EIC Cement and Concrete PORTFOLIO

MOJITO has been selected for funding under the highly competitive European Innovation Council (EIC) Pathfinder challenge "*Towards cement and concrete as a carbon sink*"

https://eic-carbonsink.eu



Partners

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MOJITO Project

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Dissemination level -Public

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MOJITO

Cleaner lime, lower energy, captured CO_2
MOJITO decarbonizes

MOJITO aims to validate a laboratory-scale system for producing decarbonised lime with lower energy demand and reduced calcination-related CO_2 emissions, while enabling CO_2 removal.

The concept relies on an electrified rotary kiln integrating hybrid microwave and electrical heating to deliver heat directly to the calcining material.

THE PROCESS:

1 - Thanks to microwave penetration into limestone particles, the process can operate at lower temperatures than conventional systems

2 - The feedstock is complemented with carbonaceous additives that enhance electromagnetic energy absorption and convert it into heat, improving overall process efficiency

3 - The CO_2 released during calcination is collected in a dedicated external vessel, enabling downstream CCU/CCS pathways

In parallel, MOJITO will perform atomistic simulations of $CaCO_3$ calcination under realistic conditions, leveraging machine-learning force fields and Tier-0 supercomputing to resolve key mechanisms and guide the design and optimisation of the MOJITO system.

The project targets lime quality grades covering up to 70% of market demand



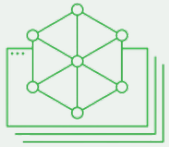
WP1
Management, coordination and risk management



WP2
Analysis of input materials, products and gathering of relevant process data



WP3
Pilot plant purchase, commissioning and operation



WP4
Computationa l science



WP5
Exploitation, communication and dissemination



WP6
Portfolio management