

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



Unleashing the Innovation Potential of EU Construction SMEs

Construction + Recycling & Circular Economy Challenge



- New recycled building and/or urban fabric materials
- Digital solutions for the Circular approach in the construction sector



METABUILDING Project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 873964. The sole responsibility for the content of this document lies entirely with the author's view. The European Commission and the European Innovation Council and SME Executive Agency (EISMEA) are not responsible for any use that may be made of the information it contains.

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

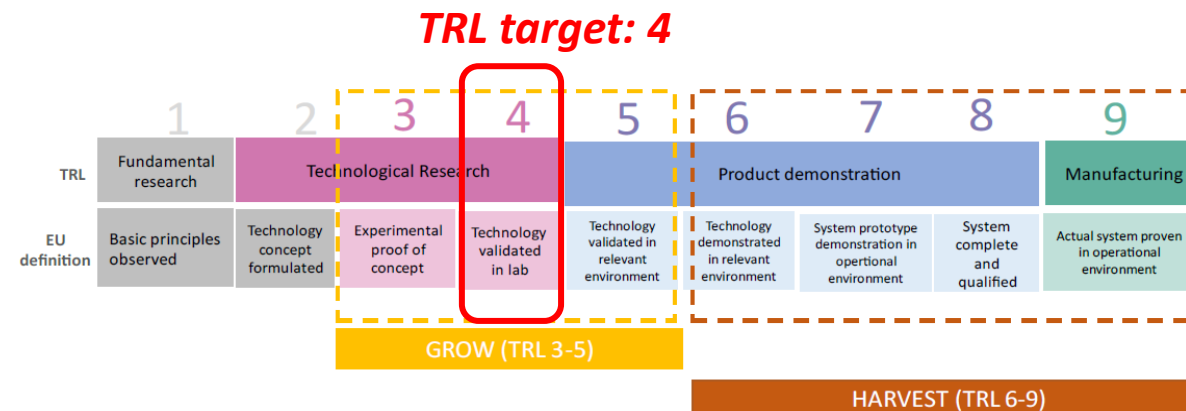
Development of an innovative construction panel based on recycled materials

- 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



Michele Zanini
CTO
michele.zanini@fenx.ch



Christian Scopinich
Founder Carbon Task Srl
cscopinich@gescoconsulting.com



Agnese Attanasio
Senior R&D Engineer – Sustainable Construction Materials Specialist
agnese.attanasio@cetma.it



Thank you for your kind attention

Project :

www.metabuilding-project.eu



Platform :

www.metabuilding.com



METABUILDING Project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 873964. The European Commission and the European Innovation Council and SME Executive Agency (EISMEA) are not responsible for any use that may be made of the information it contains. The sole responsibility for the content of this document lies entirely with the authors.