A Research and Innovation Agenda for Raw Materials
The European Technology Platform on Sustainable Mineral Resources (ETP SMR) is an association of entities operating in the Mineral Resources R&I sector across the whole value chain officially recognised by the European Commission.
Members

- Raw Materials Industry – whole value chain
- Technology Providers
- Geological Surveys
- Academia and Research Institutes
- Industry & Stakeholder Associations
- International partners
Our Mission & Vision

- The **ETP SMR Mission** is to develop long-term European Minerals Industries Research and Innovation agendas and roadmaps for action at EU and national level.

- The **ETP SMR Vision** is to modernize and reshape the European Minerals Industries, a fundamental pillar of the European economy.
EU R&I coordination

Raw Materials

2000-2010 Lisbon strategy - ERA | EU2020 strategy/Juncker priorities | European Green Deal

FP5 | FP6 2002-2006 | FP7 2006-2013 | Horizon 2020 | FP9

2000
FP4 - EUROTHERM
FP5 - NESMI

1st SRIA
European Platform on Sustainable Mineral Resources
EU Raw materials initiative

2010
Last SRIA
Critical Raw Materials Act

2020
New SRIA

ERA-MIN I+II
ERA-MIN III (~2025)

EIP on Raw materials
SC5 Raw materials

EIT Raw Materials
ERMA

Modified from ppt-slide, EC-Commission, REMIX Mining Conference 2018
Update ambitions to match current needs (much has happened since latest version from 2013)

The World’s climate ambitions increase the need for metals and minerals and highlights also the need for climate neutral mining-, processing/refining-, and recycling operations

Changed geopolitical context

Advise the European Commission on relevant R&I needs for the mineral raw materials industries to enable secure and sustainable raw materials for the EU industries in line with the ambitions of the CRM Act

New version 2023
The World’s climate ambitions increase metal demand

Source: IEA 2021. The Role of Critical Minerals in Clean Energy Transitions
In EU, we consume about a quarter of the world's raw materials but produce only three percent.

Benchmarks for strategic raw materials in the CRM Act (by 2030):

• At least 10% of the EU's annual consumption for extraction,
• At least 40% of the EU's annual consumption for processing,
• At least 15% of the EU's annual consumption for recycling,
• Not more than 65% of the Union's annual consumption of each strategic raw material at any relevant stage of processing from a single third country.
- < 2% of investments in exploration are allocated to EU MS
- No new mines without exploration
- CRM Act – MS should draw up national programmes for exploration of critical raw materials
- Challenges – skill shortage, R&I to enable localization of deposits and new technologies to process and extract the CRM
- Need of collaboration with mining jurisdictions such as Canada and Australia
Continued government support for Australia’s minerals sector

Australia’s Critical Minerals Strategy Refresh 2023
Discussion paper priorities include:
- Achieving net zero emissions
- Growing Australia’s critical minerals sector, including onshore processing
- Supporting our regions and strong partnerships with Australia’s traditional custodians

Government Initiatives
- $1 billion Australian Government Value Adding in Resources Fund
- $2 billion Critical Minerals Facility
- $100 million Critical Minerals Development Program
- A$50.5m Australian Critical Minerals Research and Development Hub (2023–2026)
- Critical Minerals Mapping Initiative with US and Canada

First National Battery Strategy under development
ETP–SMR recommendation

- Maintaining and strengthening current initiatives such as ERA–MIN, and connecting these with similar research funding initiatives from like-minded partner regions such as Australia, Canada, and the US, but also EU partnership countries on raw materials.
New Strategic R&I Agenda with a focus on the industry being frontrunners in sustainability

- Safe and attractive workplaces
- Increased productivity and efficiency for competitiveness on global markets
- New technology to reach net zero carbon emissions and minimize environmental footprint
European mines contributing to the EU’s self-sufficiency in critical and strategic metals and minerals with low environmental- and climate footprints while being competitive on the global market (i.e. reaching the benchmarks set up in the CRM Act)

A wide social acceptance of mines

Fostering new and attractive workplaces where automation, digitalization and environmental ambitions have contributed to enhancing the appeal of this industry.

A metals and minerals industry that has developed into a hub and integral part of the circular economy.

European mining technologies and mining equipment that are in global demand and enhance climate and environmental performance to meet the UN Sustainable Development Goals

Policy making and decisions affecting the metals- and minerals industry are based on scientific evidence and barriers to industry development caused by other policies are addressed.
The ETP SMR has defined a set of **Strategic Ambitions** focusing on technology development and innovation in order to gain industrial leadership in resource sustainability and efficiency as well as climate-and-environmental goals, while at the same time increasing global market competitiveness.

For each Strategic Ambition **focus areas for research and innovation are identified** as well as **expected impact** if objectives are met.
Focus areas

- Exploration
- Mining
- Mineral processing
- Metallurgy & refining
- Recycling
- Environmental & social performance
- Mineral policy and monitoring

Suggestions on actions to enhance global partnerships
Mineral systems analysis and development of ore genetic models and geometallurgical models to build a broad understanding of Europe’s deposit types including those with critical raw materials.

Expected impacts:
- Impact: Increased knowledge base of Europe’s mineral deposits including critical raw materials.
- Increased attractiveness of exploration investments.

Development of climate neutral mining, quarrying technology and processes.

Expected impacts:
- Minimized environmental and climate impact of mining.
- Increased social acceptance.
Ongoing activities

Identifying KPI and setting measurable objectives

Suggestions to be further discussed:

➢ At least 10% of the EU's annual strategic raw material consumption domestically produced by 2030 (based on CRM Act)
➢ At least 15% of the EU's annual consumption from secondary sources by 2030
➢ Climate neutral mining by 2035 and processing by 2045
➢ Net positive biodiversity impact of mineral and metal production by 2030
➢ X% increase in the number of advanced level graduates by 2035
The European Union and the Member States cannot rest on its laurels if we want to secure raw materials for our industries.

R&I funding to the raw materials sector cannot fall behind (comparison with the US, Australia and Canada)

R&I gaps along the value chain hamper the build-up of robust value chains (regarding both lack of funding and lack of strong research environments)
Recommendations

- Dramatically **strengthen the mineral resource R&I sector**. Improve the EU’s current poor standing relative to strong mining jurisdictions in regard to investment in R&I and pre-competitive data, and other risk reduction.

- Encourage Member States to provide **national R&I funding possibilities**.

- Maintaining and strengthening current initiatives such as ERA-MIN, and **connecting these with similar research funding initiatives** from like-minded partner regions such as Australia, Canada, and the US, giving access to a stronger, broader, more mature R&I community, also expanding the possibilities for strengthening strategic CRM connections with such partners.

- **Create instruments and tools that support weak links** along the raw materials value chain. It is not possible to expect top quality and a diversity of applications in areas where the research community is weak.

- Both **basic and applied research** need to be funded so that industrial competitiveness is not lost.
Find out more:

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