



# A SUSTAINABLE ECOSYSTEM FOR THE INNOVATIVE RESOURCE RECOVERY AND COMPLEX ORE EXTRACTION

## PRESS RELEASE

13/02/2024

### LAUNCH OF EU-FUNDED PROJECT “XTRACT”

The **XTRACT project**, launched in December 2023, is set to revolutionise the mining industry with its pioneering approach towards achieving the *Zero Emission Mine of the Future*. This ambitious three-year Horizon Europe-funded initiative brings together 14 partner organisations from 9 European countries. The aim of this project is to add a highly innovative new alternative to the toolbox of how stockpiles and tailings are assessed, relieving the pressure on resources, and contributing to the realisation of EU Climate Neutrality Goals, with a significant benefit of emission reduction.

**XTRACT** also aims to introduce low-TRL green technologies of phytoextraction and phytoremediation, particularly appropriate for mining waste piles and abandoned sites that represent a solution for mine waste remediation but also for the extraction and recovery of various precious metals.

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#### BACKGROUND AND MOTIVATION: ADDRESSING THE CHALLENGE



XTRACT has received funding from European Union’s Horizon Europe Innovation Programme under Grant Agreement N°101138432. Content reflects only the authors’ view and European Commission is not responsible for any use that may be made of the information it contains.

In the backdrop of the global push for sustainability, the mining industry stands as a significant contributor to CO<sub>2</sub> emissions, accounting for 2 to 3 percent globally. Recognising the urgent need for decarbonisation and sustainable practices, the XTRACT project aligns with the European Commission's ambition for self-sufficiency in critical raw materials essential for the green and digital transition.

The industry is facing increasing pressure to reduce emissions, with underground mining operations emitting approximately 50% more greenhouse gases than open-cut operations. The demand for critical metals and minerals, crucial for Europe's transition, requires a paradigm shift in mining practices. The European way of mining must not only be resource-efficient but also environmentally friendly, safe, and economically viable to meet high environmental standards.

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#### WHAT ARE THE MAIN OBJECTIVES OF THE PROJECT?

- **AUTOMATION** of mineral prospecting and extraction in a complex mining context.
- **INTRODUCTION** of the novel concept of “precision mining” for the selective recovery of valuable metals from low-grade minerals and mine wastes.
- **SCALING** and **DEPLOYMENT** of remote sensing systems and analytical resources to allow the systematic and remote monitoring of “hard-to-access” mining sites and waste deposits.
- **ENHANCEMENT** and **DEPLOYMENT** of an open standards-based, trusted, and certified digital repository, supporting data interoperability and enhancement of industrial symbiosis in the mineral recovery supply chain, fostering the transformation towards sustainable mining.
- **EVALUATION** of different mine sites and waste disposals. Demonstration of the feasibility (evidence-supported) of innovative technological solution supporting a green transition to the sustainable mining.
- **ORGANISATION** and **FACILITATION** of the uptake, replication and upscaling of the technological solutions developed by XTRACT.
- **PLANNING** and **FACILITATION** of the exploitation of project results.
- **COMMUNICATION** and **DISSEMINATION** of the project’s scientific and technical results – Outreach to other R&D initiatives, end-users’ communities and the global mining environment for knowledge transfer and Market development through liaison and training activities.

The official **Kick-off Meeting** of the **XTRACT project** took place on January 25<sup>th</sup>, 2024, in Athens, Greece, and welcomed over 30 attendees committed to working together to develop prototype technologies and produce a valuable and deployable solution.

The Lavrion Technological and Cultural Park will play a key role in the project as it will design and evaluate the validation campaign for the innovative technologies that will be developed in the project and will be responsible for the implementation of these technologies in four selected test sites across Europe (Pilots). Furthermore, the Kavodokanos waste dump will be used as one of the four Pilots of the XTRACT project. Together with partners from the Technical University of Crete and the Lithuanian Research Centre for Agriculture and Forestry we are aiming to introduce Nature-based and Eco-friendly solutions for mines and mining waste, namely phytoremediation-phytoextraction technologies. Our aim is to test and evaluate the efficiency of using trees and plants in order to recover valuable raw material from waste piles and to remediate contaminated soil by extracting heavy metals and other pollutants.

Overall, the research would have several long-term benefits: a) contaminated sites remediation, b) reducing deforestation by planting new trees, c) reusing waste products, d) heavy metal degradation in different treatment stages, e) creating a sustainable circular economy model.

Further information can be found at <https://xtract-project.eu/>

**FOLLOW XTRACT JOURNEY & KEEP UP WITH NEW DEVELOPMENTS AND UPCOMING RESULTS!**

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**XTRACT CONSORTIUM**

**XTRACT** is a 3-year, Horizon Europe funded project that started in December 2023 and will last until November 2026. It involves **14 partner organisations** from 9 European countries:

No	Partner	Organisation Website	Country
1	TUBAF	<a href="https://tu-freiberg.de/en">https://tu-freiberg.de/en</a>	Germany
2	LTU	<a href="https://www.ltu.se">https://www.ltu.se</a>	Sweden
3	MUON	<a href="https://muon-solutions.com/">https://muon-solutions.com/</a>	Finland
4	USAL	<a href="https://tidop.usal.es/en/">https://tidop.usal.es/en/</a>	Spain
5	ACCELI	<a href="https://www.acceligence.cy/">https://www.acceligence.cy/</a>	Cyprus
6	BGRM	<a href="https://www.brgm.fr/en">https://www.brgm.fr/en</a>	France
7	UNP	<a href="https://www.unparallel.pt/">https://www.unparallel.pt/</a>	Portugal
8	LNEG	<a href="https://www.lneg.pt/">https://www.lneg.pt/</a>	Portugal
9	TUC	<a href="https://www.tuc.gr/">https://www.tuc.gr/</a>	Greece
10	LAMMC	<a href="https://www.lammc.lt/en">https://www.lammc.lt/en</a>	Lithuania
11	BJORKDAL	<a href="https://mandalayresources.com/">https://mandalayresources.com/</a>	Sweden
12	SAXORE	<a href="https://www.saxorebergbau.com/">https://www.saxorebergbau.com/</a>	Germany
13	NTUA/AMDC	<a href="https://www.ltcp.ntua.gr/">https://www.ltcp.ntua.gr/</a>	Greece
14	GEOS	<a href="https://www.geosfreiberg.de/">https://www.geosfreiberg.de/</a>	Germany

**XTRACT Website:** <https://xtract-project.eu/>

**Social Media:** LinkedIn: [linkedin.com/company/xtract-project/](https://www.linkedin.com/company/xtract-project/)

Twitter: [https://twitter.com/xtract\\_project](https://twitter.com/xtract_project)

**Duration:** 36 months | Starting from December 1st, 2023

**Total Funding/ EU contribution:** € 4.995.636

**Coordinator:** Technische Universitaet Bergakademie Freiberg (TUBAF)

## CONTACT US

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