



FACT SHEET

Navigating the EU path in securing Critical Raw Materials for a sustainable future

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Key facts & figures

In the pursuit of a sustainable and technologically advanced future, the European Union (EU) faces a crucial challenge: securing a reliable supply of Critical Raw Materials (CRMs). These essential elements, often found in electronics, batteries, and clean energy technologies, are critical for the EU's transition to a greener and more digital economy. However, the EU's heavy reliance on imports from a handful of countries for these materials raises concerns about supply disruptions.

- ⚡ The EU relies heavily on imports to meet its demand for critical raw materials (CRMs), with **over 80% of its supply coming from foreign sources**.
- ⚡ In 2023, the EU imported **98% of its lithium, 88% of its cobalt, and 84% of its rare earth elements**, highlighting the extent of its dependence on foreign suppliers concentrated in politically unstable regions.
- ⚡ China is the world's leading producer of CRMs, accounting for **over 50% of global supply** in certain cases.
- ⚡ The EU has created a list of CRMs, which is updated regularly. The current list identifies **34 critical raw materials**, encompassing 67 individual materials.
- ⚡ The EU aims to have the capacity to **extract 10%, process 40%, and recycle 25% of its annual consumption of strategic raw materials by 2030** of its annual consumption of critical raw materials by 2030.

The European Green Deal

Growing demand, global dependencies: the geopolitics of sourcing CRMs

The European Green Deal stands as a landmark strategic plan, charting the course for the EU's green and digital future, with a **commitment to achieving net-zero emissions by 2050**. A key underpinning of this ambitious endeavor is the recognition of the crucial role played by CRMs in shaping the EU's technological landscape.

According to a Joint Research Centre's foresight study,¹ the EU is experiencing a significant surge in the demand for strategic and critical materials, present in **15 key technologies across five sectors: renewable energy, electromobility, energy-intensive industry, digital, and aerospace/defence**. This surge is accompanied by a heavy dependence on imports from third countries, spanning various stages of the value chain, with **the EU being solely dependent on one country for certain critical raw materials**.²

For instance, China provides 100% of the EU's supply of heavy rare earth elements, Turkey provides 98% of the EU's supply of boron and South Africa provides 71% of the EU's needs for platinum.

Critical Raw Materials Act

In response to these challenges, the EU has adopted in 2023 the European Critical Raw Materials Act ³ (CRM Act), a strategy to ensure a secure and sustainable supply of critical raw materials. The CRM Act aims to address the EU's dependence on imports by increasing the domestic production of CRMs, promoting recycling and circularity, and enhancing cooperation with international partners.

The CRM Act emerges as a linchpin within the Green Deal Industrial Plan given that the manufacturing of EU net-zero technologies is only possible if access to relevant critical raw materials is ensured across all stages of the value chain.

Strengthening self-reliance

To reduce dependence on third countries, the EU has set objectives for 2030,⁴ including increasing domestic extraction, processing, and recycling of critical raw materials, and diversifying external sources.

In particular, the EU aims to extract 10%, process 40%, and recycle 25% of its annual consumption of critical raw materials by 2030.⁵

The EU also aims to cap the contribution from any single third country to no more than 65% of the Union's annual consumption of each strategic raw material at any processing stage.

PASSENGER: charting a sustainable future

The EU is actively engaged in research aimed at CRM substitution, including efforts in advanced materials and alternative technologies, as well as innovations on the efficient use of materials. The PASSENGER project exemplifies the EU's commitment to a green and sustainable Europe. By developing alternatives to rare earth raw materials, particularly in the construction of permanent magnets, PASSENGER seeks to address two key challenges: substituting critical raw materials in the production of permanent magnets with European resources and scaling up these newly developed technologies from lab to market. PASSENGER will also provide an impact assessment of its developed technologies focusing on sustainability, technoeconomics, health and safety. The data generated will be made accessible via the RMIS for strategic assessment and policy development needs.

This data will include:

- Update of the Raw Materials Profile for permanent magnets;
- Material Flow Analysis for permanent magnets, industrial value chain, including supply chain, flows & stocks and a Sankey diagram;
- Contributions to the Criticality Assessment and Raw Materials factsheets;
- Recycling input rates.

Where can I learn more?

RMIS: a comprehensive resource management tool <https://rmis.jrc.ec.europa.eu>

The European Commission's Raw Materials Information System (RMIS) is a knowledge hub, providing insights about raw materials, analyses for supply and demand and future scenarios. Developed by DG-JRC and DG-Growth, the RMIS helps in shaping informed decisions across diverse sectors and technologies, contributing to the goals of the European Green Deal.

Further reading

European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Grohol, M., Veeh, C., Study on the critical raw materials for the EU 2023 – Final report, Publications Office of the European Union, 2023, <https://data.europa.eu/doi/10.2873/725585>

European Commission, Joint Research Centre, Carrara, S., Bobba, S., Blagoeva, D. et al., Supply chain analysis and material demand forecast in strategic technologies and sectors in the EU – A foresight study, Publications Office of the European Union, 2023, <https://data.europa.eu/doi/10.2760/386650>

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