

Towards responsible mining and processing of energy-transition metals in Europe: A mere pipedream or a realistic opportunity?
 Clustering event linked to the *International Circular Hydrometallurgy Symposium* (ICHS 2024)
Martin's Patershof - Mechelen, Belgium, 9/9/2024

Timetable

Session 1: Projects Presentation and the Critical Raw Material Act 9.00-10.30

<i>Topic</i>	<i>Speaker</i>
The ENICON & CICERO approach towards SLO	Anders Sand <i>(Boliden Mineral AB)</i>
The EXCEED & LITHOS approach towards SLO: the Barroso Lithium project	Emanuel Proença <i>(Savannah Resources)</i>
The AVANTIS approach towards SLO	Kostas Komnitsas <i>(Technical University of Crete)</i>
The Critical Raw Material Act (CRMA) and the role of the Strategic Projects	Robert Tomas <i>(EC, DG GROW)</i>

Coffee Break

Session 2 Round Table 11.00-12.15

Moderator: Peter Tom Jones (KU Leuven Institute for Sustainable Metals and Minerals (SIM²))

Participants	Robert Tomas <i>(EC, DG GROW)</i>
	Toni Eerola <i>(GTK)</i>
	Anders Sand <i>(Boliden Mineral AB)</i>
	Antoine Oger <i>(Institute for European Environmental Policy - IEEP)</i>
	Wies Willems <i>(Broederlijk Delen)</i>

Organised by:



Horizon Europe LITHOS
 Cost-effective processing and refining of lithium into lithium hydroxide from strategic European multi-mineral lithium hard-rock projects



Horizon Europe ENICON
 Sustainable processing of Europe's low grade sulphidic and lateritic Ni/Co ores and tailings into battery grade metals



Horizon Europe CICERO
 MSA-based circular hydrometallurgy for sustainable, cost-effective production of NMC cathode materials



Horizon Europe EXCEED
 Cost-effective, sustainable and responsible extraction routes for recovering distinct critical metals and industrial minerals as by-products from key European hard-rock lithium projects



Horizon Europe AVANTIS
 Sustainable, Decarbonised Co-Extraction Of Vanadium And Titanium Minerals From Europe's Low-Grade Vanadium-Bearing Titanomagnetite Deposits

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The context

Critical Raw Materials are essential in the modern-day economy, for renewable energy technologies, electric vehicles, long-duration energy storage (LDES) and digitalisation, allowing our society to meet the Sustainable Development Goals (SDGs).¹

The European Commission's (EC) Critical Raw Materials Act (CRMA) sets mining, processing and recycling benchmarks to reduce Europe's dependency on just a few third countries for many of its strategic/critical raw materials (SRMs/CRMs). The CRMA's main objective is secure a resilient, sustainable and ethical supply of CRMs for the transition to a net-zero economy.

However, Europe's current CRM dependency problem is huge. For example, Europe is almost 100% reliant on imports of lithium for the Li-ion batteries that are central to decarbonising the energy and mobility sectors. On the other hand, Europe hosts 27 Li hard-rock deposits, representing vast lithium resources. However, the European potential to explore and mine its resources and produce strategic and critical elements, such as lithium, remains largely untouched, partly due to a reluctant attitude towards mining in several European countries. Most of the disputes among companies and various stakeholders occur as a result of conflicting land uses or due to an advanced risk for affecting the environment, the communities and the ecosystems in the area of concern.

The social license to operate (SLO) / public acceptance (PA)² is an informal social contract to improve the relations between the mining industry and the society. A successful social contract is a prerequisite for the implementation of a socially responsible exploration / mining project. During the last years, mining companies operating in Europe have taken many important initiatives to improve their performance and to promote stakeholder engagement and company-community relationships. They also use new low-impact mineral exploration and mining technologies, that address health, safety and environmental issues and have competitive advantages over the traditional ones. Intense research activities are carried out for the promotion of breakthrough technological innovation in exploration, mining, beneficiation, metallurgy and waste valorisation as well as optimisation of water management in the broader mining industry.

This proposed approach is in line with the United Nations Economic Commission for Europe (UNECE) Framework for CRMs that involves, among others, the establishment of a comprehensive Socio-Environmental-Economic Contract to Operate, integrating impacts on societies and communities, the need for a just transition, climate change mitigation and adaptation, and environmental stewardship.

In this event, which is organised before the start of the *International Circular Hydrometallurgy Symposium* (ICHS 2024), a round-table discussion with representatives from different entities (EU, academia, research institutions, industry, SMEs, NGOs etc.) will be held to shed light on SLO issues (in particular with respect to the CRMA target to endorse and fast-track "Strategic Projects"³), inform society about the requirements of the green energy transition, the responsibility of the mining industry to manage its impacts and identify the most critical aspects to fundamentally transform society's trust in mining.

¹ Cf. Komnitsas, K. &, Eerola, T. Public Acceptance and Responsible Mining towards Energy Transition, 11th International Conference on Sustainable Development in the Minerals Industry – SDIMI, Torino, Italy, July 9-11, 2024.

² These two concepts are questioned by many environmental organisations who are critical towards mining.

³ Strategic Projects should "increase EU capacity to extract, process and recycle strategic raw materials and diversify EU supplies from third countries. Strategic projects make a meaningful contribution to the security of the Union's supply of strategic raw materials. They are or will become technically feasible within a reasonable timeframe, showing expected production volumes, and implemented sustainably with a sufficient estimated confidence level. The Commission considers strategic projects of public interest due to their importance in ensuring the security of the supply of strategic raw materials and safeguarding the functioning of the internal market." (from: https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials/strategic-projects-under-crma_en)