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the European Union



22 PARTNERS – 8 COUNTRIES – 48 MONTHS – 9.9€ EU FUNDED

PRocess Innovations for the  
Mineral industry focusing on  
ROasting and Calcination Kiln  
technologies and supported by  
novel pre- and post-processing



**Prim-Rock**

# The Project

PRIM-ROCK aims to make process industries more resource-efficient, by **improving the calcination and roasting processes.**

This will be achieved using a range of innovative digital technologies, designed to **facilitate the transition from fuel-based to electrified thermal processes.**



**Decarbonising the industrial sectors**



**Reducing material waste**

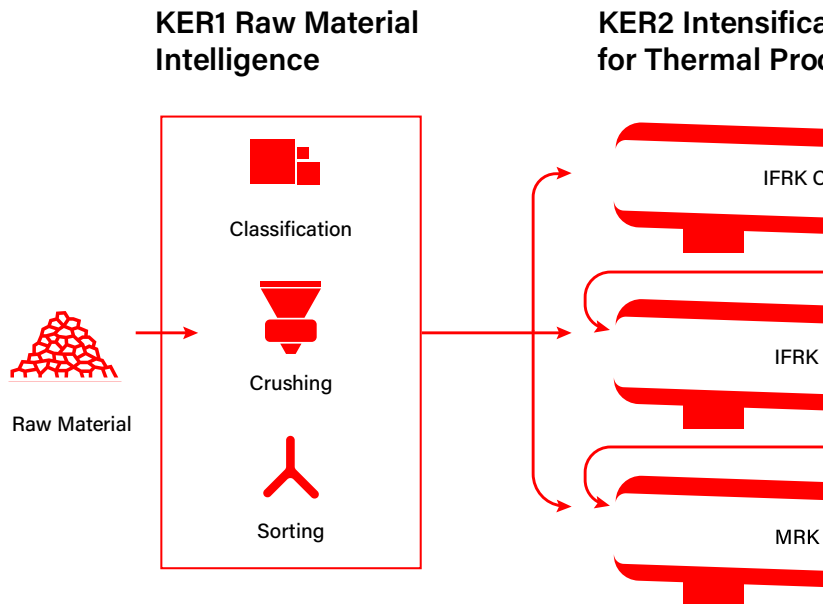
IMPROVE THE RESOURCE EFFICIENCY OF THE CALCINATION AND ROASTING PROCESSES



**Increasing resource  
efficiency**

# The Prim-Rock

An Advanced and Automated system for the pre-processing of raw materials



The PRIM-ROCK RMI (Raw Material Intelligence) system will comprise a process line featuring a range of AI-powered technologies, to optimise classification, crushing and sorting.

IMPROVE THE RESOURCE EFFICIENCY OF THE CALCINATION AND ROASTING PROCESSES

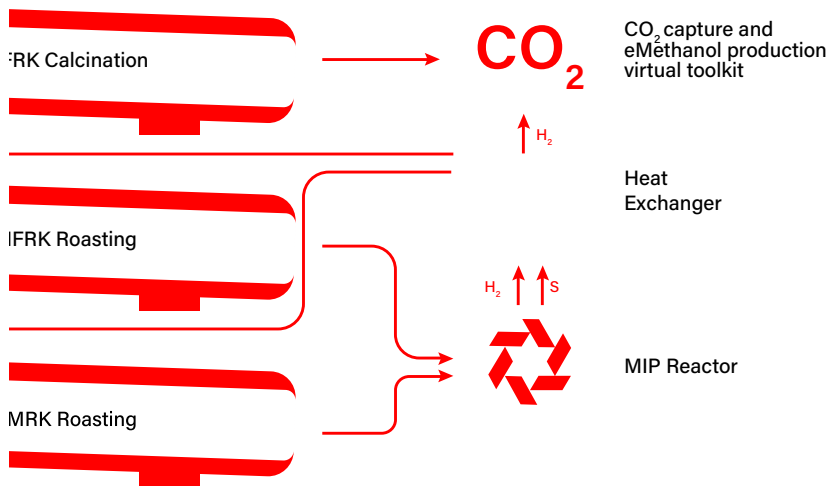
# Solution

3 state-of-the-art indirect-fired rotary kilns

A cutting-edge microwave-assisted plasma reactor

Calcination Technologies  
Processing

KER3 Post-processing  
Solutions



PRIM-ROCK will prototype and develop new thermal processing technologies, to replace conventional direct-fired rotary kilns at the process stage.

At the post-process level, PRIM-ROCK will model and prototype an MIP reactor, an innovative heat exchanger and a virtual toolkit for CO<sub>2</sub> byproduct exploitation.

# Pilots

## Calcination

Focusing on the calcination process, the NTUA pilot will demonstrate the IFRK prototypes for the Lime and Magnesite Production use cases.



H2 Living Lab  
in Athens

IMPROVE THE RESOURCE EFFICIENCY OF THE CALCINATION AND ROASTING PROCESSES

# Roasting

Focusing on the roasting process, the Eurecat pilot will demonstrate the IFRK and MRK prototypes, demonstrating the Ferronickel production and

Sphalerite Concentrate & Chalcopryrite Production use cases. An existing MIP torch will be modified to facilitate the PRIM-ROCK MIP prototype.





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## CONTACTS

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