domains of India. As on February, 2021, a total of 3,50,438 tonne (t) *in situ* U_3O_8 (2,97,170t U) has been established in forty four (44) uranium deposits in Andhra Pradesh, Telangana, Jharkhand, Meghalaya, Rajasthan, Karnataka, Chhattisgarh, Uttar Pradesh, Uttarakhand, Himachal Pradesh and Maharashtra. The State-wise details of the Uranium deposits is enclosed as Table–1. AMD has so far established 12.73 million tonnes of monazite (a mineral containing thorium and rare earth elements) in the coastal beach placer sands in parts of Kerala, Tamil Nadu, Odisha, Andhra Pradesh, Maharashtra and Gujarat and in the inland alluvium in parts of Jharkhand, West Bengal and Tamil Nadu. State-wise details of the Monazite resources is enclosed as Table- 2.

(c) When AMD finds the reserve of a specific Uranium deposit to be mineable with required degree of geo-scientific confidence as per the prescribed norms it reports about the deposit to DAE, UCIL and the concerned State Governments. There are a number of deposits which have been reported by AMD at different times and UCIL is already producing Uranium from some of these deposits. For other deposits reported by AMD, the pre-project activities, viz., carrying out of R&D for preparation of process flowsheet, preparation of Techno-Economic Feasibility Reports (TEFR) and Detailed Project Execution Reports (DPERs), obtaining of various statutory clearances, land acquisition, site development etc are going on and are in different stages of execution.

Although, thorium reserves in India are very high, large scale deployment of commercial thorium based reactors cannot be done now. This is because thorium does not contain any fissile isotope (unlike that existing in Uranium), therefore commercial utilisation of thorium, on a significant commercial scale, can begin only when abundant supply of fissile materials i.e. either Plutonium or Uranium-233 are available. This can be done after an adequate inventory of Plutonium becomes available from our Fast Breeder Reactors (FBRs) constituting the second stage of Indian nuclear power programme. Therefore, large scale thorium utilisation is contemplated after a few decades of large scale deployment of FBRs. Development of technologies pertaining to utilisation of thorium has been a part of ongoing R & D activities in Department of Atomic Energy so that a mature technology is in place, well before the beginning of the large scale deployment of the thorium based reactors. In order to develop and demonstrate technologies for thorium based fuel, Advanced Heavy Water Reactor (AHWR) has been designed by Bhabha Atomic Research Centre (BARC). The Government, in December, 2016, has accorded in-principle approval for the Tarapur Maharashtra Site (TMS) for locating AHWR**.**

*****

Table -1 State-wise details of the uranium resources

State	District	Name of the deposit	Resource (tonne)		Status
			U_3O_8	U	
Andhra Pradesh	Kadapa	Tummalapalle Group	1,98,066	1,67,960	Existing mine (Under investigation)
	Guntur	Koppunuru	2,761	2,341	Under investigation
	Sub-total		**2,00,827**	**1,70,301**	
Telangana	Nalgonda	Lambapur	1,450	1,229	Planned mining centre
		Peddagattu	7,585	6,432	Planned mining centre
		Chitrial	9,515	8,069	Under investigation
	Sub-total		**18,550**	**15,730**	
Jharkhand	East Singhbhum	Jaduguda	8,038	6,816	Existing mine
		Jaduguda North	6,810	5,775	Under investigation
		Bhatin	1,700	1,442	Existing mine
		Narwapahar (NWP) + NWP Extn.	11,780	9,989	Existing mine
		Narwapahar Deeper	8,034	6,813	Extension of existing mine
		Turamdih Group	11,510	9,760	Existing mine
		Banduhurang	6,489	5,503	Existing mine
		Bagjata	1,860	1,577	Existing mine
		Mohuldih	3,330	2,824	Existing mine
		Garadih	1,270	1,077	Small deposit
		Kanyaluka	1,970	1,670	Small deposit
		Nimdih	815	691	Small deposit
		Rajgaon	1,200	1,018	Small deposit
		Singridungri-Banadungri	12,575	10,664	Under investigation
		Rajdah	1,019	864	Under investigation
	Saraikela-Kharswan	Bangurdih	1,785	1,514	Under investigation
	Sub-total		**80,185**	**67,997**	
Meghalaya	South West Khasi Hills	KPM (Domiasiat)	9,500	8,056	Planned mining centre
		Wahkyn - Wahkut	9,764	8,280	Exploratory mining planned (Under investigation)
		Gomaghat-Phlangdiloin	1,000	848	Small deposit
		Tyrnai	600	509	Small deposit
		Lostoin	869	737	Small deposit
		Umthongkut	1,535	1,301	Small deposit
	Sub-total		**23,268**	**19,731**	
Rajasthan	Sikar	Rohil	8,610	7,301	Exploratory mining centre (Under investigation)
		Rohil (West)	955	810	Small deposit

		Jahaz	3,570	3,027	Under investigation
	Udaipur	Umra	1,160	984	Small deposit
	Sub-total		**14,295**	**12,122**	
Karnataka	Yadgir	Gogi	4,267	3,618	Exploratory mining centre
		Kanchankayi – Hulkal	2,621	2,223	Under investigation
	South Canara	Walkunji-Yellakki	415	352	Small deposit
	Sub-total		**7,303**	**6,193**	
Chhattisgarh	Rajnandgaon	Bodal	1,530	1,297	Small deposit
		Bhandaritola	518	439	Small deposit
	Surguja	Jajawal	1,438	1,219	Small deposit
		Dumath - Dhabi	500	424	Small deposit
	Sub-total		**3,986**	**3,379**	
Uttar Pradesh	Sonbhadra	Naktu	785	666	Under investigation
	Sub-total		**785**	**666**	
Uttarakhand	Rudraprayag	Pokhri-Tunji	100	85	Small deposit
	Sub-total		**100**	**85**	
Himachal Pradesh	Una	Rajpura	364	309	Under investigation
	Shimla	Kasha-Kaladi	200	170	Small deposit
	Mandi	Tileli	220	186	Small deposit
	Sub-total		**784**	**665**	
Maharashtra	Gondia	Mogarra	355	301	Small deposit
	Sub-total		**355**	**301**	
Grand total			**3,50,438**	**2,97,170**	

Table -2 State-wise details of the Monazite resources

State	No of Deposits	Resource (million tonne)	
		Monazite	Total Heavy Minerals
Odisha	12	3.16	332.44
Andhra Pradesh	24	3.78	333.45
Tamil Nadu	50	2.47	298.42
Kerala	35	1.84	242.88
Maharashtra	5	0.004	5.64
Gujarat	2	0.07	12.53
West Bengal	1	1.20	5.45
Jharkhand	1	0.21	1.12
Total	**130**	**12.73**	**1,231.93**