

RARE EARTHS IN BRAZIL

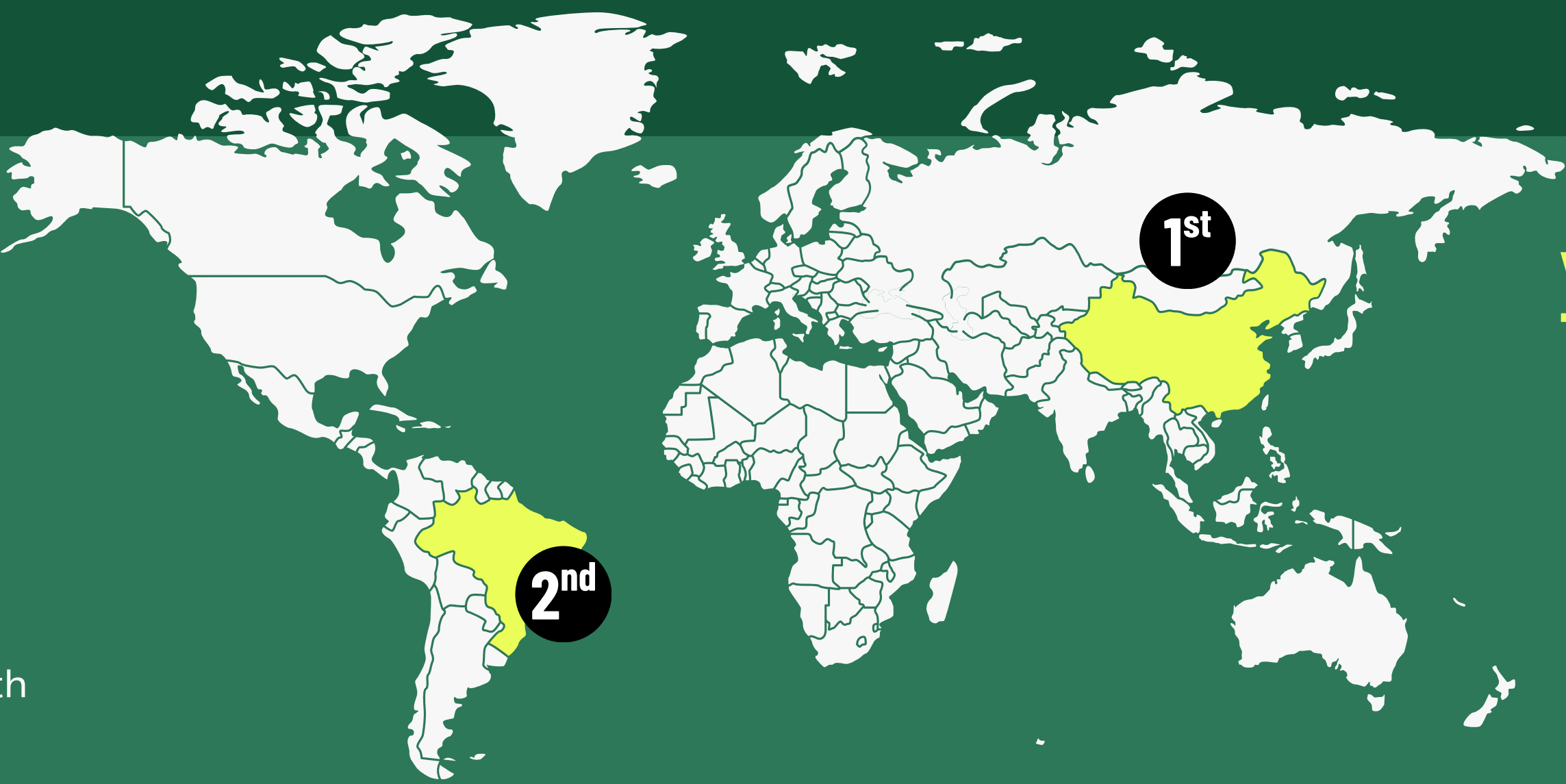


Brazil holds the world's
2nd LARGEST RESERVE
of rare earths.

The total, however, fell: the USGS worked with ~21 million tonnes (about 23% of the global total) and, in **the Mineral Commodity Summaries 2026**, revised its estimate to

11 million t 15% of the total

of rare earth oxides. The revision reflects classification criteria, and **the country keeps its second position**. Brazil's deposits include significant amounts of heavy rare earths (**dysprosium and terbium**), the highest-priced ones.



WHO DOMINATES THE CHAIN:

CHINA has the **largest reserve** and holds:

- 90% of processing and beneficiation
- 90% of permanent-magnet manufacturing

PRODUCTION STILL MINIMAL:

20 t (2024) **< 0,1% global**

The only commercial operation is **Serra Verde, in Minaçu (GO)**, which began production in 2024 and is moving toward a:

Phase 1 nominal capacity: ~6.4k t/year of oxides (TREO)

DEPOSIT TYPES:

- Ionic clays**
Serra Verde/GO; Caldeira and Colossus in southern MG; Carina/GO; PCH/GO
- Very high-grade rocks:**
Bahia (Rocha da Rocha, with zones above 40% TREO)
- Monazite and niobium-associated deposits:**
Seis Lagos (AM) — this one within an Indigenous reserve, legally barred from exploitation

MARKET DATA

COMPANIES AND MAIN SHAREHOLDERS

The relevant rare earth projects in Brazil are foreign-controlled.



One from the US, seven from Australia and two from Canada, concentrated in Goiás and southern Minas Gerais. The debate over “mineral sovereignty” runs into this accomplished fact.

COMPANY (origin/listing)	PROJECT and LOCATION	PRINCIPAIS ACIONISTAS	STAGE (2026)
Serra Verde/GO → USA Rare Earth (US, Nasdaq: USAR)	Pela Ema Minaçu (GO)	Sellers: Denham Capital, Vision Blue (Mick Davis), Orion and Energy & Minerals Group — will keep ~34% of the combined company; DFC (US state bank) financed US\$ 565 million (Feb/2026)	Only one in production; sale for ~US\$ 2.8 bn announced on 04/20/2026, closing expected in Q3/2026; more than US\$ 1.1 bn invested over 16 years; 20+ year mine life
Meteoric Resources (Australia, ASX: MEI)	Caldeira Poços de Caldas/Caldas (MG)	Widely held on the stock market; raised R\$ 142 mn in Apr/2026	Preliminary license approved (Dec/2025); engineering studies and separation assessment
Viridis Mining (Australia, ASX: VMM)	Colossus Poços de Caldas (MG)	Widely held on the stock market	Preliminary license approved (Dec/2025)
Aclara Resources (Canada, TSX: ARA)	Carina Nova Roma (GO)	New Hartsdale ~36.9%, Hochschild Mining ~19.7%, CAP ~10.2%	Estimated capex of US\$ 780.9 mn; deployment from 2026, commercial production expected in 2028; separation planned in Louisiana (US); promise of 5.7 thousand jobs
Brazilian Rare Earths (Australia, ASX: BRE)	Rocha da Rocha Bahia	Hancock Prospecting (Gina Rinehart) entered pre-IPO with ~5.85%; raised A\$ 120 mn in Oct/2025	Advanced exploration; market value in the range of A\$ 1.2 bn
Appia Rare Earths (Canada)	PCH Iporá, Diorama e Israelândia (GO)	Publicly traded Canadian junior	Exploration; promise of R\$ 550 mn in investments

SALE OF SERRA VERDE

- USA Rare Earth** will buy 100% of **Serra Verde** for US\$ 300 million in cash plus ~126.8 million new shares — equity of ~US\$ 2.8 billion.



US\$ 300 mi



The deal **transfers to the US the only at-scale mine outside Asia capable of supplying the four magnetic elements** (Nd, Pr, Dy, Tb).

In **Brazil**, the deal became a matter of “**sovereignty**”, even though the company was already controlled by foreign funds before the sale.

SERRA VERDE HAS A 15-YEAR OFFTAKE CONTRACT

with a special purpose vehicle capitalized at **US\$ 1.55 billion** — of which US\$ 750 million comes directly from the **U.S. Department of War** — and by **private capital**, for 100% of the Phase 1 output of Nd, Pr, Dy and Tb

BRAZILIAN PUBLIC MONEY



BNDES and Finep plan

+ R\$ 45 billion reais

for critical minerals, with **business-plan details kept confidential**.

Of the **R\$ 5 billion call** launched in 2025,

56 projects were pre-selected

(10 in rare earths) — but, as of June 2026, **no funds had actually been released and no industrial plant built**.



The state bank **selected companies with environmental liabilities**, such as **Serra Verde, Viridis and Meteoric**.

PROFIT CONCENTRATION

The major miners earned nearly:

R\$ 2 TRILLION

in Brazil since the Mariana disaster (2015)



SOCIO-ENVIRONMENTAL IMPACTS

FACTSHEET

RARE EARTHS IN BRAZIL



Mining
Observatory



RURAL SETTLEMENTS:

187 rare earth applications affect 96 Incra settlements:



Bahia leads (88), followed by Goiás (53), Pernambuco (21), Paraíba (8) and Minas Gerais (6); **37 belong to Serra Verde in GO.**

In total, the rush for critical minerals reaches

1,432 agrarian-reform settlements



QUILOMBOLA TERRITORIES

About 1.400 mining applications overlap 242 quilombola territories in 24 states.

Goiás concentrates about one fifth, and rare earths are among the five most sought-after substances.

The Kalunga territory (GO) — the largest in the country, with 3,850 families, Brazil's first ICCA recognized by the UN — accumulates applications for rare earths, gold, manganese, iron and copper.



LICENSING IN QUESTION

Because it involves associated uranium and thorium, licensing should be federal (Ibama, LC 140/2011), but it was delegated to Semad-GO; **in April 2026 Ibama suggested taking the process back.**

In the Minaçu region, quilombolas, riverside dwellers and small farmers report a lack of information and territorial conflicts.



DEFORESTATION

Serra Verde:

The company was fined by Semad-GO for clearing native vegetation at Cerrado springs along 2 to 3 km.

A settlement agreement cut the penalty from R\$ 152.6 thousand to R\$ 76.3 thousand.



ENVIRONMENTAL COMPENSATION STALLED

Of the **R\$ 52.1 million** in environmental compensation agreed with miners in Goiás (2019–2025)

Only R\$ 5.1 million (9.93%) was carried out.



RADIOACTIVITY CONTESTED

At the Caldeira Project (Meteoric), **samples recorded uranium/thorium above CNEN's exemption limit.**

The MPF points to a threat to the regional water supply and estimates the suppression of 98 springs in the region's aquifer recharge area.

The pits lie 1.83 km from INB's tailings dam and near other structures on alert, with

~15 thousand t of nuclear tailings nearby

GEOPOLITICAL ISSUES



THE CHINESE LEVER

In 2025, **China** announced sweeping export controls over the rare earth chain (separation and refining equipment, inputs, technology and even magnets made outside China with Chinese material).

Even though temporarily suspended in 2026, this is part of the control architecture that remains in force, including the ban on exporting dual-use items to US military end users.

OTHER PLAYERS

Saudi Arabia and the United Arab Emirates announced about R\$ 23 billion for geological mapping and strategic minerals in Brazil (Ma'aden, R\$ 8 bn; UAE/Mubadala, ~R\$ 15 bn) — with disagreements over the real scope.



In April 2026, Brazil and Germany signed a joint declaration of scientific and technological cooperation

on critical minerals and rare earths, with a bilateral financing program planned for 2026. Brazil continues to sign bilateral agreements with several countries.

BRAZIL-US NEGOTIATION

In February 2026 the **US** proposed a critical-minerals agreement with minimum prices, investment in refining and technology transfer, without exclusivity.

By August 2026, however, no agreement had been signed — the central impasse pits Brazil's demand for domestic processing against the minimum price defended by the US against Chinese dumping;

NATIONAL POLICY

On 05/06/2026 the Chamber approved the National Policy on Critical and Strategic Minerals (PL 2780/2024), which is currently moving under urgency in the Senate.

Without broader debate, the **Observatório da Mineração** criticizes the expansion of incentives without socio-environmental counterparts and the risk of greenwashing in the certification of "low-carbon mining," as well as risks to Indigenous peoples and traditional communities.

FEDERATIVE DISPUTE

Goiás governor Ronaldo Caiado signed a memorandum with the Trump administration on critical minerals, and Lula accused the opposition of "selling out Brazil."

Goiás state law 23,597/2025 created the state authority (AMIC/GO), a fund and Special Zones with licensing priority — jurists consider it unconstitutional (Union competence, art. 22 of the Constitution; precedent ADI 4606/STF).

UNCERTAINTIES AND MEDIUM-TERM OUTLOOK

Price and China

The prices of neodymium-praseodymium and other oxides remain, in practice, set by China's quota and export policy.

The suspension of controls runs until November 2026; their reactivation (or new episodes of the US-China dispute) could either enable Brazilian projects — through higher prices and the search for alternative sources — or block access to separation equipment and technology.





From promise to production

The gap between reserves and production is the central fact:
2nd largest reserve in the world, ~20 t produced in 2024.



Unstable data

The USGS revision of Brazil's reserves (from 21 to 11.4 million t) shows that the baseline figures themselves are still fragile and sensitive to classification criteria.

Caution is needed with rankings and projections derived from them.

Verticalization unlikely in the short term

There is no at-scale oxide separation capacity in Brazil, and the most advanced projects foresee separation abroad (Aclara/Louisiana) or the sale of mixed concentrate. Without a technology-transfer requirement in financing and agreements, experts point to the risk of **repeating the historical pattern of a raw-material exporter, now with public subsidy.**

Governance and oversight

Public financing advances faster than strategy: funds announced in the range of R\$ 45–50 billion, pre-selected projects with environmental liabilities, contested state licensing (GO and southern MG), unexecuted environmental compensation and an ANM in institutional crisis, with its top leadership indicted by the Federal Police in June 2026.

The combination of regulatory acceleration and weakened oversight is the main socio-environmental risk of the cycle.

Litigation and prior consultation

Actions by the MPF (radioactivity and water in southern MG; prior consultation), the **dispute over jurisdiction for Serra Verde's licensing** and the pressure on quilombola, Indigenous and settlement territories tend to produce legal challenges capable of altering timelines.

2026–2030 SCENARIO

Most likely scenario:

- Consolidation of **Serra Verde/USA Rare Earth** as an export hub under US control;
- One or two new projects reaching production around 2028–2029, if prices and licenses allow;
- PNMCE enacted with incentives, but with **weak socio-environmental counterparts**;
- And Brazil relevant as a concentrate supplier, without capturing the separation, refining and magnet stages within this decade's horizon.**

Alternative scenarios depend on Chinese supply shocks (acceleration) or on falling prices and court defeats (paralysis).

WHAT THE STRATEGIC STUDIES SAY (2025–2026)

Strategy under construction

Two reference studies published in June 2026 — the CGEE/MCTI roadmap for 2026–2040 and the CEBRI/Vallya report supporting the National Rare Earths Strategy (ENTR), commissioned by the MME — converge on the essentials:

Geological advantage alone does not guarantee a strategic position, and the recommended path is gradual and selective verticalization, focused on separation and refining (midstream), without trying to internalize the whole chain at once.

Potential and value captured

Brazil's most advanced projects add up to a potential of:

~38.7 thousand t/year of oxides (TREO)

10%
of the total

R\$ 13,2 billion in planned investments.

Exporting raw concentrate, however, captures less than 5% of the chain's added value.

Projected demand

By 2040 global demand is expected to grow

~6,5% per year

driven by permanent magnets:

IN 2030:
~90 thousand t/year of magnetic rare earths

In Brazil, the EPE projects demand about six times higher between 2024 and 2034.

IN 2040:
~130 thousand t/year (electric-vehicle motors, 35 thousand t; wind turbines, 28 thousand t)

Minimal public capture

Between 2017 and 2023, Brazil collected no royalties (CFEM) from rare earths.

In mining overall, federal tax exemptions from 2017–2024 (R\$ 47.35 bn) exceeded CFEM collection (R\$ 46.1 bn); five foreign-controlled companies concentrated 93% of the exemptions in 2024, and public capture does not exceed 3% of the value produced (14% in Chile and India; 5% in Australia).

Only 0.49% of critical-mineral mining processes are in effective extraction.

Separation and refining: viable, but risky

The CEBRI/Vallya study's modeling indicates that an oxide separation plant in Brazil is viable — at prices projected for 2030, revenue of ~US\$ 3.2 bn/year, IRR of 16% to 31% and payback of ~4 years — **but exposed to dumping and dependent on incentives, a price floor and guaranteed demand.**

The CGEE estimates a medium refinery (5 thousand t/year of oxides, ~1 thousand t of NdPr) at ~US\$ 300 million and conditions viability on sovereign offtakes (US/Japan–Lynas model) and consumer partners (CBMM model), in a market with only 4 or 5 qualified Western buyers.

Technological capacity exists at pilot scale

IPT, CBMM, WEG e UFSC já dominaram, em escala piloto/laboratorial, a redução eletroquímica dos óxidos, a produção de ligas NdFeB por strip casting e a fabricação de ímãs; o consórcio MagBras (28 empresas e 7 ICTs, R\$ 73 milhões, 2025–2028) prevê ímãs em escala piloto no CIT SENAI ITR, em Lagoa Santa (MG). A Nuclebrás/Nuclemon chegou a produzir óxidos com 99,9% de pureza antes de ser desativada nos anos 1990. O CGEE propõe planta-piloto de separação de pesadas (Dy/Tb) no CETEM até 2028 e a formação de 500 especialistas em metalurgia de terras raras.

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