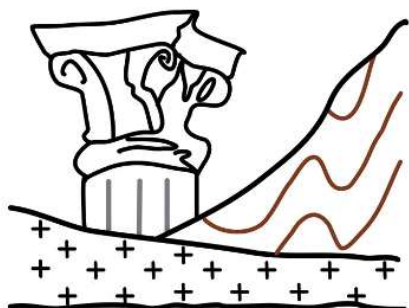
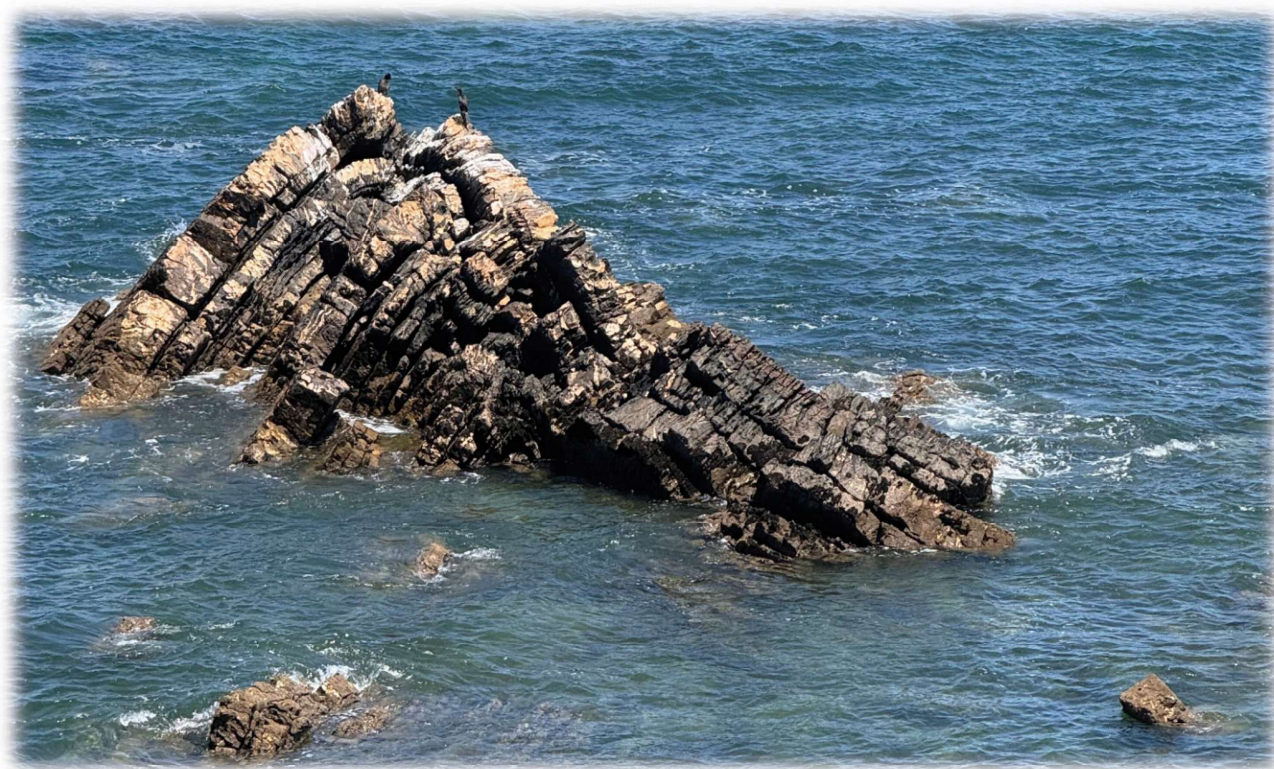




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Livro de Resumos

Coordenado por:

Pedro Nogueira, José Roseiro e Noel Moreira

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Mapping critical raw materials in Portugal

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Resumo

Reliable and secure access to Critical and Strategic Raw Materials (CRM/SRM) is a strategic requirement for the European Union, underpinning industrial competitiveness, technological innovation, and the transition toward a climate-neutral economy. In response to increasing supply risks, high import dependency, and growing demand driven by renewable energy systems and e-mobility, this work presents the second Critical Raw Materials Deposits Map of mainland Portugal, compiled at a scale of 1:700000. The map integrates geological, spatial, and mineral resource data derived primarily from the SIORMINP database (Information System of Portuguese Occurrences and Mineral Resources), developed and maintained by LNEG. This database currently contains over 2453 documented mineral occurrences, including 1214 strategic and critical mineral occurrences associated with EU-defined critical raw materials, which were systematically identified and evaluated. Key commodities represented include tungsten, lithium, antimony, titanium, rare earth elements, cobalt, tantalum-niobium, feldspar, nickel, and copper, among others. The systematic integration of these datasets provides a robust framework for national and European-scale mineral intelligence. A comprehensive scientific and cartographic methodology was applied, combining official geological mapping, the tectonostratigraphic domains of the Iberian Massif, and shaded-relief terrain visualization. The mineral occurrences were classified according to deposit type, size, structural orientation, and mineralization source, allowing visualization of both spatial distribution and metallogenic context. Cartographic design followed established visual variables theory to convey multidimensional geological information while maintaining clarity at the chosen scale. The resulting map represents a significant advance in national mineral intelligence, supporting mineral exploration targeting, resource assessment, land-use planning, and evidence-based policy decision-making. It also contributes to pan-European datasets, promoting data harmonization and international comparability. Conceived as a dynamic product, the map is designed to be periodically updated in line with revisions to the EU Critical Raw Materials list. Overall, this work demonstrates the value of integrated geological and cartographic approaches in strengthening raw material supply knowledge at both national and European scales.