

FIC Fighters

From Waste to Sustainable Products

Valorisation of phosphogypsum wastes into commercial products to achieve healthy cities through sustainable and circular processes.

Expected impact

Enhance Urban Sustainability

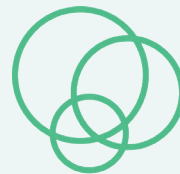
By converting phosphogypsum waste into valuable resources, the project supports cleaner cities and reduces industrial waste.

Promote Circular Economy Practices

The project encourages circularity across various industries, contributing to the EU's Green Deal objectives.

Influence Policy and Regulation

By demonstrating the environmental and economic benefits of PG valorisation, the project aims to inform European policies on waste management and sustainable resource use.



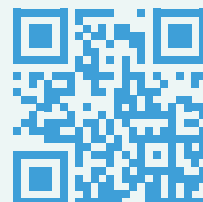
Circular
Cities & Regions
Initiative



Funded by
the European Union

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.

 fic-fighters.eu
[@ficfighters](#)   





FIC-Fighters in a nutshell

FIC-Fighters is an EU-funded project advancing sustainable solutions for managing phosphogypsum (PG) waste while supporting the circular economy.

By involving local stakeholders and industries, it aims to transform PG waste into valuable raw materials for sectors like paper, cement, batteries, fertilisers, and detergents.

Performing research across six European sites, the initiative focuses on achieving Technology Readiness Level 6-7 for waste recovery processes.

Our project fosters interdisciplinary collaboration, and promotes innovative practices to regenerate PG stacks, reducing environmental impacts and supporting sustainable urban development.

Our main objectives

Over 48 months, in collaboration with the Circular Cities and Regions Initiative (CCRI), FIC-Fighters will:

Build a Mobile Pilot Plant

Demonstrate sustainable production of raw materials (sodium sulfate, Rare Earth Elements, phosphorus, aluminum hydroxide, ammonium sulfate, and precipitated calcium carbonate) starting from phosphogypsum and other wastes, using optimised results and digital twin technology.

Create a Phosphogypsum Forum

Facilitate local discussions and workshops across 6 case studies, encompassing citizen participation with an inclusive, gender-focused approach, to address socio-economic, environmental, and regulatory aspects of new circular business models.

Enhance Flexibility and Replicability

Address the flexibility and replicability of the valorization processes by incorporating six case studies and establishing the first PG Exploitation Portal. This portal will focus on identifying, characterizing, and reaching all European cities facing similar challenges.

Establish a Knowledge Exchange Forum

Participate in clustering and CCRI events, establish a Community of Practice, and ensure project results are publicly available and exploitable, while addressing Intellectual Property protection.

Provide Circularity Guidelines

Develop guidelines based on Life Cycle Assessment (LCA), Life Cycle Costing (LCC), social, and health and safety studies.

Pilot sites

Insights from six case studies of existing phosphogypsum ponds will allow to establish the first Phosphogypsum Exploitation Portal, aiming at the replicability of the valorisation processes:

Barreiro (Portugal)

Located near Lisbon, the Barreiro site benefits from the active involvement of the Barreiro Municipality, which is committed to exploring innovative uses for phosphogypsum.

Kutina (Croatia)

The Kutina site in Croatia is well-regulated and maintained, providing a stable foundation for phosphogypsum valorisation.

Prahovo (Serbia)

Prahovo benefits from internationally recognised management systems, including ISO certifications for quality, environmental, and safety standards.

Turnu Măgurele (Romania)

The Turnu Măgurele site offers potential for circular economy valorisation in construction, soil improvement, and innovative disposal solutions.

Veles (North Macedonia)

The Veles site in North Macedonia is well-suited to explore environmentally sustainable waste reduction strategies with economic benefits.

Cartagena (Spain)

In Cartagena, the El Hondón site remediation pilot explores sustainable land reuse and valorisation of contaminated post-industrial soil.

