On March 16, 2023, the European Commission proposed a new law to ensure Europe has the critical raw materials it needs for its **green and digital transitions,** including targets for EU mining, refining, and recycling minerals.

"Today's communication aims to maximise our ability to access, process, refine, recycle and deploy critical raw materials," said trade commissioner Valdis Dombrovskis as he announced the proposal. "**Our goal is that, by 2030, our capacity should reach at least 10% of domestic demand for mining and extraction, at least 40% for processing and refining and at least 15% for recycling."**

Critical Raw Materials (CRMs) are specific minerals that are economically and strategically important for **modern economies**. Materials like bauxite, beryllium, and cobalt play an increasingly important role in the renewable energy, consumer electronics, and automotive sectors as Europe develops environmentally friendly technologies.

The European economy is highly dependent on critical raw materials imports. According to a study commissioned by Eurometaux, an industry group representing non-ferrous metal producers and recyclers, the EU alone will need 35 times more lithium and over three times more cobalt within the next twenty years.

Securing Global Supply Chains

When it comes to CRMs, the Union is heavily reliant on a few countries, leaving it vulnerable to disruptions, shortages, and price spikes. Notably, **China** dominates key raw materials supply chains. This makes the EU susceptible to potential problems, seen recently during the drop in Chinese magnesium production, which led to a shortage.

To decrease dependence on China, the EU will identify **"strategic projects"** along the supply chain, focusing on extraction, refining, processing, and recycling. It will also increase monitoring and improve coordination between raw material agencies in EU countries to identify which materials are needed.

"We have to avoid falling into the same dependency as with oil and gas," said European Commission President Ursula von der Leyen when she announced the plan for the law in 2022, pointing to planned partnerships with Chile, Mexico, Canada, New Zealand, Australia, and India.

According to Chris Heron, director of communication and public affairs at Eurometaux, the key here will be to future-proof Europe's supply chain and ensure that a lack of resources does not undermine its goals.

"Globally, the mining project pipeline isn't keeping pace with the speed of the energy transition. There are major concerns about the availability of some of these resources in

2030, and there's a big risk of bottlenecks or price increases," he warned.

Boosting Domestic Production of Critical Raw Materials

Aside from diversifying its exports, the EU's proposed initiative will also look at **boosting domestic production** of critical raw materials. According to Heron, Europe could meet over 20% of its mining needs and process above **40%** for specific raw materials. The law will therefore tap into this potential, addressing challenges like the lack of investment in mineral exploration and the lengthy permitting procedures for extraction, refining and recycling.

"Projects […] take a long time to come online in Europe. Over ten years for a new mine, but also a significant time to open a refinery or a recycling plant. There's a lot of bureaucracy involved," said Heron. He hopes the law will reduce permit bureaucracy while still maintaining strong environmental standards.

Public acceptance and financing are key to the EU's plan to boost domestic production. Moreover, according to Andre Wolf from Germany's Centre for European Policy, this initiative could create dedicated funds for exploration and mining projects in Europe and abroad. However, while groups like Eurometaux would welcome increased financial support for operating costs, Wolf warned against heavily subsidising and shielding upstream projects, like mining and refining.

Promoting Alternative Sources

Diversifying the sources of critical raw materials in Europe will also help secure its supply. Projects aimed at shifting away from mining are already underway, some even exploring material extraction from seawater brines.

One such project, Sea4Value, which the EU already funds, is looking at getting raw materials from brines after desalination, including magnesium and lithium. It is expected to set up a test project in Tenerife by the end of the year. Depending on its success, it could recover between two and three grams of magnesium per litre of brine, according to technical project manager Sandra Meca Fàbrega, who said that Sea4Value "will allow Europe to reduce its dependence on imported raw materials from overseas and increase the competitiveness of the EU's companies."

Another EU-funded project, **SALEMA,** is looking at recycling aluminium, silicon and magnesium for the electric automotive industry. Aluminium is particularly well-suited to this approach, as it can be reused virtually forever. However, even in this case, some of its alloying elements, namely magnesium and silicon, are overwhelmingly imported from Africa and China. Since aluminium composes up to 50% of the bodywork of today's electric vehicles, establishing a reliable supply chain is paramount to avoiding possible shortages.

The proposed regulation was presented on March 16 and will now be debated by EU

member states and the European Parliament. The bill comes alongside other laws, like the **Net-Zero** Industry Act, which is expected to boost EU industrial competitiveness.

Source: Earth