



Biomining of tailings/Ind. Wastes to recover CRMA metals



Project Idea	Using our proprietary liquefaction-based technology, we can ensure that 100% of industrial waste/residue granules are surrounded by the maximum number of cells in minutes, using only 15-25% v/v of bioleaching agent = a 95% reduction in operating costs producing low carbon metals!.
Organization name, town and country	SmartDry Liquefaction, Rio Maior, Portugal
Addressed topic(s)	HORIZON-CL4-2026-01-MAT-PROD-12 - Technologies for innovative extraction of critical raw materials (RIA) Open strategic autonomy in Raw Materials

SmartDry Liquefaction

- Hardtech startup;
- TRL 5, lab. Tested mechanical solutions for the mining sector;
 - Dewatering;
 - Pre-Inoculation for bioleaching;
 - Inverted Chemical Leaching;
 - Mineral Separation for ultrafine (<150 microns) metal grains from tailings



- CBE-JU, Raw Materials and EUREKA Project submission, no grants yet.

Biomining of Tailings/Ind. Wastes

- **Objective:**
Deploy an ultra-low-OPEX, closed-loop biohydrometallurgical process to recover critical raw materials (e.g., Cu, V, REEs) from legacy mine tailings—turning environmental liabilities into circular resources.
- **Core Innovation – SmartDry Pre-Inoculation:**
- **95% lower OPEX** vs. conventional bioleaching
- **15–25% (v/w)** lixiviant use via mechanical liquefaction
- **Seeding tailings with PLS and full PLS recovery** in closed-loop system → zero effluent
- **Grain-size agnostic:** handles ultrafines (<50 µm) to 6 mm
- **Rapid inoculation** (<10 min) with 100% grain coverage
- **ESG Impact:**
Eliminates acid mine drainage at source
Dry-stackable residues (no dams)
Carbon-negative potential via co-sequestration (CCS into tailings)
Restores land to pre-mining condition
- **Target Sites:**
Portugal (abandoned mines), Estonia (black shale tailings), Sweden & other EU countries (CRMA list metals rich tailings)
- **Pathway:**
TRL 5 → TRL 7 via EU-funded PoC (EIT RawMaterials / Horizon Europe) with academic & industrial partners

- Mining Equipment / Metalmechanical Manufacturers
- Metals offtakers
- Biotech Labs Mobile Units
- Metals Recovery / Refining Partners
- Environmental Remediation & Monitoring Experts
- Geological/Tailings & Resource Assessment Specialists
- ESG & Life Cycle Assessment (LCA) Experts
- Legal / Regulatory Advisors (National Level)
- Circular Economy / Industrial Symbiosis Platforms
- Digital/AI Partner
- Local Community Representatives / NGOs

Contact details

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B2Match profile

<https://www.b2match.com/e/horizon-europe-industry-brokerage-2026/participants/3348981>

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