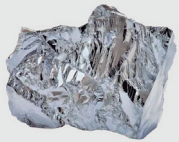


Critical Minerals: A Strategic Opportunity for Brazil-Germany Cooperation in Sustainable and Verifeable Supply Chains

A diagnosis carried out through a partnership between the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Fundação Eco+, analyzed tangible opportunities for cooperation between Brazil and Germany in the critical minerals chain. The study is funded by the develoPPP program of the German Federal Ministry for Economic Cooperation and Development (BMZ), under the Brazil-Germany Cooperation for Sustainable Development. Based on an assessment of 15 priority minerals, points of complementarity were identified between Brazil's geological potential, Brazil's main demands for the development of its production chain and Germany's technological and industrial capacities. This scenario highlights a mutually beneficial cooperation agenda aimed at strengthening safer, more sustainable and traceable supply chains between these markets. **Check out the main points assessed in this document.**

15 critical minerals assessed

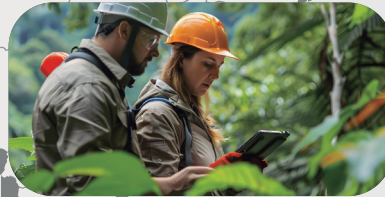


Scenario

The transition to a low-carbon, energy-secure economy is increasing demand for critical minerals and putting pressure on more resilient supply chains. The concentration of refining in Asian countries reinforces the need to amplify partnerships, pushing the global market, especially the European Union and Germany, to diversify its suppliers.



In this context, Brazil is once again proving to be a strategic partner, combining ample availability of mineral resources, a predominantly renewable electricity grid and tangible opportunities for the expansion of sustainable processing and refining in Brazilian territory.



COOPERATION WITH GERMANY IS A LEVER TO DEVELOP THESE STAGES, STRENGTHENING MORE COMPLETE, SUSTAINABLE, TRACEABLE AND COMPETITIVE VALUE CHAINS FOR BOTH MARKETS.

Diagnosis

The analysis of 15 prioritized minerals, based on the criteria of reserves, logistics, infrastructure and strategic value, made it possible to consolidate a ranking of priorities for bilateral cooperation. **The results indicate three categories of opportunities:**

CONSOLIDATED BRAZILIAN LEADERSHIP
NIObIUM, TANTALUM AND SILICON METAL



TECHNOLOGICAL FRONTIER
LITHIUM, GRAPHITE AND RARE EARTHS



DIVERSIFICATION POTENTIAL
NICKEL, COBALT, COPPER AND VANADIUM

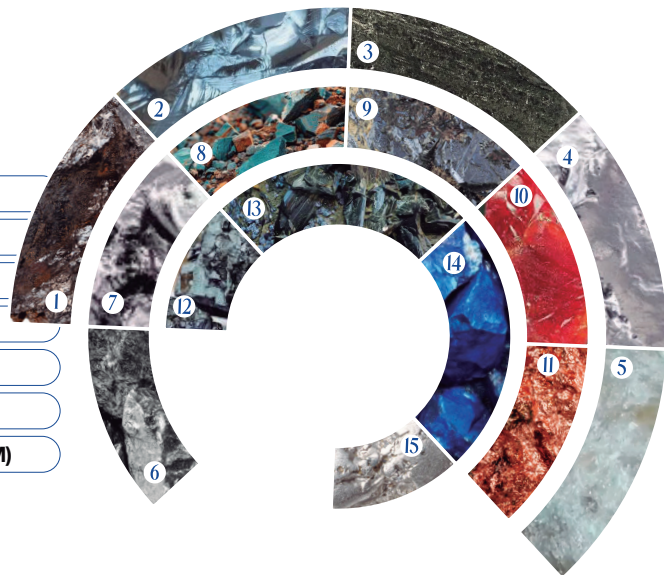


Potential for Brazil-Germany Cooperation

For the ranking, a scoring criterion was defined considering maturity, ESG standards, the presence of German companies in the chain and reserves, as well as the potential for generating added value in Brazil, especially in the refining stages.

The minerals were then ranked from highest to lowest potential for cooperation, where the top positions indicating greater attractiveness for investment.

- | | |
|-----------------|-------------------|
| 1 Niobium | 9 Titanium |
| 2 Silicon Metal | 10 Vanadium |
| 3 Graphite | 11 Copper |
| 4 Tantalum | 12 Manganese |
| 5 Lithium | 13 Tungsten |
| 6 Aluminum | 14 Cobalt |
| 7 Nickel | 15 Platinum (PGM) |
| 8 Rare Earths | |



Brazil not only has significant geological reserves, but also real conditions to consolidate itself as a strategic partner in supply chains for critical minerals, in the context of Brazil-Germany Cooperation and the demands of the European Union. Among the minerals assessed, some stand out for their combination of significant reserves, project maturity and installed capacity.

Brazil's competitive edge lies in the combination of mineral abundance with one of the cleanest electricity matrices in the world, creating favorable conditions for the production of less carbon-intensive inputs, especially in the most energy-intensive industrial stages, such as advanced processing, refining and metallurgy. With the incorporation of new technologies, Brazil has the potential to consolidate itself as a global benchmark in environmentally and socially sustainable mining.

Three central pillars of this partnership stand out:



TECHNOLOGICAL CONTRIBUTION TO REFINING

Brazil-Germany Cooperation can accelerate refining in Brazil through technology transfer, industrial partnerships and the use of European technologies already present in the country, boosting chains with higher added value.



HARMONIZATION OF ESG STANDARDS

Alignment with the European Union's ESG requirements, driven by the Critical Raw Materials Act, has become a condition for competitiveness and reputation, requiring advances in traceability, governance and risk management, with the support of technologies to reduce impacts, raise standards and attract investment.



SECURITY OF SUPPLY AND INCREASED COMPETITIVENESS

Brazil-Germany Cooperation can strengthen more resilient and predictable supply chains for the European industry, while for Brazil it must be linked to adding value and attracting investment.



Brazil is experiencing an important geopolitical window: We are a stable, reliable partner with great mineral potential. To move forward on the critical minerals agenda, we need to expand geological knowledge, consolidate a robust national policy and attract investments that will add value to the country. Concomitantly, it is essential that we tackle the major challenges facing the minerals sector. Only with high standards of safety, sustainability and respect for human rights can we strengthen governance, increase regulatory predictability and create a reliable and competitive environment for investments in the sector. In this context, international cooperation can accelerate technological densification, strengthen strategic production chains and raise the socio-environmental level of the sector in Brazil."

Carlos Omildo Colombo, Program Director, Secretariat for Economic Reforms - Ministry of Finance (2026)



The demand for critical minerals is directly linked to the challenges and opportunities of energy transition. At BASF, we believe that the development of this chain in Brazil requires a combination of technical knowledge, industrial innovation and international cooperation. By integrating sustainability and competitiveness, we see the opportunity to strengthen local capacities and contribute to solutions that generate value for society as a whole."

Priscila Camara, Managing Director of BASF in Brazil (2026)



The diagnosis on Critical Minerals is the result of a partnership between GIZ and Fundação Eco+, and is funded by the develoPPP program of the German Federal Ministry for Economic Cooperation and Development (BMZ), under the Brazil-Germany Cooperation for Sustainable Development. The program is aimed at companies wishing to invest sustainably in developing or emerging countries, expanding their local operations and contributing to sustainable development.

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