EASI ZERo

Envelope mAterial System with low Impact for Energy Renovation and construction

Zero energy and low carbon buildings renovation

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Financed by Horizon Europe research program

Summary

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2. Project objectives
3. EU partners
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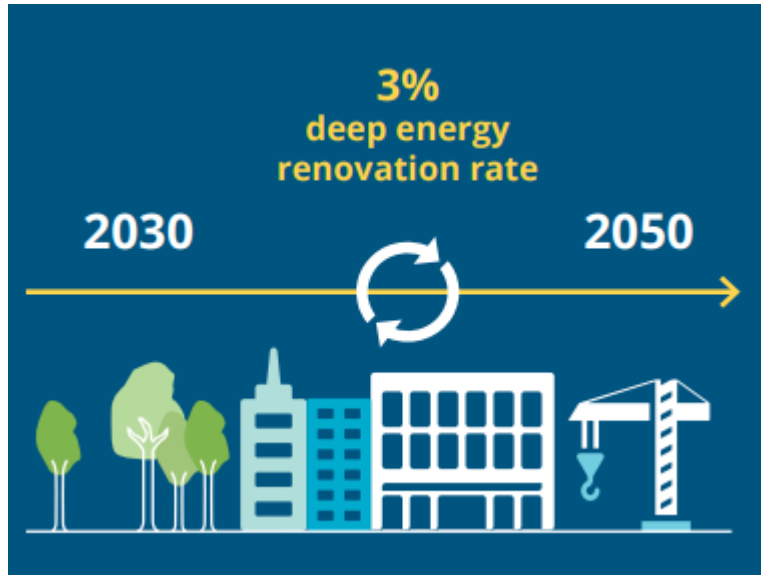
Introduction

To contribute to the reduction of GHG emissions by at least 55% by 2030, the buildings sector GHG emissions should decrease by 60% by 2030 compared to 2015.



[1] Sibileau, H. (2021). Deep Renovation: Shifting from exception to standard practice in EU Policy. *Buildings Performance Institute Europe (BPIE)*.

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Introduction

DEEP RENOVATION should minimise energy needs by **capturing the full potential of the building** while delivering adequate **comfort levels to occupants.**

The remaining low energy demand should **be supplied by renewables,** progressively increasing their share within the total supply, **towards reaching 100% at the end of the deep renovation process and BY 2050 latest.**

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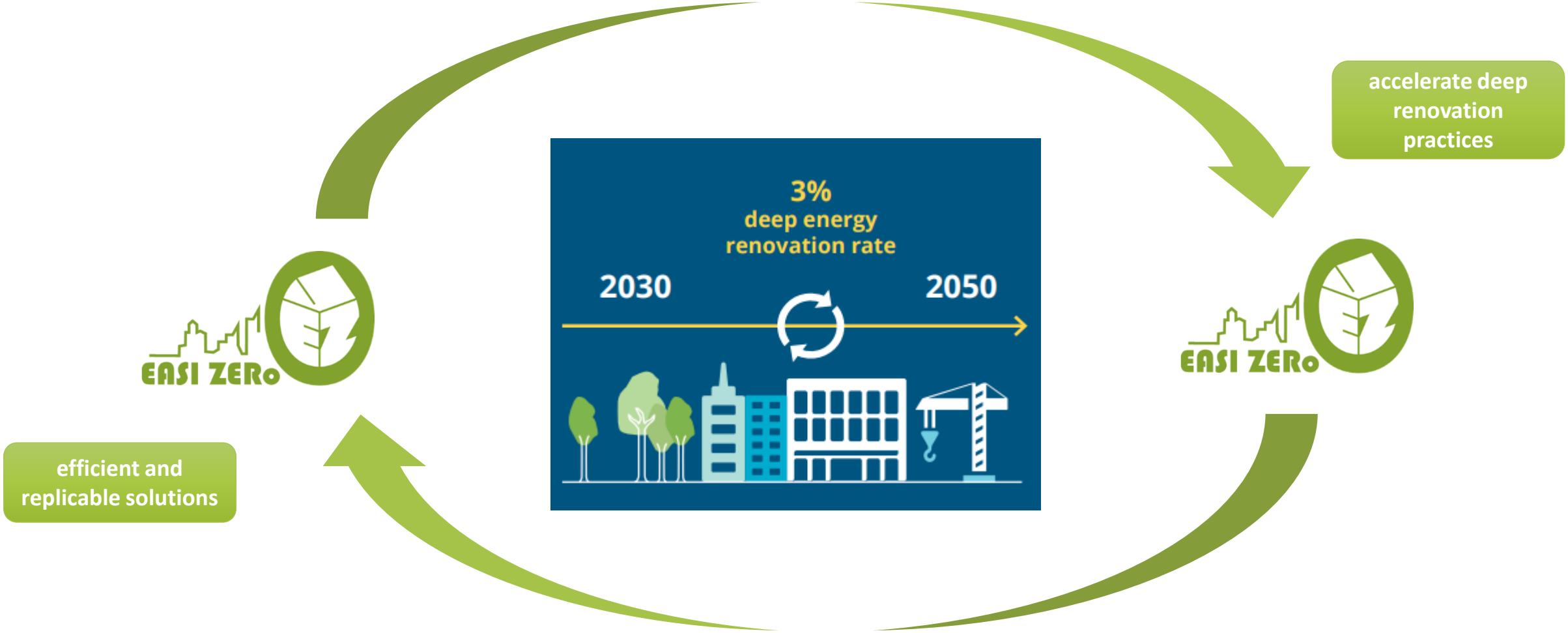

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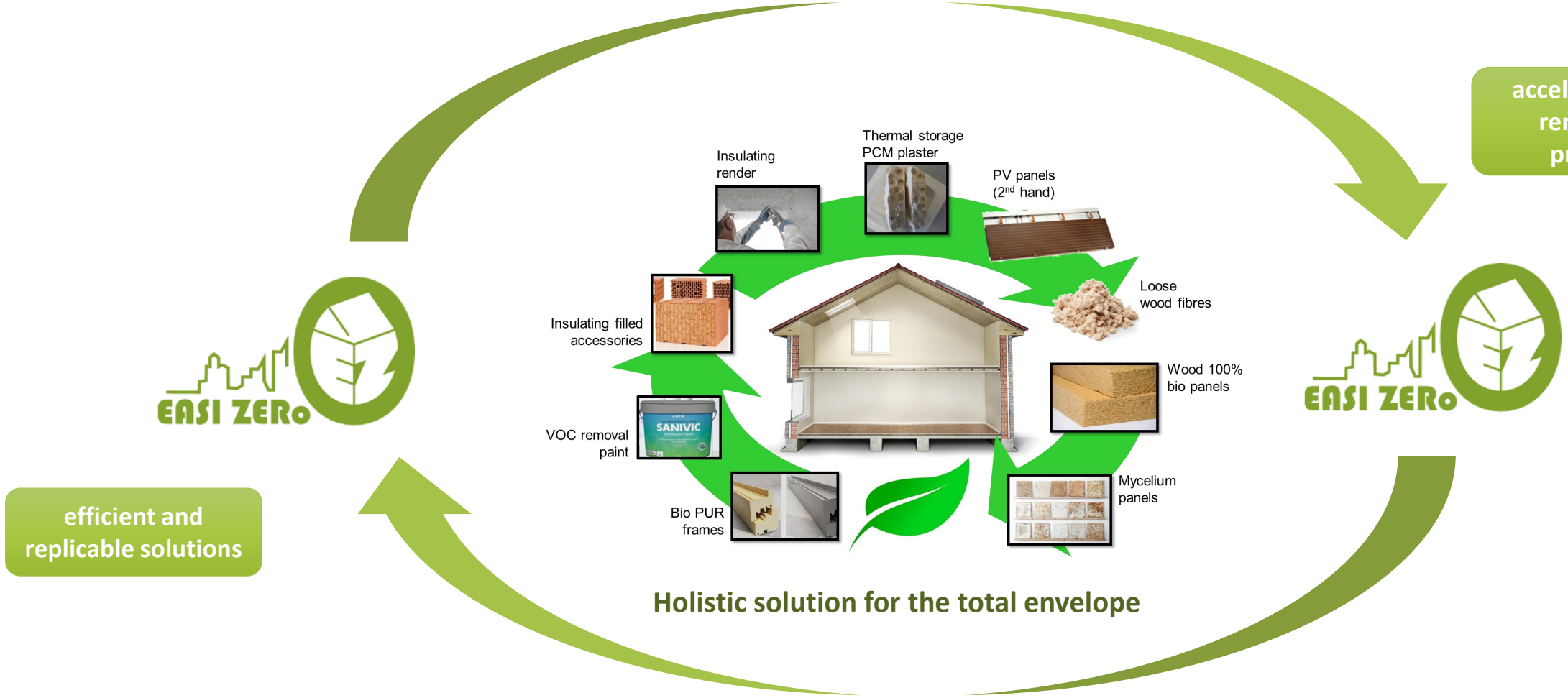


Low carbon materials for the total envelope

Easy to install and apply

Reusable components

Low-carbon plasters and renders

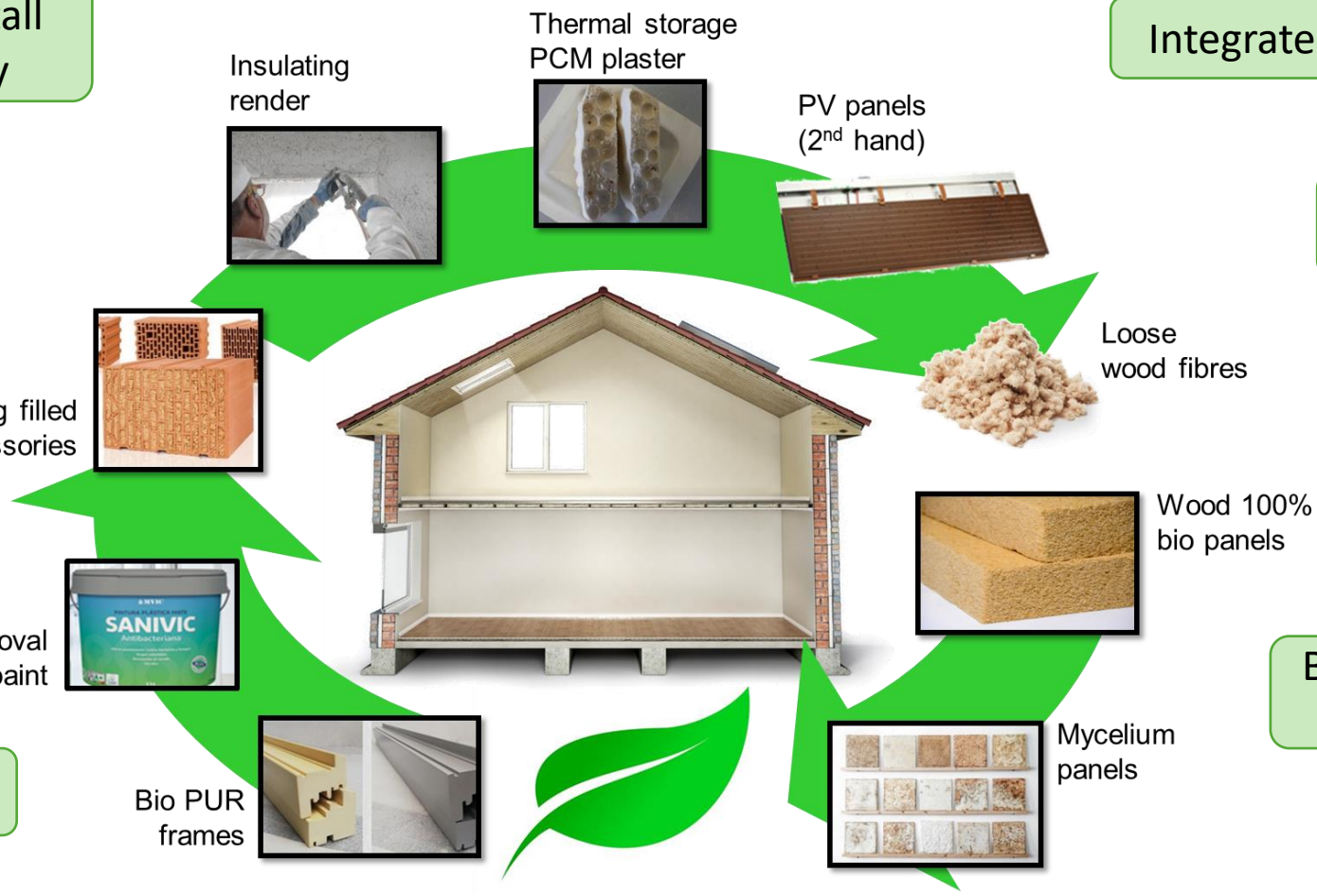
Healthy finishing

Integrated PV tiles

High performance thermal insulation

Recycled materials

Bio-sourced insulation



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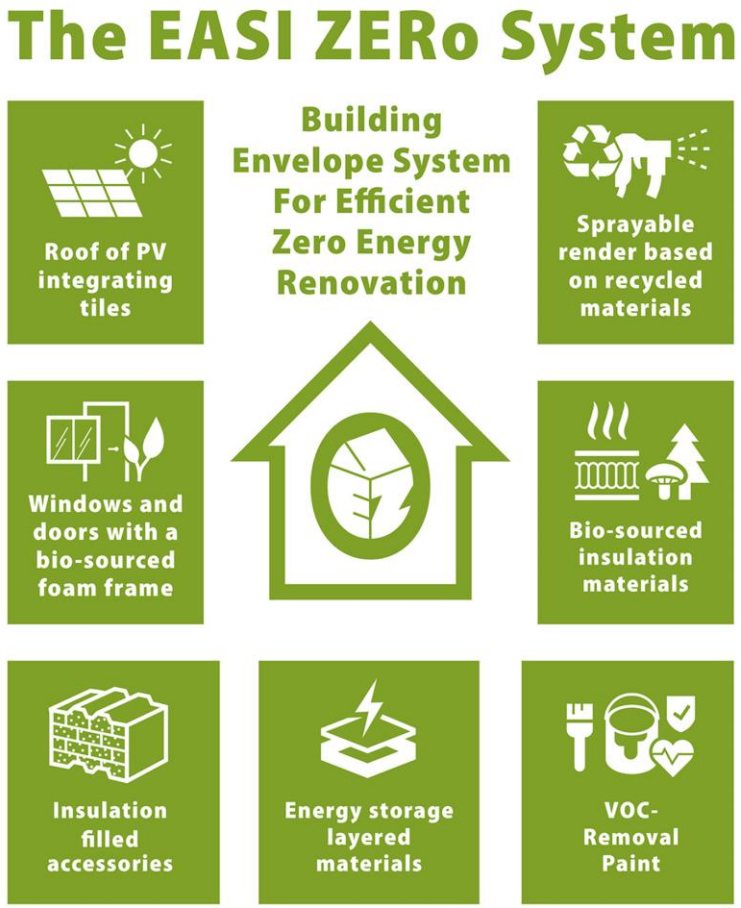
Primary outcome:



- Inclusive and versatile **package of insulating material**
- **complete solution for the renovation** of any typology of buildings in any **European climate zone**

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European Partners in the project

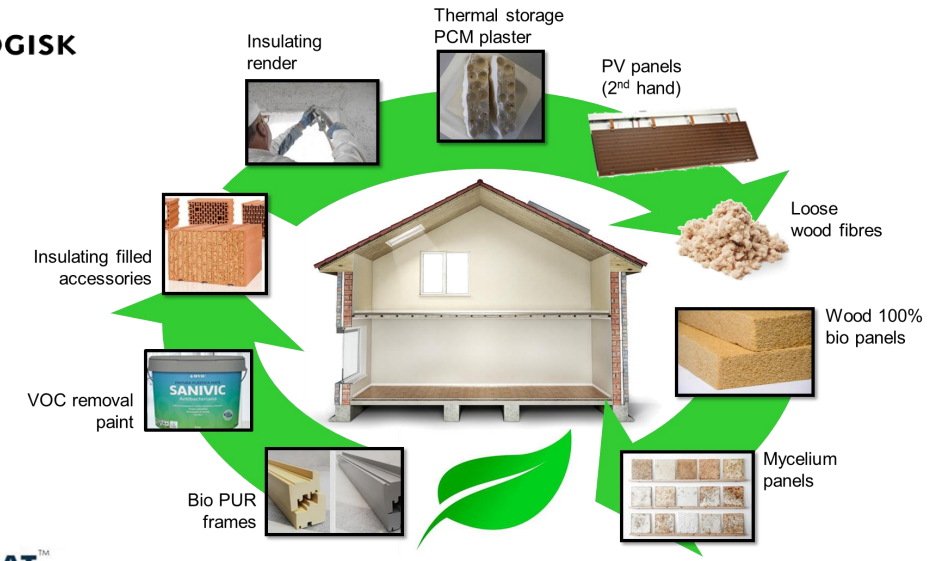
16 partners

Start-ups & SMEs

7 EU countries

Research centers

Universities



Start : December 2022

End : May 2026

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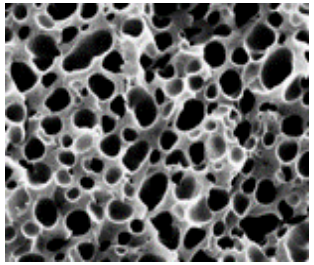
High-performance innovative materials

Mycelium-based product

Wood-fibres insulation

Biopolymer, PUR, for easy spray application and profiles manufacturing



Waterglass foam insulation

Wood-fibres insulation

Non-flammable phase change materials

Painting to capture VOCs and enhance the Internal Air Quality

colored PV tiles or façade with tight cladding system

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High-performance innovative materials

Mycelium-based product

- ✓ Very low CO_2 full bio-based insulation materials
- ✓ Compressed panel in wood fibres
- ✓ Fungal strain is inoculated in the natural fibres
- ✓ Mycelium colonize and binds the fiber
- ✓ Drying at low temperature (50°C) to stop colonization

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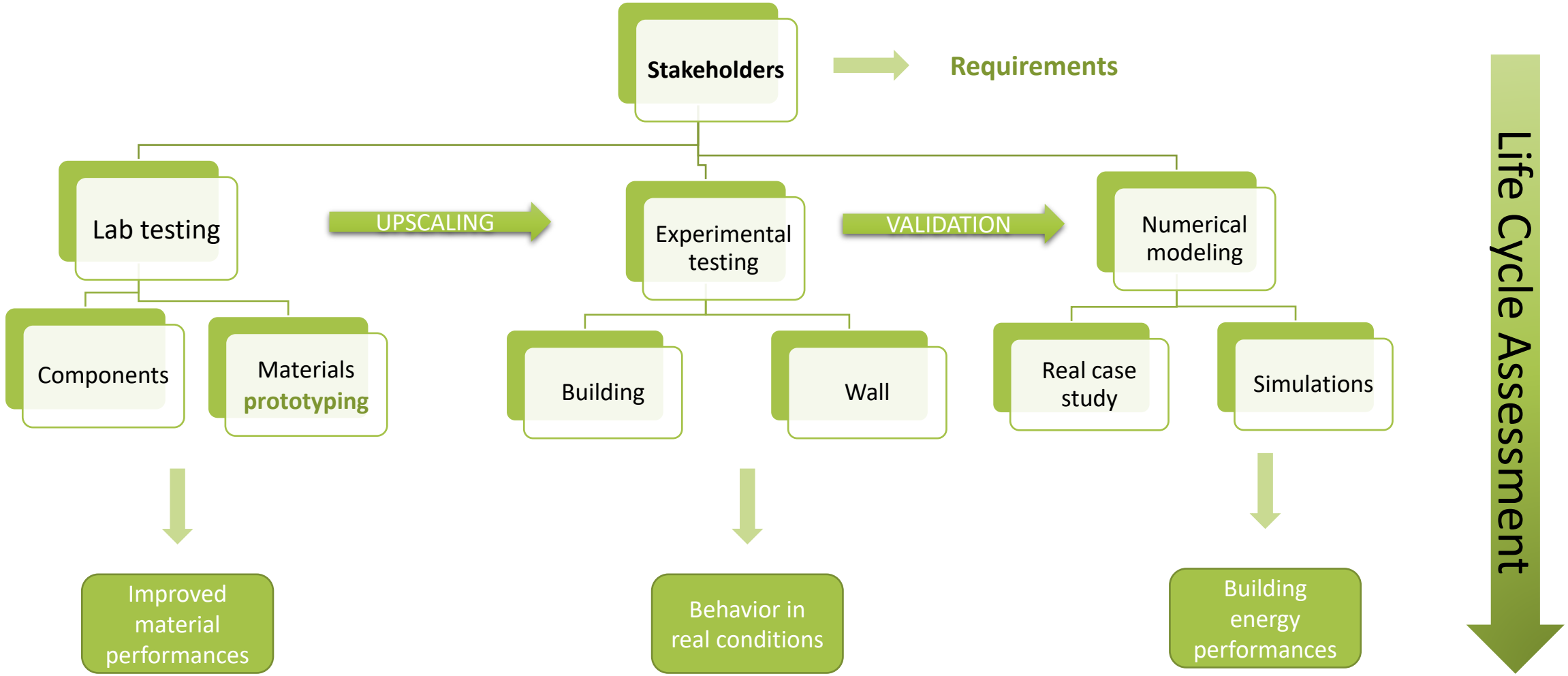
Project methodology



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Stakeholders join the Easizero community

EASI ZERo Expert
- Innovative solutions
- Access to workshops
- Create network

EASI ZERo Expert
- Feedback on products requirements

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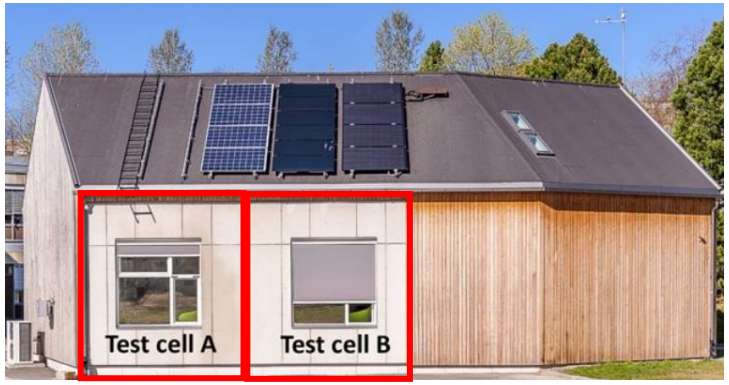
Project objectives and methodology

Materials **prototyping** and lab testing

Numerical modeling and experimental testing at **wall** and **building scales**



Real **case study**

-30% CO_2 emissions
-30% in the embodied energy

+20% thermal resistance
-30% installation worktime

Energy consumption < 50 kWH/m²/yr
Carbon emission < 4 $kgCO_2/m^2/yr$

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SUSTAINABLE PLACES 2023

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Fraunhofer ISC

HUNTON

Elithis Solutions

INDRESMAT INDUSTRIAL RESINS & MATERIALS

LEIPFINGER BADER Ziegelwerke

BPIE

LEITAT Technological Center

mogu RADICAL BY NATURE

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