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RAWMINA Newsletter N°1



19+
Partners

9+
Countries

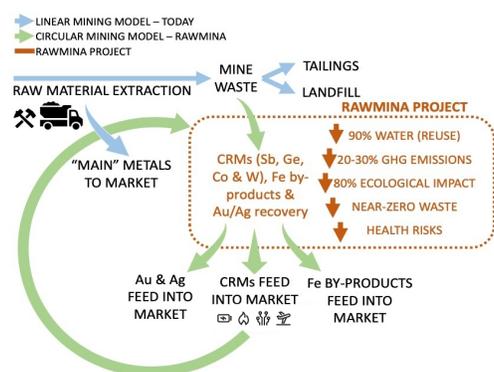
42+
Months

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Introduction to RAWMINA:

Securing access to a stable supply of Raw Materials:

Critical Raw materials (CRMs) are crucial to Europe's economy. They form a strong industrial base, producing a broad range of goods and applications used in everyday life and modern technologies. CRMs are needed for significant economic and strategic sectors, as for example manufacturing batteries, construction tools, sensors and electronic devices, medical devices, metals, automotive, defence or renewable energy sectors. However, unreliable supply and difficult substitution to CRMs is a growing concern within the EU and across the globe. Currently, the EU relies on the rest of the world for many CRMs such as Antimony (Sb, 100% imported), Cobalt (Co, 32% imported), Germanium (Ge, 64% imported) and Tungsten (W, 44% imported). European reserves and current recycling rates are low (2% for Ge as an example), and recycling rates are substantially insufficient to meet demand.



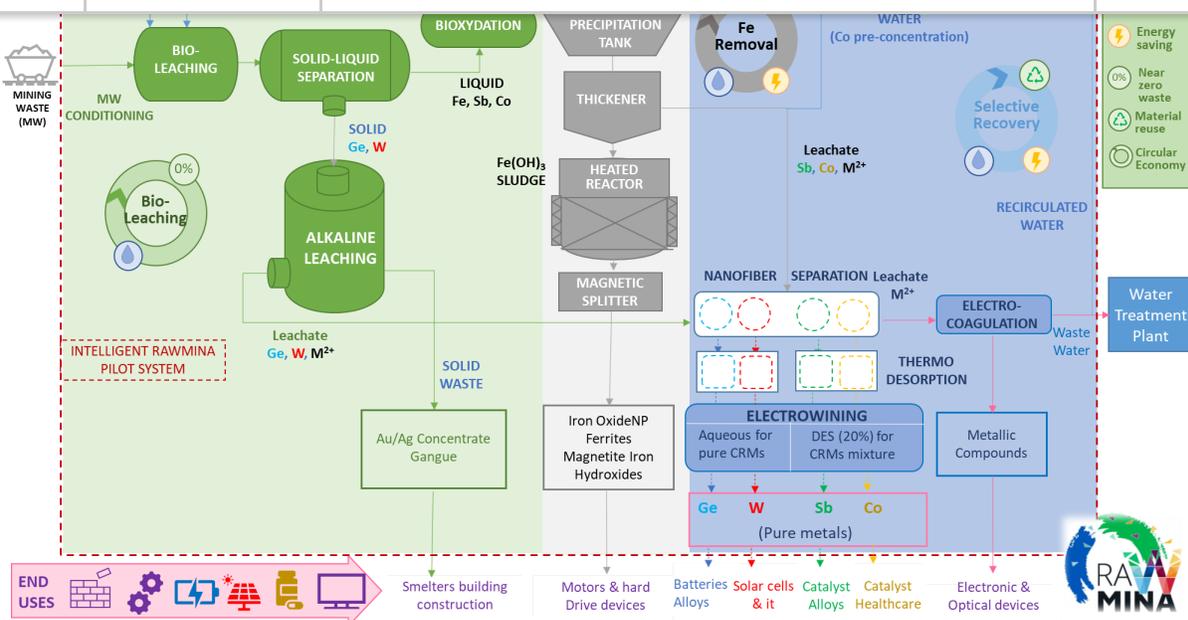
RAWMINA will boost the reduction of CRM import dependency by demonstrating significantly improved yields in an innovative energy-efficient and water-efficient continuous pilot system for processing Mine Waste (MW) to recover marketable CRMs (Co, Sb, Ge and W), Fe by-products and Au/Ag. RAWMINA will integrate bioleaching, nano-based materials and electrochemical process into a circular and close to zero waste solution.

Aim: RAWMINA aims to develop and to demonstrate the RAWMINA pilot system: an industrially scalable and flexible innovative pilot in continuous operation for MW valorisation, achieving 95 % recovery rate and 95 % selectivity for CRMs (Co, Sb, Ge, W), and 80-90 % recovery rate and 95 % selectivity for Gold (Au), Silver (Ag) and Iron (Fe) based high-value products, whilst reutilising and includes an efficient, circular, and robust process control by an end-to-end Intelligent Management System.

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Summary of Project Progress:

RAWMINA project Work Packages (WP)

WP1: Mining waste conditioning

WP2: Bioleaching process for metal extraction

WP3: Iron removal process

WP4: Novel materials and processes for selective recovery

WP5: Process simulation, integration, and pilot design

WP6: System engineering & Demonstration

WP7: Sustainability assessment and social innovation

WP8: Exploitation & Circular Business plan

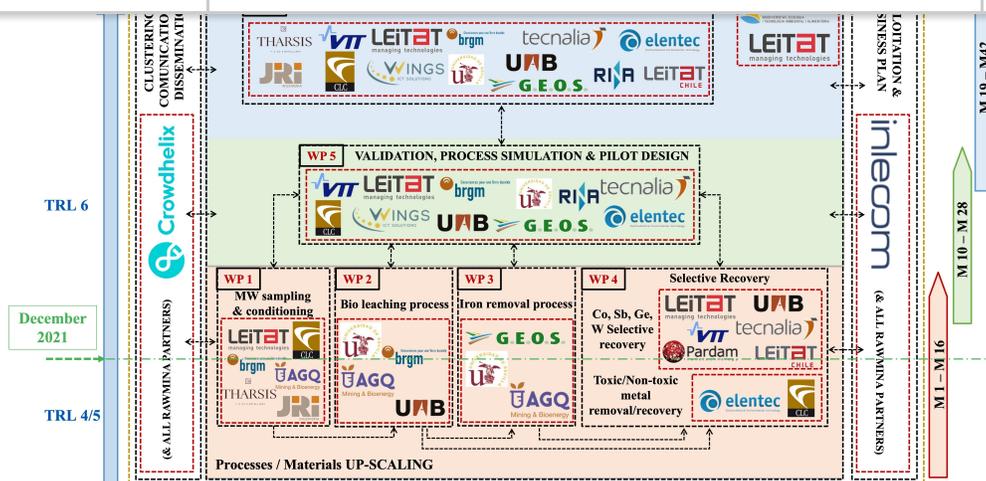
WP9: Dissemination & Communication

WP10: Coordination & Management

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WP1: 8 Samples have been collected in the very beginning of the project and after a preliminary characterisation, 4 Mine Waste (MW) samples for the project development have been selected and collected (CLC-tailings, CLC-gossan, Tharsis, COVAS-tailings). MW samples are under characterization to mineralogical composition and the amount of the target CRMs. MWs are also under preparation and conditioning) for lab- and bench-scale experiments.

WP2: Partners are focused in the optimization of the metal extraction procedures by bio-leaching means with the aim to achieve high leaching yields in continuous process. First Pregnant Leaching Solutions (PLS) have been generated and shipped to be evaluated in WP3 & 4. Solid residues are under evaluation by alkaline leaching.

WP3: Partners are focused on optimizing the innovative iron removal process to achieve up to 90% recovery and conversion of iron present in the PLS obtained in WP2.

WP4: Final selection of the Nanofibrous Composites Materials with high selectivity and recovery rate will be confirmed soon. Innovative thermo-desorption process is being defined considering the experimental condition for the metals recovery. Finally, Electrowinning has been evaluated to recover Co and Sb in aqueous solutions and on-going work is focused on the recovery of W and Ge from DES solutions.

WP7: Several questionnaires are being generated for the partners in WP1-4 to collect relevant information for the safety assessment.

WP8: Initial market research, technology assessment and partners interaction research has been performed

WP9: The templates and logo are ready to be used in the dissemination actions. The website and social media profiles have been created. The first press release has been published. The RAW MINERALS Helix has been developed and launched.

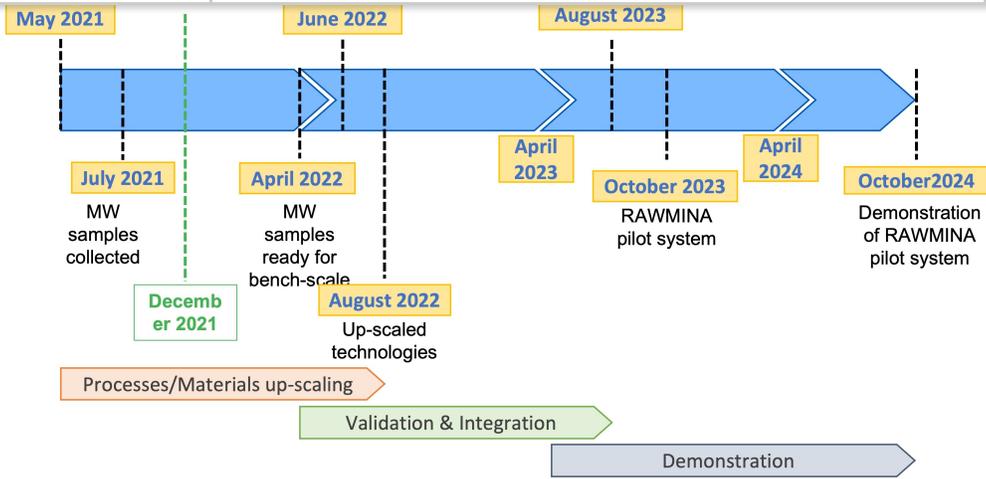
Next Steps:

Future plans for each work package (WP) in the project:

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Raw Materials Helix:

Join the Raw Minerals Helix!

The Raw Minerals Helix is an international Open Innovation community of specialists in Critical Raw Materials (CRMs) recovery and related disciplines. This online cluster was launched as a focus for impact and dissemination services in support of the RAWMINA project's ambition to foster a truly collaborative ecosystem.

Researchers, industry actors, ethics specialists, policy makers, civil society, end users, as well as participants of other relevant projects and relevant actors across the world are invited to join the Helix. Are you also keen to increase the circular economy in the mining sector? Exchange and generate knowledge, technology and best practices? Keep up-to-date with relevant news? Then you are welcome to join us here - just select "Raw Minerals Helix - RAWMINA Project" in the dropdown menu. If anything is unclear, contact the Crowdhelix team at rawmina@crowdhelix.com.



Events:

Past Events:

Tech Transfer Virtual Forum: Ecosystem Transformation Projects. June 30th, 2021.

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An open and effective dialogue with the main scientific technical players on the greatest challenges facing industry. Diego Morillo made a presentation where the general idea of the RAWMINA project, main objectives and future actions were presented.

UNPRECEDENTED | VIRTUAL FORUM

#TECHTRANSFER
#VIRTUALFORUM

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RESEARCH PROJECTS: ECOSYSTEM TRANSFORMATION PROJECTS

RAWMINA

30 JUNE - 10:30 h (CEST)

Diego Morillo
Area Manager, Funcional Materials & Processing Area, LEITAT

LEITAT
Technological Center

LEITAT Technological Center participates in the Euromembrane 2021 conference in Copenhagen (November 28th – December 2nd, 2021).

Denmark is one of the leading membrane countries, not only in Scandinavia but in Europe with more than 50 years of large-scale membrane production. For this reason, the idea of hosting Euromembrane 2021 in Copenhagen was endorsed by many membrane scientists all over Scandinavia including scientists from the Technical University of Denmark (DTU), the University of Southern Denmark, University of Copenhagen, Chalmers University of Technology, Stockholm University, Luleå University of Technology and Lappeenranta University of Technology. The Euromembrane 2021 conference includes all areas of membrane technology to be a meeting for the whole membrane society.

EUROMEMBRANE
Copenhagen Denmark
28 Nov. - 02 Dec. 2021

Sonia Matencio Lloberas and Marcel Borrhiger from Leitac attended the conference to identify the new developments in membrane sector. Sonia Matencio presented one poster entitled "*Integrated Innovative Pilot System For Critical Raw Materials Recovery From Mines Wastes In A Circular Economy Context*". The general idea of the RAWMINA project, main objectives and future actions were presented. Also, Nanofibrous Composite Materials were introduced as an innovative system for the selective recovery of CRMs in the mining industry.

[Subscribe](#)[Past Issues](#)[Translate ▼](#)**1 Workshop on sustainable consumption and production & efficient use of natural resources.**

Our partner Fundacio Universitaria Balmes will be leading this workshop, which is particularly relevant for policy-makers at regional & national levels.

In 2022, Dates To be confirmed**CRMs recovery Helix Event****December 2022****The First Raw Minerals Helix event and launch/implementation of its strategy.**

This first Raw Minerals Helix networking event is set to take place in spring 2022, with the aim to foster collaboration with relevant initiatives.

April 2022**EU-South America International Conference organised by RAWMINA in Chile.**

This large event will kick off EU-South American specific cooperation activities for mining professionals in summer 2022.

July 2022**Open sessions (including one visit to the pilot)**

During our First open session, We welcome all social innovations enthusiasts to join us to find out about sustainable Raw Minerals production.

July 2022**Joint meeting/workshop to cluster with other relevant projects****December 2022**

Social Media:

RAWMINA is an exciting and innovative project that aims to develop and demonstrate the RAWMINA pilot system to secure access to a stable supply of raw materials.

Follow us on social media!



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 958252

Project coordinator:

Diego Morillo Martín

Email: dmorillo@leitat.org**Contact us:**info@rawmina.eu

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