

The Development and Insights from Key Countries' Critical Minerals Agreements

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According to the European Union's definition, critical minerals, also known as critical raw materials, refer to raw materials that are of high economic importance to a country. Their high economic importance is due to their concentrated sources and lack of substitutes, which pose significant risks of supply chain disruptions.

The significance of critical minerals lies in three main characteristics: (1) They are closely linked to various industries, with nearly all supply chains relying on critical minerals. (2) Critical minerals are crucial for advanced technologies, as many high-tech products depend on multiple raw materials. For example, smartphones contain up to 50 different metals. (3) Critical minerals play a vital role in green technologies, such as solar panels, wind turbines, electric vehicles, and energy-efficient lighting.

China has dominated the processing and refining of critical minerals, and many Chinese companies engage in mining activities in Africa. Moreover, China not only possesses numerous critical mineral resources but also holds a dominant position in the manufacturing of end products like batteries, electric vehicles, and solar panels. For instance, China currently produces 77% of the world's car batteries.

As geopolitical issues, including deteriorating U.S.-China relations and the Russia-Ukraine conflict, have arisen, concerns about economic security have grown in Europe and the United States. In response to China's dominant position in the critical minerals processing sector, countries have implemented critical minerals policies, strengthened cooperation among allies, and improved supply chain resilience. In the U.S., a review report titled "Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth" highlighted excessive reliance on China for critical minerals and materials. In March 2022, the U.S. expanded domestic strategic and critical rare earth mining and production for large batteries used in automobiles, electric vehicles, and stationary storage. Internationally, the U.S. invited countries rich in natural minerals (primarily lithium, manganese, and cobalt) to form the Minerals Security Partnership (MSP) with the goal of reducing reliance on rare earth minerals from China.

Additionally, the U.S. passed the " Inflation Reduction Act," which includes tax credit provisions for electric vehicles that require a certain percentage of critical minerals to be mined and processed in the U.S. or any country with which the U.S. has an active FTA. This requirement prompted Japan and the European Union to actively sign Critical Minerals Agreements (CMA) with the U.S. On March 28, 2023, the U.S. and Japan signed a CMA based on the 2019 trade agreement, aiming to enhance cooperation in the critical minerals supply chain, especially for electric vehicle battery mineral supply. In the same month, the U.S. also initiated CMA negotiations with the European Union.

The current rivalry between the U.S. and China over critical minerals has been decades in the making, with China having invested significant efforts in developing renewable energy and critical minerals industries globally. In contrast, the U.S. and EU are just beginning to address these issues. Establishing new supply chains for critical minerals is expected to be a costly and challenging endeavor for Europe and the U.S. Considering this trend, Taiwan should continue to evaluate the security of its industrial chains and implement specific policies concerning critical minerals.

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