

# METABUILDING 1st GROW / HARVEST CALL : MEET THE WINNERS !

## Building Insulating Panel from Lightweight Aggregate and Recycled Carbon Fibers

SECTORS INVOLVED : Construction · Circularity & Recycling



SWITZERLAND



ITALY



CENTRO DI RICERCHE EUROPEO DI TECNOLOGIE DESIGN E MATERIALI

METABUILDING Innovation  
Stakeholder providing  
technical support | ITALY

*"This project aims to link the recycling of inorganic building insulation and carbon fiber to provide an innovative high-performance panel for the construction sector."*

Michele Zanini  
CTO FenX AG



*"Carbon Task would open up new frontiers and new markets for their recycled carbon fibres, with low production costs and large usable volumes."*

Christian Scopinich  
Carbon Task Srl

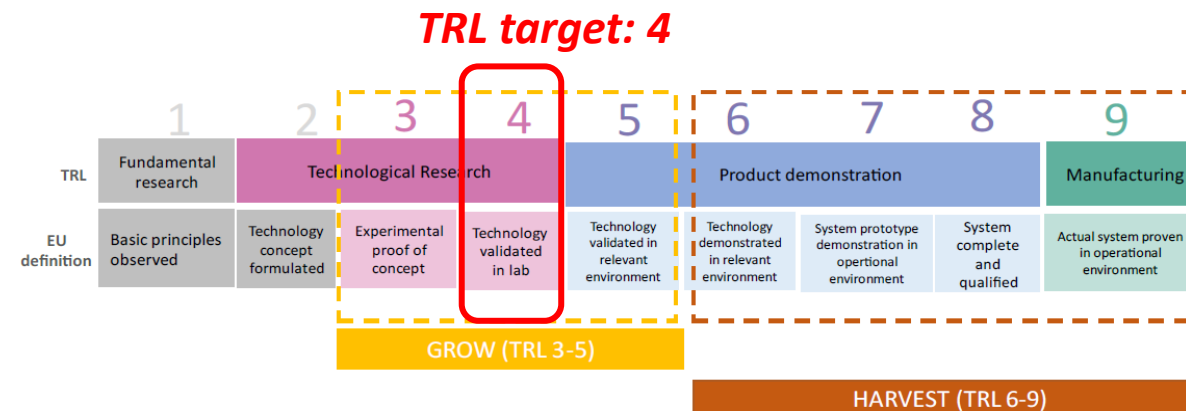
## Development of an innovative construction panel based on recycled materials

- The **Project idea** is to use recycled materials for the manufacturing of a new construction solution (panel) insulating, with improved mechanical performance and sustainable (SRM use)
- FenX (leader SME) produces a mineral foams for constructions from mineral wastes. To fulfil circular economy principles, both production scraps and future demolition waste should be recycled
- Carbon Task (SME) recycles carbon fibers from composite materials sector. This material has a great potential (low cost associated with high mechanical performance) and can be used as reinforcement for construction materials.

# Project aim

## Insulating /Sustainable solutions for green transition of construction sector

- Validate end-of life scenario for FenX panels / production waste (circular economy/zero waste approach)
- Evaluate the usability of recycled carbon fibers of CARBON TASK in construction materials (expand applications)
- Development of a **new building material** thermally insulating/mechanically resistant and incorporating recycled materials → **recycled foams/FENX** and **recycled fibers/CARBON TASK**



# Project consortium

## Collaboration of construction and carbon fibers sectors

- **FenX (SME)**, based in Switzerland (spin-off from ETH Zürich), produces insulating panels from secondary raw materials. It joins the Consortium to validate possible strategies to increase the circularity of production process and end-of-life scenario.
- **Carbon Task (SME)**, located in Italy, is specialized in the recovery of carbon fibers from post-industrial scraps. It joins the Consortium to expand the application of the fibers for building materials
- **CETMA (service provider of both SMEs)** is an RTO with know-how in the development of new materials and processes according to the circular economy criteria. It provides infrastructure for (building) materials testing and prototyping



## Development of a performing construction panel based on recycled materials

- Integration of insulating foam scraps and recycled carbon fibers into a **new construction panel**
- Preservation of **thermal insulation** and improvement of **mechanical resistance** of the panel
- Development of a more **sustainable solution**, through valorization of SRM (waste foams/fibers)
- Valorization of materials discarded by industrial processes (FenX and Carbon Task production)
- Optimization of formulations targeting to maximize recycled content and considering technical performance

## New product for green buildings market

- The implementation of the solution will ensure the construction sector the **availability of a new product with high insulating properties and high level of sustainability**
- The global **green building materials market** is expected to grow from \$216.99 billion (2020) to \$383.85 billion (2025). Construction companies and private customers are increasingly oriented towards **sustainable building products**
- Recycling of FenX production scraps (foams) allows closing of the production process. The company can expand solutions offered for the construction market
- Recycling of Carbon Task production scraps (fibers) allows the valorization of an added value material. The company can open new markets (construction) for its recycled material

## Testimonials

- I am a METABUILDER because recycling & circularity should be key factors in future innovation ecosystems
- The financing received from METABUILDING enables us to validate a new technology in the lab

# CONTACTS

Construction, Circularity & Recycling sectors



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Thank you for your kind attention

[www.metabuilding.com](http://www.metabuilding.com)



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