



**ETP SMR**

# **European Technology Platform on Sustainable Mineral Resources**

[www.etpsmr.org](http://www.etpsmr.org)



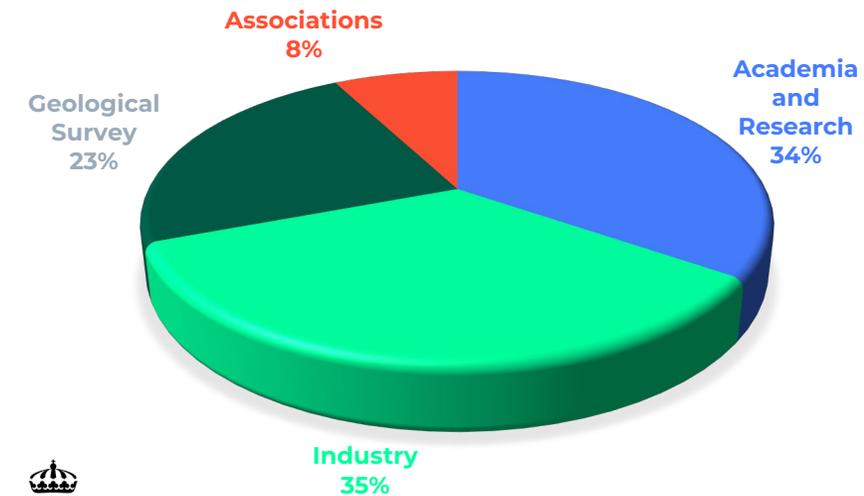


## About US

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.**

**Mission:** to develop long-term European Minerals Industries R&I agendas and roadmaps for action at both EU and national levels, fostering a resilient and sustainable raw materials sector.

## Our Members:



# How We Make a Difference



# Strategic Research & Innovation Agenda

## Strategic ambitions (areas)

- Exploration & resource characterization
- Mining
- Mineral processing
- Metallurgy/Metals recovery & Recycling
- Decarbonization of operations
- Forecast and substitution of raw materials
- Environmental performance
- Social performance
- Raw materials policy and monitoring
- Global partnerships



[https://www.etpsmr.org/?post\\_documents=etp-smr-strategic-research-and-innovation-agenda-2023](https://www.etpsmr.org/?post_documents=etp-smr-strategic-research-and-innovation-agenda-2023)



The **European Parliament's report** mentions ETP SMR's SRIA several times.



[https://www.europarl.europa.eu/R egData/etudes/STUD/2024/76284 8/EPRS\\_STU\(2024\)762848\\_EN.pdf](https://www.europarl.europa.eu/R egData/etudes/STUD/2024/76284 8/EPRS_STU(2024)762848_EN.pdf)

# ETP SMR Strategic Implementation Plan (SIP)

## How the SIP Delivered (November 2025) to EC DG GROW Adds Value:

- **Drives Implementation**

Transforms the 2023 ETP SMR Strategic Research & Innovation Agenda into a clear, actionable implementation roadmap.

- **Supports Targeted Funding**

Positions our priorities within the European Commission's SIP—linked to the CRMA communication—to maximise access to dedicated funding opportunities (e.g., Horizon Europe calls).

- **Aligns Goals with the Commission**

Ensures full alignment between our objectives and the European Commission's priorities on raw material acquisition, processing, and resilience.

- **Strengthens CRMA Relevance**

Maintains strong coherence with CRMA communications, ensuring our initiatives remain fully aligned with EU raw materials policy developments.



## Upcoming activity

- **Position paper on education and skills** should be ready to influence the Framework Program 10 (FP10) and Multiannual Financial Framework (MFF)
- **Position paper on the FP10 Competitiveness Fund**
- **EU Raw Materials Partnership (RAMP)**



# EU Co-funded Partnership on Raw Materials - Raw Materials Partnership (RAMP)

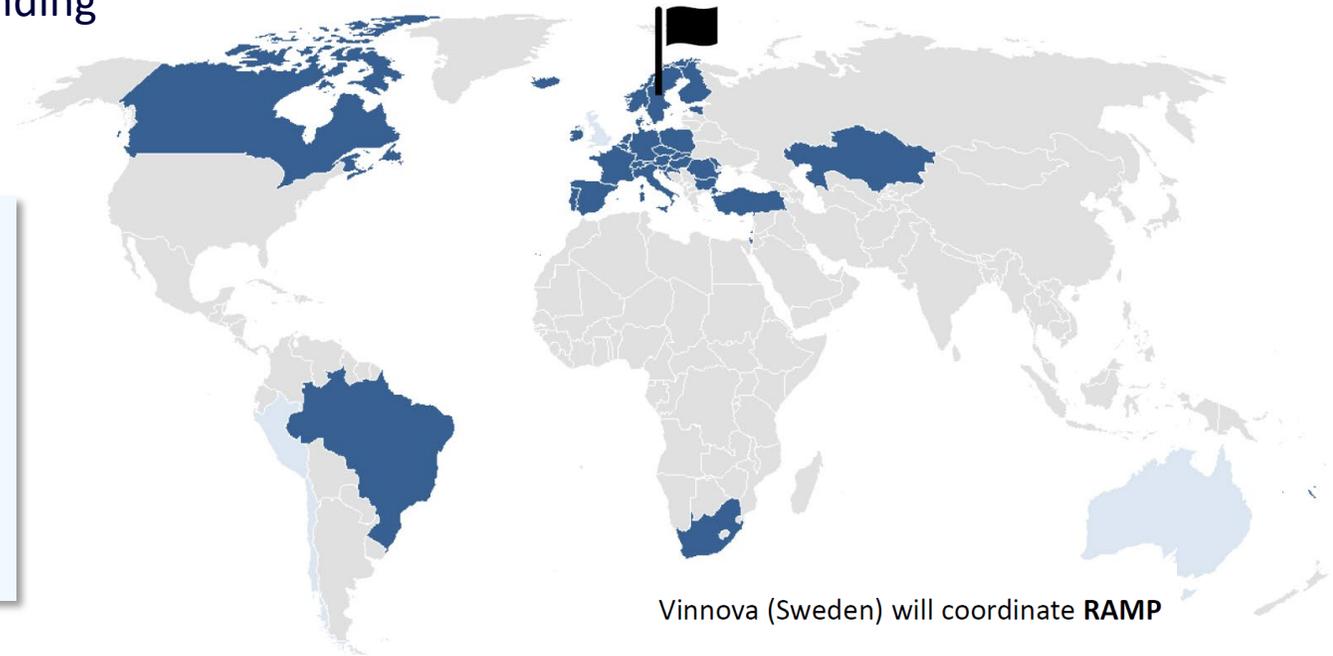
Proposal approved by EC in January 2026 - Grant Agreement & Consortium Agreement in preparation

Consortium of mainly funding agencies (54) from 32 countries  
Expected budget of at least €360M (requested EU contribution €116M)  
11 years duration with 7 annual transnational calls for funding

 Committed countries (32)  
 Observer countries (4)

## *Indicative timeline:*

- Q4 2025 & Q1 2026 > development and preparation of the first Joint Transnational Call for proposals
- Q1 & Q2 of 2026 > Grant Agreement signature and Partnership launch
- Q2 2026 > Launch of first Joint Transnational EU co-funded Call for Proposals
- Q2 2027 > Communication of results of the call
- Q3 & Q4 of 2027 > Start of selected R&I funded projects
- 2027 and beyond > annual call cycles and additional activities



Vinnova (Sweden) will coordinate **RAMP**

# ETP SMR in EU Co-funded Partnership on Raw Materials (RAMP)



## WP4 – Strategic Communication and Outreach

*Task 4.1: Overall communication strategy*



## WP5 – Strategic Actions for Collaboration and Cooperation

*Task 5.3: Mapping of and collaboration with the Raw Materials R&I Community*

*Task 5.4: Strategy for cooperation beyond the RAMP*



## WP6 – The CRM Act and Policy Support

*Task 6.1: Revision and Update of the SRIA (start around year 3 – 2028)*

*Task 6.2: Collaboration with policy makers and regulators*

*Task 6.3: Partnership support to CRM Act*

# Events



# Conferences and Events 2025



### ETP SMR Pitching Event

29 April 2025

Encourage international  
collaboration and partnership in  
Raw Materials R&I



### IndTEch2025 - Krakow

2-4 June 2025

Session: Raw Materials – New  
Sustainable Solutions to Societal  
Challenges in EU R&D



### EIS Final Event – Brussels

7 October 2025

ETP SMR president in the panel  
discussion “Encouraging  
exploration across mining regions  
in Europe’



### EmergeMAT - Bucharest

6 -7 October 2025

IMNR – ETP SMR co-organize  
event

# Raw Materials Week – EGS – ETP SMR Event



## Unlocking Europe's mineral raw materials potential: New data, new projects, new opportunities

Bridging Geoscience and Industry at Raw Materials Week 2025

Monday, 17 November 2025 | 10:00 - 18:30 | Marivaux Hotel, Brussels

### About the event

Geological Survey Organisations and the Mineral Resources Industry join forces at a unique side event, offering a platform to showcase European pre-competitive geoscience from geological surveys, promising exploration and mining projects, and industry-applied collaborative EU research. The goal: to accelerate Europe's raw materials discovery and responsible development through new data and projects, strategic dialogue, and cross-sectoral collaboration.

### Event Highlights

#### Strategic Dialogue

Connecting data and projects with investment to advance Europe's raw materials autonomy

#### Exploration and Mining in Europe: Success Stories

Company-led presentations on active projects and key milestones

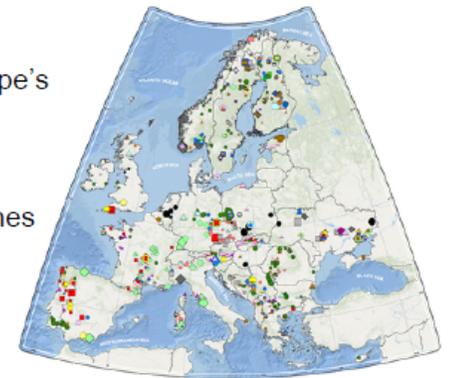
#### Building Public and Political Trust

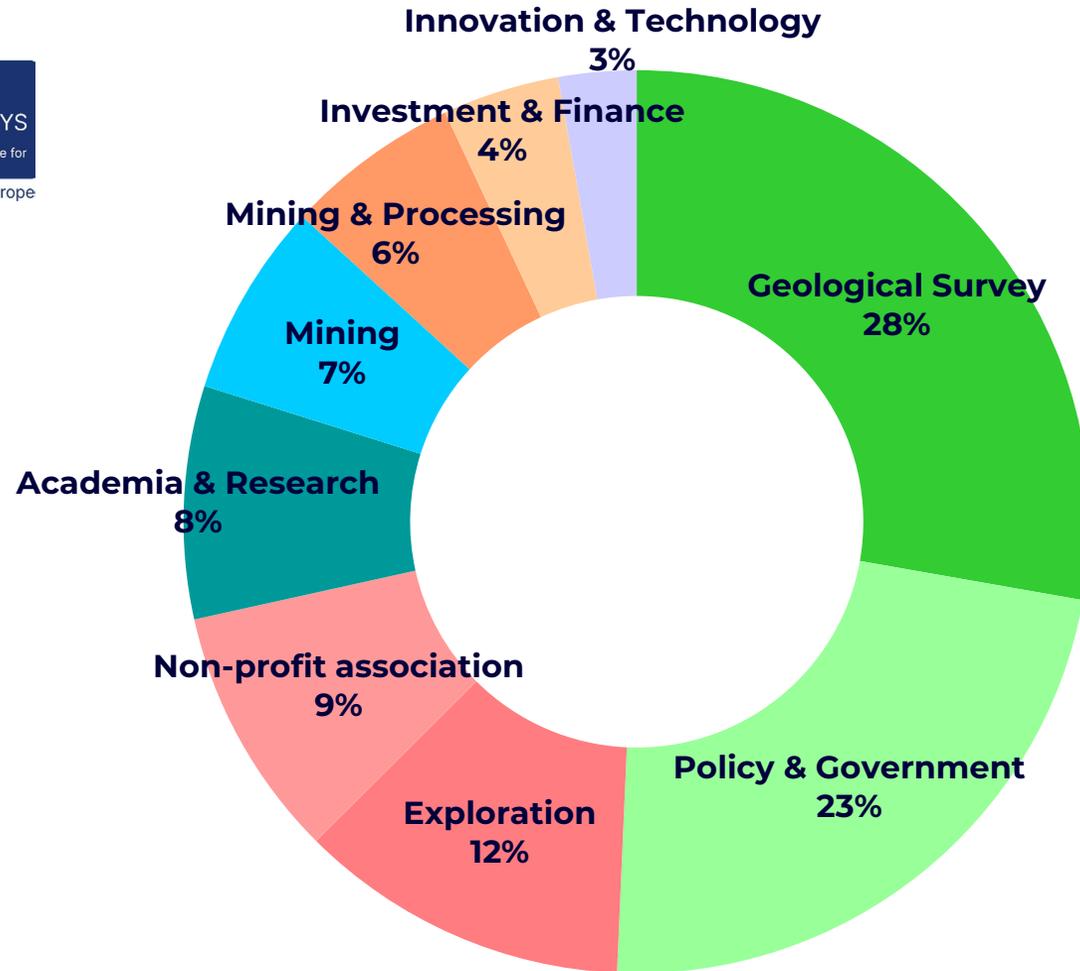
How to strengthen communication around exploration and mining?

#### New National and Pan-European pre-competitive geoscience data

Insights from EU-funded projects, including the GSEU project

*Further details can be found in the Preliminary Agenda on the next page.*





**More than 100 participants!**



Event summary and press release available on our website and on *Mining Magazine*.



<https://www.etpsmr.org/europes-mineral-future//>

<https://www.miningmagazine.com/technology/news-analysis/4523662/funding-europes-public-geoscience-focus>

## 8 Key Policy Messages

Europe must significantly increase public investment in geoscience

A strong European data ecosystem is essential for mineral security

Streamlined and predictable permitting is needed

Collaboration across stakeholders is a strategic requirement

Early-stage exploration must be supported by targeted policy instruments

Public trust and social acceptance are policy priorities

In short

**Policy must deliver money, data, permitting reform, collaboration, social acceptance, and long-term strategy if Europe is to secure its raw materials future**

Europe needs a long-term strategic vision for mineral resources

Europe should build resilience by strengthening domestic supply chains

Surveys Mentimeter during the event -  
Results available on our website:

<https://www.etpsmr.org/europes-mineral-future/>



**European Technology Platform  
on Sustainable Mineral Resources**

# Pitching Event

Explore international collaboration and partnership opportunities in  
**Raw Materials Research & Innovation**

**January 15, 2026**

**12 PM - 2 PM (UTC +1)**

**Marina Cabidoche**  
**EuroGeoSurveys - ETP SMR**  
Lead Scientific Officer - Executive Secretary

Discover ETP SMR: Mission, Community & Opportunities

**Daniel Cios**  
European Commission - DG GROW  
Policy Officer, raw materials specialist

Horizon Europe 2026-2027 Opportunities

**Tobias Kampmann**  
Vinnova  
Programme Manager for Industrial Technologies and RAMP Coordinator

Raw Materials Partnership for the Green and Digital Transition (RAMP)

**Ignacio Herraiz**  
Tecnicas Reunidas  
Business Development Engineer

Tecnicas Reunidas as technology provider: Hydrometallurgical solutions for critical raw materials recovery. REE recovery using Solvent Extraction

**Dr. Konstantinos Laskaridis**  
Hellenic Survey of Geology  
Head of Mineral Resources Department

The Hellenic Survey of Geology and Mineral Exploration and the National Programs for CRM

**Maria Thornhill & Rolf Arne Kleiv**  
Norwegian University of Science and Technology  
Associate Professor & Professor – Department of Geoscience

Collaboration on Sustainable Mineral Production – Building on NTNU's current momentum

**Philippe Giaro**  
University of Liège - GeMMe  
Senior Research Officer

ULiège-GeMMe: Georesources, Mineral Engineering & Extractive Metallurgy / Metals for future generations

**Dr. Laura Quijano**  
Iberian Sustainable Mining Cluster (ISMC)  
Technical and Operational Coordinator

PERMANET: Europe's Collaborative Hubs for Industrial Impact on Rare Earth Magnet Extraction & Processing

**51 participants from 21 countries!**



The Geological Surveys of Europe



**ETP SMR**

**SUNDAY, 1 MARCH 2026**

**14:00 - 18:00**

Dedicated session at



**2026**



# Shape the Future of Raw Materials!



**ETP SMR**

**Connect & Collaborate**

**Gain EU Recognition**

**Drive Innovation**

**Strategic Partnerships**

**Stay Informed & Influential**

**Exclusive Network**

**Amplify Your Impact**

## **Join Us!**

Contact the Secretariat:  
[info@eurogeosurveys.org](mailto:info@eurogeosurveys.org)

*Follow us on*

**in**

Membership Brochure [HERE](#)



**ETP SMR**

# **Strategic Research and Innovation Agenda - Summary**



# Need for Research and Innovation in Exploration



- **No new mines without exploration**
- **< 2% of investments in exploration** are allocated to **EU Member States**
- **CRM Act – Member States** shall draw up **national exploration programmes**
- Mineral potential - **Europe is underexplored**

### Challenges

- **Skills shortage**
- **Need:**
  - **R&I to discover** and **understand ore deposits** in Europe
  - **Technology to process, extract** and **recycle CRM/SRM**
  - **Collaboration** with strong exploration & mining jurisdiction



### R&I – Mineral potential

- ✓ Strengthen efforts to **improve the EU’s exploration capabilities by linking R&I actions to the Member States Exploration Programs** (actions needed now, however long term effects)
- ✓ **Improved knowledge base** on the **vast variety of European ore types** (not limited to MS Exploration Programs) and **cost-effective exploration technology**.

### R&I – Policy

- ✓ **Examination of policy and legislative barriers to the EU’s ability to increase domestic production from both primary and secondary sources.**

# Need for Research and Innovation in Mineral Processing



**Developed**
**Improved**
**New**
**Efficient**
**Methods**
**Technologies**

### Traceability and industry integration

- **Global Passport** - traceability through the value chain



### Process optimization

- **Comminution technologies**
  - ✓ Measurement technology
  - ✓ Models for optimizing design
  - ✓ Control of comminution and separation circuits
- **Efficient wet and dry separation processes / technologies**
  - ✓ Treating polymetallic and complex ores
  - ✓ Removing impurities
  - ✓ Improving recovery of low-grade
- **Geometallurgical modelling**
  - ✓ Process mineralogy
  - ✓ Analytics for resources characterization
  - ✓ Economical optimisation
  - ✓ Ore traceability
- **New and smart process design and methods**
- **Model-predictive control concepts and data-driven models** (digital twins)



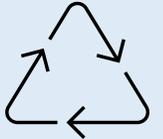
### Environmental performance

- **Flotation reagents** (effects on downstream processing, water recirculation, and health and safety)
- **Water treatment methods**
- **Feasibility of dry stacking in wet climates**



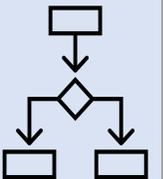
### Recycling and secondary feed streams

- Design for **end-of-life products**
- **Automation**
  - ✓ Identification of the source
  - ✓ Dismantling and separation



### System integration

- **Digitised processing plants** (advanced online characterization, sensor technology, and data analytics)
- **Integration with upstream and downstream processes** (geology/mining and smelter processes)
- **Coupling of business sectors and development of new business models**



# What are the expected impacts?



Credit: Boliden

## Reduced:

- ✓ **energy consumption**
- ✓ **losses of valuable minerals** (including CRMs)
- ✓ **cost** (less energy consumption and wear)

## Increased:

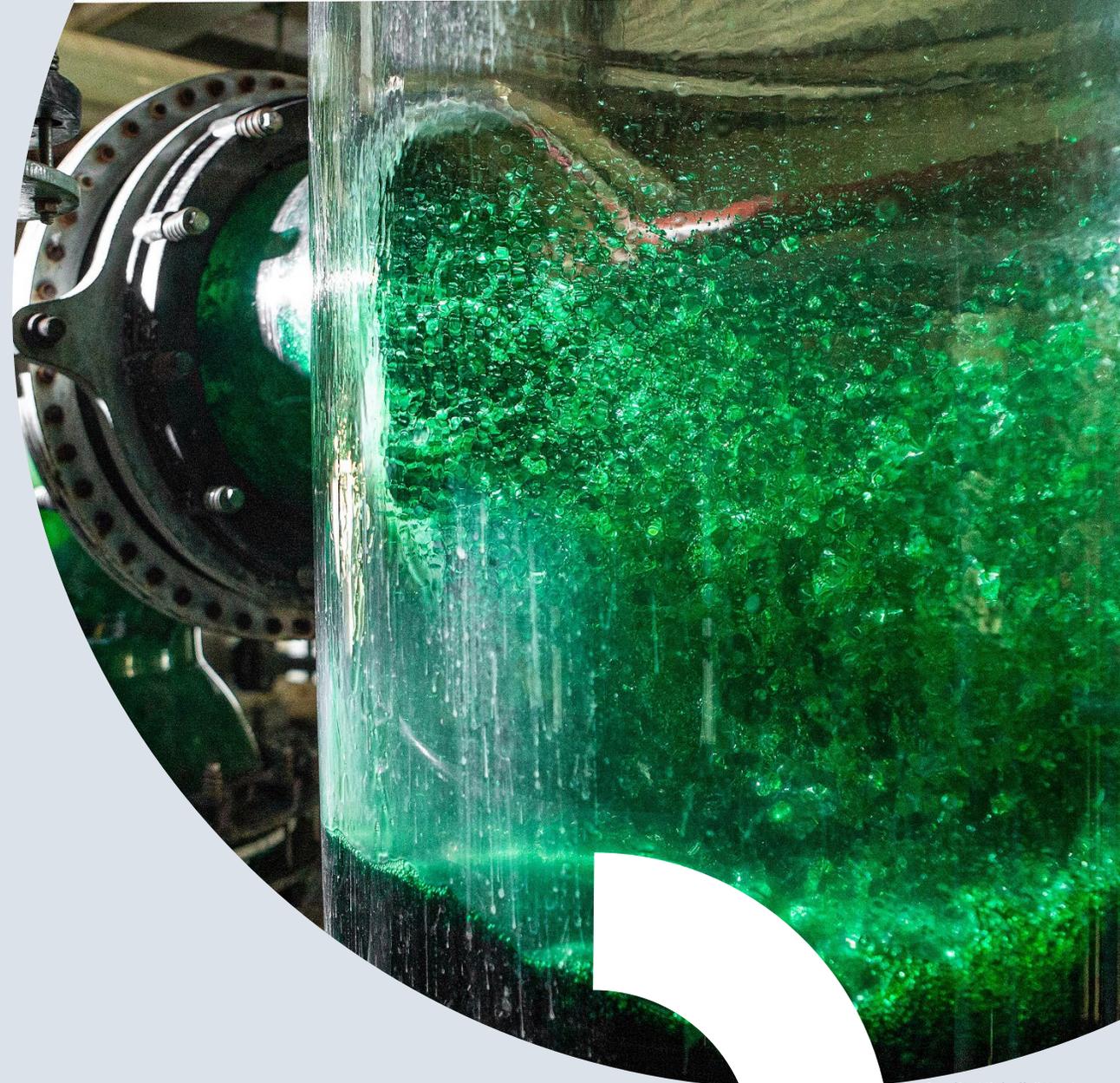
- ✓ **revenue** through **cost-effective production of by-products**
- ✓ **security of supply** of raw materials

## Improved:

- ✓ **environmental performance** (e.g., climate impact, water management, emissions, tailings)
- ✓ **social acceptance of mineral processing plants** due to higher resource efficiency, lower emissions, and less waste

## Developed intelligent production systems

# Need for Research and Innovation in Metallurgy/Metals recovery & Recycling



### New materials for emerging technologies (procurement/production/recycling)

### Traceability and industry integration

- **EU's digital product passport** in the recycling industry for circular economy

### Decarbonisation

- **Climate neutral processing & refining technologies**  
(incl. use of reagents with no carbon footprint)
- **Alternative carbon free reduction agents**  
(technically & economically viable)
- **Decarbonisation of energy intensive** metallurgical processes

### Environmental performance

- **Methods** for **optimized use** of **energy & water**
- **Development** of **technologies** with **low atmospheric & water emissions** with **minimal impact on the environment**

### Process- and resource optimisation (primary- and secondary resources)

- **Process design optimization** using **thermodynamic data**, considering **efficiency in the process route** (new measurement technology, process modelling & automation)
- **Knowledge & technology** to **increase recovery yields** and **extract additional elements** (primary/secondary materials streams )
- **Technology** to ensure the **quality of by-products for use in new applications** (e.g., process control of slag properties / slag composition)
- **Methods & business models** to **use secondary materials or side streams** from **internal processes or across business sectors** to enhance efficiency and recovery of metals.
- **Mechanical & chemical processing** of **complex products** with minimal dissipation of CRMs.
- **Reuse** (compatibility: logistics / product optimization / reintegration into life cycle / safety / efficiency)



## What are the expected impacts?

- Sustainable & climate neutral **mineral / metal supply**
- Optimized processes for **competitive & sustainable processing / refining capacity**
- Increased:
  - ✓ **resource efficiency** by **increased minerals & metal recovery** (primary/ secondary)
  - ✓ **security of supply** of raw materials
- Development:
  - ✓ **circular economy hub in the EU** (cross-sectoral process streams)
  - ✓ **markets for by-products**
- Maintain energy intensive industries in Europe
- Efficient energy & water use
- Reduced landfill/tailings
- Waste:
  - ✓ **inventories** of depositories and dumps (municipal landfills, domestic waste streams)
  - ✓ **improvement** of their **use** (redirection of waste streams)

# Frontrunners in sustainability



# Climate neutral and circular metals systems



Cobalt recycling (credit: Nickelhütte Aue)

**Accelerate technological developments:** mineral processing, metal production & recycling to **stay competitive** while adopting to **climate neutral processes** (goal: **net zero GHG emissions by 2045**)

**CRMA targets by 2030:** R&I to develop **economically and environmentally viable processes for extracting SRM/CRMs as by-products** from existing mines/waste streams/EOL products, or from advanced exploration projects.

➔ **Access to piloting facilities is key**

**Long term:** **Metals recovery from new exploration targets and MS Exploration Programs** (increased knowledge base will attract investments)

# Environmental & social performance

High environmental and social performance are key for achieving Social License to Operate and to attract a skilled work force

Examples of R&I needs on both technical- and social science:

- Water management
- Dam safety and tailings management
- Air emissions management
- Waste management
- Biodiversity status
- Corporate Social Responsibility
- Management of land-use conflict
- Gender equality and diversity
- Safety and needs of workers
- Non-destructive exploration technologies



Wetland restoration (Credit: Kaunis Iron)



## **European Technology Platform on Sustainable Mineral Resources**

Interested in joining? Visit our website ([www.etpsmr.org](http://www.etpsmr.org)) and contact the Secretariat for more information.

Membership Brochure [HERE](#)

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Access to the SRIA

