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News and Highlights

2025 global progress in rare earth exploration

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In 2025, the global rare earth exploration and development sector achieved breakthroughs across multiple fronts. Projects advanced intensively across the Americas, Oceania, Africa, and Europe, with significant growth in resources, continuous emergence of new deposits, and strong impetus injected into the industry by technological innovation and policy support. The global rare earth resource supply pattern was further optimized (Table 1).

1. Fruitful results in resource growth and new deposit discoveries

Brazil emerged as a core region for resource growth. The Colossus rare earth deposit saw a 150% increase in resources and announced its first reserve estimate. The Caldeira rare earth deposit's resource estimate grew by 50%. The combined ore resources in the Caladão rare earth deposit's Zones A and B reached 5.72×10^8 tonnes, with a total rare earth oxide (TREO) grade of 0.1506%, concurrently hosting 2.29×10^4 tonnes of gallium metal resources.

Overseas new deposit discoveries were particularly notable. In April, Kazakhstan confirmed a giant rare earth deposit with an estimated resource exceeding 2×10^7 tonnes, potentially positioning it as a major rare earth resource country second only to China and Brazil. A new rare earth deposit was discovered in the Nunarsuit area of Southern Greenland; The resource estimate for the Ivigtût rare earth deposit soared, increasing 70-fold to currently reach 8.9×10^7 tonnes, with an average TREO grade exceeding 0.65%, making it one of the world's highest-grade rare earth deposits.

Resource estimates for projects in multiple countries continued to be updated. The Halleck Creek rare earth deposit in the US made progress twice within the year, obtaining trial

mining permits followed by a resource update. The latest inferred resource for the Kameelburg niobium-rare earth-molybdenum deposit in Namibia reached 2.79×10^8 tonnes with a TREO equivalent grade of 2.45%. Drilling at rare earth deposits in Western Australia such as Luni and Aileron intersected high-grade ores.

2. Accelerated pace of key project advancement

Projects in the Americas accelerated their implementation. The Round Top rare earth deposit in the United states announced production would start two years ahead of schedule. The Colosseum gold-rare earth deposit, after receiving restart approval from the United states Department of the Interior, commenced sampling and analysis. The Sheep Creek rare earth deposit confirmed associated gallium, with the highest rare earth grades in the United states.

Oceania steadily expanded its production capacity foundation. The Browns Range rare earth deposit in Western Australia released its definitive feasibility report. Jupiter became Australia's largest clay-type rare earth deposit. The potential of heavy rare earth deposits such as Stinger and North Stanmore gradually became emerged.

African projects entered the substantive development stage. Main construction began at the Longonjo rare earth deposit in Angola and progressed as planned. The Coola rare earth deposit completed preliminary drilling.

Europe and other regions progressed orderly. Projects continued to make headway at rare earth deposits such as Korsnas in Finland and Orion in Spain. The Tardiff rare earth-niobium deposit in Canada completed a scoping study. Drilling at the Springer rare earth deposit intersected thick ore bodies.

3. Dual drivers: policy support and technological innovation

Policy support intensified. The Brazilian government

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provided special funding for rare earth deposits such as Caldeira. The United states Department of Defense invested \$400 million in the MP Materials rare earth deposit to support capacity expansion. Multiple countries promoted project advancement by streamlining permit approvals.

Technological innovation expanded resource potential. Monash University developed a process for extracting rare earths from fly ash, providing a new pathway for unconventional rare earth resource development. The scoping study for the Ema ion-adsorption rare earth deposit in Brazil

was completed, various drilling and deposital processing technology optimizations improved resource utilization efficiency.

The global rare earth exploration sector in 2025 exhibited distinct characteristics of “resource expansion, project acceleration, and technology enablement.” Traditional resource regions such as Brazil, Australia, and the US continued to lead, while emerging regions such as Africa and Northern Europe rapidly rose, laying a solid foundation for stable supply in the global rare earth industry chain.

Table 1. 2025 Global rare earth deposit data summary.

Project name	Country/ region	Affiliated company	Resource-related data	Grade-related data	MREO (magnet rare earth oxide)- related data	Capacity/output- related data	Key progress milestones
Halleck creek rare earth deposit	Wyoming, USA	Wyoming Rare Earth Inc. (WRI), a subsidiary of American Rare Earths Inc. (ARR)	Ore resources: 547.5 million tonnes (0.1% TREO cut-off grade), including 63.9 million tonnes of indicated resources	TREO cutoff grade: 0.1%		Obtained trial mining permit; updated resources; received \$ 7.1 million funding from Wyoming State	
Ema rare earth deposit	Amazonas, Brazil	Brazilian Critical Depositals (BCM)	Total ore resources: 9.43 million tonnes; Ore resources within scoping study scope: 341 million tonnes; Original total resources: over 1 billion tonnes	Average TREO grade: 0.0716%; TREO grade within scoping study scope: 0.0746%; Original TREO grade: 0.0778%	Annual MREO output: 1800 tonnes (accounting for 37.5% of mixed rare earth oxide concentrate)	Annual output of mixed rare earth oxide concentrate: 4800 tonnes (including 1800 tonnes of MREO); Reaching 9600 tonnes/year (TREO) in the fourth year	Completed scoping study; rare earth oxide grade increased by 14 times through leaching tests
Wolverine deposit (Browns Range Project)	Western Australia, Australia	Northern Minerals	Ore resources: 7.3 million tonnes; proven and indicated ore resources: 5 million tonnes; ore reserves: 5.18 million tonnes	TREO grade: 0.96%; TREO grade of proven and indicated resources: 1.13%; TREO grade of reserves: 0.88%; dysprosium-terbium value accounts for 70%	Dysprosium, terbium and other magnet rare earths account for 70% of the value; specific content not specified	Annual output of xenotime concentrate: 17500 tonnes (containing 4350 tonnes of TREO)	Released final feasibility study; signed long-term supply agreement with Iluka Resources
North stanmore rare earth deposit	Western Australia, Australia	Victory Metals	Total ore resources: 248 million tonnes; near-surface high- grade ore resources: 53 million tonnes	Total TREO grade: 0.52%; TREO grade of indicated resources: 0.503%; TREO grade of near-surface high- grade resources: 0.1%; dysprosium grade: 0.0218%; terbium grade: 0.007%	Contains magnet rare earths such as dysprosium (0.0218%) and terbium (0.007%); total MREO not specified		Significant resource growth; sampling encountered the highest-grade ore body among global clay-type rare earth deposits
Monte alto rare earth deposit	Brazil	Brazilian Rare Earths		TREO grade: 45.7%; niobium oxide grade: 1.7%; scandium oxide grade: 0.0382%; tantalum oxide grade: 0.0962%; uranium grade: 0.5781%			Encountered high- grade mineralization; ore body is uncut along strike and at depth

Table 1. (Continued)

Project name	Country/ region	Affiliated company	Resource-related data	Grade-related data	MREO (magnet rare earth oxide)- related data	Capacity/output- related data	Key progress milestones
Colossus rare earth deposit	Minas Gerais, Brazil	Viridis Mining & Minerals	Ore resources: 493 million tonnes; ore reserves: 200.6 million tonnes; High-grade ore resources: 106 million tonnes	TREO grade: 0.2508%; TREO grade of reserves: 0.264%; TREO grade of high-grade resources: 0.4%; MREO grade: 0.0601% (accounting for 24% of TREO); MREO grade of reserves: 0.074%	MREO grade: 0.0601% (accounting for 24% of TREO); MREO grade of reserves: 0.074%; Corresponding MREO reserves: approximately 14.8444 million tonnes (calculated based on 200.6 million tonnes of reserves)	Annual ore processing capacity: 5 million tonnes; annual output of rare earth carbonate: 9500 tonnes	Resource growth of 140%; announced first reserves; received strategic debt financing intention from Bpifrance
Jupiter rare earth deposit	Western Australia, Australia	Critica	Inferred ore resources: 1.8 billion tonnes (0.1% cut-off grade); high-grade ore resources: 500 million tonnes (0.18% cut-off grade)	TREO grade: 0.17% (0.1% cut-off); TREO grade of high-grade resources: 0.22%; MREO accounts for 23% of TREO	MREO accounts for 23% of TREO; Total MREO corresponding to total resources: approximately 696,600 tonnes (calculated as 1.8 billion tonnes $\times$ 0.17% $\times$ 23%)		Became Australia's largest clay-type REE deposit; preliminary metallurgical tests recovery rate exceeded 50%
Coda north project	Brazil	Enova Mining		Titanium oxide grade: up to 15.3% (9-meter ore intersection), average 10.1%–10.5%			Supplementary drilling encountered high- grade titanium mineralization; titanium enrichment correlated with REE and niobium mineralization
Sheep creek rare earth deposit	Montana, USA	U.S. Critical Metals (USCM)	Project coverage area: 25.9 km ² ; key area: 6.5 km ²	TREO grade up to 9%; praseodymium- neodymium oxide grade: 2.4%; gallium content: 0.018%–0.0385%	Praseodymium- neodymium oxide grade: 2.4% (praseodymium- neodymium are core magnet rare earths)		Gallium mineralization confirmed; cooperated with Idaho National Laboratory to develop processing technology
Caldeira rare earth deposit	Minas Gerais, Brazil	Meteoric Resources	Ore resources: 1.1 billion tonnes (0.1% TREO cut- off grade); proven and indicated ore resources: 589 million tonnes; original resource growth: 50%	Average TREO grade: 0.2413%; TREO grade of proven and indicated resources: 0.2655%; MREO grade: 0.0559% (accounting for 23.2%)	MREO grade: 0.0559% (accounting for 23.2% of TREO); total MREO corresponding to total resources: approximately 1.3221 million tonnes (calculated as 1.1 billion tonnes $\times$ 0.2413% $\times$ 23.2%)	Annual ore mining and processing capacity: 5 million tonnes; annual TREO output: 193600 tonnes (over 25 years)	Resource growth of 50%; received Brazilian government funding; scoping study shows post- tax net present value exceeding \$ 800 million
Tiros titanium-rare earth deposit	Brazil	Resouro Strategic Metals	Ore resources: 1.4 billion tonnes; high-grade titanium resources: 104 million tonnes; titanium content: 165 million tonnes; TREO: 5.5 million tonnes	Titanium grade: 12% (total resources), 23% (high-grade); TREO grade: 0.4% (total resources), 0.9% (high-grade); MREO accounts for 27% of TREO	MREO accounts for 27% of TREO; total MREO corresponding to 5.5 million tonnes of TREO: approximately 1.485 million tonnes		Updated resources; titanium resources account for more than half of Brazil's total titanium resources; metallurgical tests nearing completion

Table 1. (Continued)

Project name	Country/ region	Affiliated company	Resource-related data	Grade-related data	MREO (magnet rare earth oxide)- related data	Capacity/output- related data	Key progress milestones
Tanbreez rare earth deposit	Greenland	Critical Metal Corp	Indicated and inferred ore resources: 45 million tonnes; rare earth resources of Fjord deposit: 22.6 million tonnes; target exploration: 500 million tonnes of ore resources	TREO grade: 0.40%; TREO grade of some drill holes: 0.48%–0.55%; HREO accounts for 25.5%–27%; Ga ₂ O ₃ grade: 0.0090%–0.01%	Heavy rare earths (HREO) account for 25.5%–27% of TREO, including magnet heavy rare earths; Specific MREO proportion not specified	Preliminary output: 85000 tonnes/a; Expanded output: 425000 tonnes/a	Started drilling; released high-grade drilling results; received \$ 120 million loan intention from Export-Import Bank of the United States; obtained key environmental permits
Ivigtût rare earth deposit	Southwest Greenland	Eclipse Metals Ltd	Ore resources: 89 million tonnes (0.2% cut-off grade); contains 567600 tonnes of TREO	Average TREO grade: 0.6363% (exceeding 0.65%)			Resource growth of 70 times; became one of the world's high-grade rare earth deposits
Nunarsuit rare earth deposit	Southern Greenland	Amaroq Depositals		TREO grade: 2.31%; heavy rare earths account for 27% of TREO; light rare earths account for 73%; magnet rare earths account for 21%	Magnet rare earths account for 21% of TREO; estimated MREO grade: approximately 0.4851% (based on 2.31% TREO grade)		Preliminary discovery of high- grade rare earth outcrops
Tardiff rare earth- niobium deposit	Northwest Territories, Canada	Vital Metals		TREO grade of concentrate: 26.4%; Nb ₂ O ₅ grade: 3.3%; TREO recovery rate: 45.1%	Annual output: 2900 tonnes of neodymium oxide, 900 tonnes of praseodymium oxide (both core MREO), totaling 3800 tonnes/a	Annual ore mining and processing capacity: 3 million tonnes; annual output of rare earth concentrate: 56000 tonnes; neodymium oxide: 2900 tonnes/year; Praseodymium: 900 tonnes/year	Completed scoping study; planned pre- feasibility study
Springer rare earth deposit	Ontario, Canada	Volta Metals Ltd.	Indicated ore resources: 4.167 million tonnes; inferred ore resources: 12.73 million tonnes; single drill hole ore intersection thickness: 438.9 meters	TREO grade of indicated resources: 1.073%; TREO grade of inferred resources: 1.119%; TREO grade of single drill hole: 0.95%–2.19%			Drilling encountered thick ore bodies; ore body not controlled at depth
Cap niobium- rare earth deposit	British Columbia, Canada	Apex Critical Metals		Nb ₂ O ₅ grade: 0.59%–1.08%; associated rare earth depositionalization			Drilling encountered niobium-rare earth depositionalization; planned to expand drilling workload
Longonjo rare earth deposit	Angola	Pensana				Preliminary annual output of mixed rare earth carbonate: 20000 tonnes; later expanded to 40000 tonnes/a	Main construction started; progressed as planned; construction cost controlled within \$ 217 million

Table 1. (Continued)

Project name	Country/ region	Affiliated company	Resource-related data	Grade-related data	MREO (magnet rare earth oxide)- related data	Capacity/output- related data	Key progress milestones
Coola rare earth deposit	Angola	Pensana					Completed preliminary drilling plan; provided resource support for extending the mining life of the Longonjo Project
Kameelburg niobium-rare earth- molybdenum deposit	Namibia	Aldoro Resources	Inferred ore resources: 520.61 million tonnes (0.5% TREO cut- off grade); Upper high-grade ore section: 271 million tonnes; lower niobium ore: 231.59 million tonnes	Equivalent TREO grade: 2.49% (including 1.18% TREO); equivalent TREO grade of upper high-grade ore section: 2.9%; praseodymium- neodymium proportion: 21%	Praseodymium- neodymium (core MREO) accounts for 21% of TREO; higher MREO content in upper high-grade ore section		Resource growth of 85%; completed first resource estimation
Caladao rare earth deposit	Brazil	Axel REE	Inferred ore resources of Block A: 100 million tonnes; Block B (58 square kilometers) not estimated; gallium metal content: 4200 tonnes	Gallium (oxide) grade: 0.0042%; magnet rare earth recovery rate: 52%; gallium recovery rate: 25%	Magnet rare earth recovery rate: 52%; specific grade and content not specified		Announced first gallium resources; rare earths can be extracted by simple leaching method in depositional processing tests
Santa Anna Project	Brazil	Power Minerals		Maximum TREO grade: 6.2027% (1- meter thickness); average TREO grade: 1.7944%; niobium (Nb ₂ O ₅) grade: 1.359%			Drilling encountered high- grade ore bodies; planned 10000- meter reverse circulation drilling
Araxa niobium-rare earth deposit	Minas Gerais, Brazil	St George Mining		TREO grade: 12.34%; praseodymium- neodymium magnet rare earth oxide grade: 3.33%; low niobium grade	Praseodymium- neodymium magnet rare earth oxide grade: 3.33% (accounting for 27% of TREO)		Auger drilling discovered high- grade ores; planned subsequent drilling
Colosseum gold-rare earth deposit	California, USA	Dateline Resources	Gold resources: 1.1 million ounces (complying with JORC-02 standard); Rare earth resources not estimated			Annual gold output: 75,000 ounces (deposit life over 8 years)	Obtained restart approval from United States. Department of the Interior; started sampling and analysis
Round top rare earth deposit	Texas, USA	USA Rare Earth (USAR)				Expected first rare earth output in the second half of 2028; associated magnet manufacturing plant with annual magnet output of nearly 5000 tonnes	Announced commissioning two years ahead of schedule; solvent extraction test successful; produced 99.1% purity dysprosium oxide samples

Table 1. (Continued)

Project name	Country/ region	Affiliated company	Resource-related data	Grade-related data	MREO (magnet rare earth oxide)- related data	Capacity/output- related data	Key progress milestones
Crean deposit (Aileron Project)	Western Australia, Australia	Encounter Resources	Ore resources of Crean deposit: 3.5 million tonnes; preliminary inferred ore resources of Aileron Project: 19.2 million tonnes (including Green and Emily deposits)	TREO grade of Crean deposit: 1.05%; TREO grade of the whole project: 0.65%; Niobium grade of Crean deposit: 1.92%; Niobium grade of the whole project: 1.74%; TREO grade of high- grade ore section: 6.3%			Drilling encountered high- grade ore; discovered new high-grade niobium-rare earth ore section
Luni niobium-rare earth deposit	Western Australia, Australia	WA1 Resources	Ore resources: 220 million tonnes; indicated ore resources: 73 million tonnes; high-grade ore resources: 31 million tonnes	Average niobium grade: 1%; niobium grade of indicated resources: 1.38%; niobium grade of high-grade ore section: 2.31%; maximum niobium grade of single drill hole: 6%			Drilling encountered high- grade ore; cumulative drilling completed: 80000 meters; planned resource update in 2026
Stinger niobium-rare earth deposit	Western Australia, Australia	Dreadnought Resources	Exploration target: 15–60 million tonnes; Ian deposit: 30 million tonnes; C3 deposit: 10.84 million tonnes	TREO grade of Ian deposit: 1.04%; TREO grade of C3 deposit: 1%; TREO grade of single drill hole: 0.9%; Niobium grade: 0.5%–1%			Discovered high- grade rare earth exploration targets; mineralization characteristics similar to Mountain Pass deposit
Kazakhstan ZK (Zhana Kazakhstan) rare earth deposit	Kazakhstan	Not specified	Resources exceeding 200 million tonnes	Average grade of rare earth metals: 0.07%; contains neodymium, cerium, lanthanum, yttrium	Contains neodymium (core MREO); specific grade and content not specified		Announced discovery of a giant rare earth deposit