GOVERNMENT OF INDIA
MINISTRY OF MINES
LOK SABHA
UNSTARRED QUESTION No.4503
ANSWERED ON 20.08.2025

EXPLORATION OF REEs AND CRITICAL MINERALS

4503. SHRI DUSHYANT SINGH:

Will the Minister of MINES be pleased to state:

(a) the details of the steps taken by the Government to carry out exploration of Rare Earth Elements (REEs) and Critical Minerals in different parts of the country along with the State-wise breakdown of the reserves discovered so far;
(b) the details of the challenges faced by Private Sector entities in exploration, mining and research & development of the Rare Earth Elements and Critical Minerals along with the measures taken by the Government to promote their greater involvement in these sectors; and
(c) the details of steps envisaged by the Government to mitigate the challenges faced by the Indian EV sector including but not limited to efforts such as diversification of import sources and acceleration of research and development in EV components and battery technologies in light of the recent export restrictions on REEs and Critical Minerals by China?

ANSWER

THE MINISTER OF COAL AND MINES
(SHRI G. KISHAN REDDY)

(a): The Geological Survey of India (GSI), an attached office of the Ministry of Mines, has prioritized and intensified the exploration of critical and strategic minerals. GSI carried out 628 mineral exploration projects on various critical and strategic minerals including 261 projects exclusively targeting Rare Earth Elements (REEs) from field seasons 2020-21 to 2024-25. In the field season 2025-26, GSI has taken up 230 mineral exploration projects for critical minerals specified in Part D of First Schedule to the MMDR Amendment Act, 2023, of which 94 projects are focused on the exploration of REEs.

Further, the National Mineral Exploration Trust (NMET), Ministry of Mines also provides funding support to Notified Exploration Agencies and Notified Private Exploration Agencies to boost domestic availability of critical minerals in the

country. So far, 196 projects on critical and strategic minerals amounting to Rs 575 crores has been sanctioned by NMET.

The State-wise details of critical mineral reserves and resources in the country are at Annexure.

(b): There are 24 critical minerals listed in the new Part-D of the First Schedule of the Mines and Minerals (Development and Regulation) Act, 1957 which includes Lithium, Nickel, Tungsten, Titanium, Graphite, etc. These minerals have been specified as critical and strategic minerals because of concentration of production and supply in limited geographies around the world. These minerals are difficult to explore and mine as compared to surfacial or bulk minerals. The Central Government is empowered to auction blocks of these minerals. Till date, 34 critical and strategic mineral blocks have been successfully auctioned by the Central Government.

In order to encourage private sector participation and investment in exploration of 29 critical and deep-seated minerals specified in the Seventh Schedule of the MMDR Amendment Act, 2023, a new mining concession called Exploration Licence has been introduced which is given through auction. A holder of the Exploration Licence invests in exploration in licenced area and is eligible for revenue share from the mine(s) which have been explored by the Exploration Licence holder when these mine(s) start production and dispatch of minerals.

Further, the Ministry of Mines has also notified 33 private exploration agencies for taking up exploration projects through funding from National Mineral Exploration Trust (NMET).

The incentives given through NMET to encourage participation by private sector in mineral exploration of critical and deep-seated minerals are as follows:

(i) 100% funding for mineral exploration projects of Notified Private Exploration Agencies.

(ii) Support for holders of Exploration Licenses and Composite Licenses by reimbursing exploration expenses upto 50% of the total expenditure incurred.

(iii) Exploration incentive of 25% of the approved projects cost of the G4 items for critical, strategic and deep-seated minerals to the exploration agencies if the block is successfully auctioned or upgraded to G3 stage.

The Government has also launched National Critical Mineral Mission (NCMM) in January, 2025 with an aim to secure a long-term sustainable supply of critical minerals and strengthen country’s critical mineral value chains encompassing all

stages from mineral exploration and mining to beneficiation, processing and recovery from end-of-life products. The Ministry of Mines under its S&T programme also funds Research and Development projects in critical and strategic minerals processing.

(c): As per the information available with the Ministry of Heavy Industries (MHI), the Government is promoting new technologies and spending on Research and Development (R&D) related to EVs through the following :

1. The expenditure incurred on Engineering R&D and product design & development is allowed to be considered as part of Eligible Investment under PLI-Auto, PLI ACC and SPMEPCI schemes.

2. Under the Capital Goods scheme of MHI, up to 80% of the cost of R&D projects including those on EVs is supported. These projects are housed in leading academic institutes like IITs, IISc., etc. The balance 20% is borne by the industry partners.

3. Centres of excellence have been set up for development of niche technologies not available in India, including technologies related to EVs.

4. An amount of Rs.780 crore is allocated under PM E-DRIVE for upgradation of testing agencies especially for EV related testing. This will also facilitate EV related R&D efforts of the automotive industry.

5. Further, the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad, an autonomous R&D centre under Department of Science and Technology (DST), has developed several advanced battery technologies viz. development of materials for Lithium and Sodium ion and Lithium Sulphur (LiS) batteries; Fabrication and validation of cylindrical and pouch cells, development of cost-effective and high-performance composite PCMS for battery thermal management systems in EV Applications, development of Aluminium-ion Battery as alternative to LIBs in EV and ESS applications, development of Hybrid-models for accelerated service life predication of LIBs and other battery systems, development of Eco-friendly process (wet & dry) for battery electrode fabrications, development of a scalable method for tuning the internal pore structure and porosity of a metal or alloy for thermal energy absorption, storage, and conversion applications.

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Annexure

The State-wise details of critical mineral reserves and resources in the country

Critical mineral reserves as per NMI as on 01.04.2020						
Sr. No.	Mineral	State	Unit	Reserves	Remaining Resources	Total Resources
1	COBALT	Jharkhand	Million tonnes	0	9	9
		Nagaland		0	5	5
		Odisha		0	31	31
		ALL INIDA		0	45	45
2	GRAPHITE	Andhra Pradesh	Tonnes	0	1138275	1138275
		Arunachal Pradesh		0	76318257	76318257
		Chhattisgarh		5282	1330	6612
		Gujarat		0	3355805	3355805
		Jammu & Kashmir		0	62740555	62740555
		Jharkhand		2604079	17402288	20006366.98
		Karnataka		0	992632	992632
		Kerala		15443	1419532	1434975
		Madhya Pradesh		0	12640000	12640000
		Maharashtra		0	1160000	1160000
		Odisha		2838414	17142707	19981121
		Rajasthan		0	1913554	1913554
		Tamil Nadu		3100193	6605086	9705279
		Telangana		0	219455	219455
		Uttarakhand		0	10700	10700
		ALL INIDA		8563411	203060176.3	211623587
3	MOLYBDENUM	Karnataka	Tonnes			
		Ore		0	1320900	1320900
		Contained MoS2		0	1718.7	1718.7
		Madhya Pradesh				
		Ore		0	8000000	8000000
		Contained MoS2		0	5020	5020

		Tamil Nadu				
		Ore		0	17882498	17882498
		Contained MoS2		0	10151.86	10151.86
		ALL INIDA				
		Ore		0	27203398	27203398
		Contained MoS2		0	16890.56	16890.56
4	NICKEL	Jharkhand	Million tonnes	0	9	9
		Karnataka		0	**	**
		Nagaland		0	5	5
		Odisha		0	175	175
		ALL INIDA		0	189	189
5	ROCK PHOSPHATE	Gujarat	Tonnes	0	314820	314820
		Jharkhand		0	107370000	107370000
		Madhya Pradesh		9031093	49425938	58457031
		Meghalaya		0	1311035	1311035
		Rajasthan		21845000	72003769	93848769
		Uttar Pradesh		0	25773444	25773444
		Uttarakhand		0	24178386	24178386
		ALL INIDA		30876093	280377391.6	311253484.6
6	PLATINUM GROUP OF METALS (PGMs)	Karnataka	Tonnes of metal content	0	1.5	1.5
		Kerala		0	0.18	0.18
		Odisha		0	14.2	14.2
		Tamilnadu		0	1.69	1.69
		Uttar Pradesh		0	3.35	3.35
		ALL INIDA		0	20.92	20.92
7	POTASH*	Bihar	Million tonnes	0	230	230
		Jharkhand		0	152	152
		Madhya Pradesh		0	1244	1244
		Rajasthan		0	20572	20572
		Uttar Pradesh		0	893	893
		ALL INIDA		0	23091	23091

8	RARE EARTH ELEMENTS (REE)	Bihar	Tonnes	0	1459	1459
		Gujarat		0	424000	424000
		Jharkhand		0	4	4
		Karnataka		0	3734	3734
		Maharashtra		0	2090	2090
		Odisha		0	25493	25493
		Uttar Pradesh		0	2948	2948
		ALL INIDA		0	459727	459727
9	TIN	Chhattisgarh	Tonnes			
		Ore		2101	29795176	29797277
		Metal		973.99	15909.58	16883.57
		Haryana				
		Ore		0	53910000	53910000
		Metal		0	86220.6	86220.6
		Odisha				
		Ore		0	15618	15618
		Metal		0	652.73	652.73
		ALL INIDA				
		Ore		2101	83720794	83722895
		Metal		973.99	102782.91	103756.9
10	TITANIUM	Andhra Pradesh	Tonnes	0	76733874	76733874
		Jharkhand		0	26603767	26603767
		Karnataka		0	13862094	13862094
		Kerala		2370712	117607659	119978371
		Maharashtra		303551	3980786	4284337
		Meghalaya		0	3345000	3345000
		Odisha		12654140.6	53019062	65673202
		Tamil Nadu		670221	113677284	114347505
		West Bengal		0	2279000	2279000
		ALL INIDA		15998624.6	411108525.7	427107150.3
11	TUNGSTEN	Andhra Pradesh	Tonnes			
		Ore		0	14802300	14802300
		Contained WO3		0	20262.57	20262.57
		Haryana				
		Ore		0	2230000	2230000

		Contained WO3		0	3568	3568
		Karnataka				
		Ore		0	36677818	36677818
		Contained WO3		0	6235	6235
		Maharashtra				
		Ore		0	10122250	10122250
		Contained WO3		0	18590.72	18590.72
		Rajasthan				
		Ore		0	23928294	23928294
		Contained WO3		0	93707.94	93707.94
		Tamil Nadu				
		Ore		0	250000	250000
		Contained WO3		0	50	50
		Uttarakhand				
		Ore		0	658000	658000
		Contained WO3		0	705	705
		West Bengal				
		Ore		0	763802	763802
		Contained WO3		0	1530.84	1530.84
		ALL INIDA				
		Ore		0	89432464	89432464
		Contained WO3		0	144650.07	144650.07
12	VANADIUM	Karnataka	Tonnes			
		Ore		0	19384430	19384430
		Contained V2O5		0	49497.55	49497.55
		Maharashtra				
		Ore		0	384630	384630
		Contained V2O5		0	1538.52	1538.52
		Odisha				
		Ore		0	4864795	4864795
		Contained V2O5		0	13557.94	13557.94
		ALL INIDA				

		Ore		0	24633855	24633855
		Contained V2O5		0	64594.01	64594.01
13	ZIRCON	Kerala	Tonnes	156509	1240355	1396864
		Odisha		476672	390247	866919
		Tamil Nadu		36285	43833	80118
		ALL INIDA		669466	1674435	2343901

Note : ** negligible,

* contains glauconite, polyhalite and sylvite

figures rounded off