

Demonstration of battery metals recovery from primary and secondary resources through a Sustainable processing methodology.

The European Union has underexploited potential to produce **critical raw materials (CRM)** and special metals, as stated in the Study on the EU's list of Critical Raw Materials (2020).

Concretely, the **battery sector** is considered as a key strategic sector for the EU due to the increased use of batteries in different important sectors such as electric mobility.

Thus, METALLICO presents a new opportunity for the European Union. It is composed by an strategic consortium along the value chain, including mining and industrial sites with **primary** and **secondary sources** of critical and battery metals (**Li, Co, Cu, Mn, Ni**); experienced partners to pilot novel processes for producing battery-grade materials based on previous projects and activities; industrial and SME end-users in the battery, cement, paint, and ceramic sectors; and partners to demonstrate the social-license-to-operate (including the support of government bodies), sustainability and commercial chances that the solution represents.

Worldwide, these battery metals are predominantly mined in Chile, Australia, South Africa, China, and The Democratic Republic of Congo, representing a high risk for the EU in terms of supply shortage. For example, in the case of Li, the EU import reliance is 87% for lithium concentrates and 100% for refined compounds as there is no domestic refining.

METALLICO includes 4 cases studies in the EU to recover: battery-grade Li_2CO_3 from a primary spodumene-lepidolite deposit (LIT); Co concentrates and battery-grade CoSO_4 from a mine secondary resource (CLC); and Cu, Co, Mn, and Ni concentrates from metallurgical slag from a Pb refining company (KHGM) and secondary mine tailings (TMM).

Upscaling of sustainable and innovative upstream and downstream processes will demonstrate the techno-economic recovery and production of these critical and important metals for the EU. Under the scientific responsibility of Prof. Blengini, the role of DIATI consists in developing and testing the concept of Net-Zero-Carbon as applied to innovative mineral processing, as well as conducting LCA and sLCA.



Funded by the
European Union

PROJECT DURATION

01/01/2023 – 31/12/2026 (48 months)

WEBSITE E SOCIAL MEDIA

<https://cordis.europa.eu/project/id/101091682>



PARTNERS

- Idener Research & Development Agrupacion de Interes Economic (ES), Coordinador
- Technische Universitaet Bergakademie Freiberg (DE)
- Universitat Politecnica de Catalunya (ES)
- Siec Badawcza Lukasiewicz - Instytut Metali Niezestanych (PL)
- Teknologian Tutkimuskeskus VTT OY (FI)
- Fraunhofer Gesellschaft zur Forderung der Angewandten Forschung EV (DE)
- G.E.O.S. Ingenieurgesellschaft MBH (DE)
- Cementos La Cruz, s.l. (ES)
- Euroatomizado SA (ES)
- Glencore Nikkelverk AS (NO)
- Centro de Investigacion Cooperativa de Energias Alternativas Fundacion, CIC Energigune Fundazioa (ES)
- Cobre Las Cruces SA (ES)
- CETAQUA, Centro Tecnologico del Agua, Fundacion privada (ES)
- Tharsis Mining Sociedad Limitada (ES)
- Asistencias Tecnicas Clave SL (ES)
- Radical Innovations Group AB (FI)
- Dechema Gesellschaft fur Chemischetechnik und Biotechnologie (DE)
- Geniki Metalleutiki kai metallourgiki anonimi etairia - (general mining and metallurgical company s.a.) (EL)

FUNDING INSTRUMENT

HORIZON-CL4-2022-RESILIENCE-01-07

BUDGET

Estimated Project Cost: € 13,033,408.00

Requested EU Contribution: € 11,798,783.25

DIATI: € 636 750.00

POLITO and DIATI's role:

Politecnico di Torino – DIATI is a partner of the Consortium, under the scientific responsibility of **Prof. G.A. Blengini**