

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION NO. 4113  
TO BE ANSWERED ON WEDNESDAY, 22<sup>ND</sup> DECEMBER, 2021**

**GLOBAL SUPPLY CHAIN**

4113. SHRI MANISH TEWARI:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the details of the amount of rare earth reserves India possesses and the installed mining, production and processing capacity;
- (b) whether the Government is aware of the global supply chain constraints leading to global shortages of rare earths and thereby to Microprocessor chips;
- (c) if so, the details thereof;
- (d) whether the Government has assessed its impact on Indian markets and if so, the details thereof;
- (e) whether the Government is aware of the fact that China is one of the leading producers of rare earths controlling 90% of the total global production;
- (f) whether despite possessing one of the largest rare earth reserves, India imports most of its rare earth requirements from China;
- (g) if so, the details of rare earth imports in the last five years, country-wise, element/compound-wise, including both weight and cost; and
- (h) the steps being taken by the Government to make India a leading rare earth producer?

**ANSWER**

**THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR  
MINISTRY OF SCIENCE AND TECHNOLOGY  
AND EARTH SCIENCES  
(DR. JITENDRA SINGH)**

- (a) The principal ore of rare earth (RE) in India is BSM sand within which a prescribed substance monazite occurs, which is a phosphate compound of uranium, thorium and RE. In the BSM source, the availability of RE is reported to be 0.056-0.058% in the form of RE oxide (REO). As per US Geological Survey, Mineral Commodity Summaries, 2021, the reported RE resources in India is about 6.9 million tons.

The annual installed mining, production and processing capacities are as under:

Mining: 10 million tons

Processing capacity in terms of rare earth concentrate: 11,200 tons

Refining capacity in terms of Total Rare Earth Oxide (TREO): 5,000 tons

Rare Earth Concentrate Production: 5040 tons\*

Refining in terms of TREO: 2000 tons

(Both Government and Private sector)

\*-Due to resource constraints

(b)-(c) As per Roskill report 2021, the global demand of RE is to the tune of 1,31,500 tons and the processing capacity is of the order of 1,47,570 tons, while as per Argus Report 2021, the global demand of RE is to the tune of 1,59,000 tons and the processing capacity is of the order of 1,97,000 tons. Hence, as such, there is no supply chain constraint.

However, Rare earth comprises of seventeen elements and are classified as light RE elements (LREE) and heavy RE elements (HREE). Some REE which are available in India such as Lanthanum, Cerium, Samarium, etc are in supply surplus while Dysprosium, Terbium, Europium which are classified as HREE are having supply constraint. These HREE are not available in Indian deposits in extractable quantity.

(d) As far as LREE is concerned, India has surplus quantity than the domestic demand. Capacity building for consumption of the LREE needs to be created on which Government is actively working. HREE is not available in extractable quantity in Indian source.

(e) Yes, it is a known fact that China is one of the leading producers of RE with estimated production of about 70% of the global production. They have the highest global reserves, which is about 6.4 times higher than India and has multiple times higher grade than that of Indian resource.

(f) The RE resources in India are fifth largest in the world. Indian resource is significantly less w.r.t grade and it is tied with radioactivity making the extraction long, complex and expensive. In comparison to China, Indian resources are significantly lean.

LREE produced within the Country are in surplus. The import is in miniscule quantities comprising of certain other element along with RE for specialized applications mostly in the form of proprietary compounds. HREE is imported for applications in laboratory scale. Hence, dependence on China is only for HREE in miniscule quantities.

(g) RE Compounds are imported under Chapter 28 with HSN codes 284610 / 284690. While the detailed information on import thereof as required may be sought from Ministry of Commerce and Industry, details available with IREL are furnished below:

(Qty in tons, Value in RsCrore)

S. No.	Description	2018-19		2019-20		2020-21 (upto Jan'21)	
		Qty	Value	Qty	Value	Qty	Value
1	Cerium Compounds (includes Zirconium oxide + cerium oxide formulation for catalytic converter)	528	71.35	856	104.99	547	70.34
2	Lanthanum Compounds	70		59		55	
3	Yttrium Compounds	17.6		11.35		10.14	
4	HREE Compounds	4.3		4.64		7.2	
5	RE Carbonate			10		160	

- (h) Production depends on deposits and end Industry consuming the products. India is one of the pioneers in processing of RE and these capabilities are available in terms of capacity, technology and skill. As per the vision plan, Government has targeted increasing REO producing capacity by 3 times by the year 2032. Also, in order to enhance consumption of RE in Indian industries, specially EVs, recently Government has announced a PLI scheme vide item No. 6 page 44 of Notification No. S.O. 4632(E) dated 9<sup>th</sup> November of Ministry of Heavy Industries.

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