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BIO insulation materials for Enhancing  
the Energy performance of Buildings



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# TECHNOLOGY

BIO4EEB aims to accelerate the development of bio-based insulation materials which comply with the most stringent industry standards. The project innovations would fill the growing shortage of respectful insulation materials by boosting the utilization of available and qualified bio-based materials.

In BIO4EEB a portfolio of non-hazardous, bio-based insulation solutions will be developed in the form of:

- Posidonia panels and fibres
- Complex polyelectrolytes
- PLA and bio-polyurethane
- Bio-based windows

# IMPACT

The newly developed bio-based materials are expected to deliver:



30%

Reduction of the embodied energy and CO2 at component level



20%

Improvement of insulation properties



15%

Reduction of the total costs compared to existing solutions



5%

Reduction of the energy consumption over the life cycle of buildings

# DEMO-CASES



**5** Real demo-cases have been selected which on top of covering different building typologies and climates will also test different solutions offered by BIO4EEB:



1. Multifamily multi-storey residential refurbishment in Lithuania



2. Historical/protected single family residential refurbishment in Spain



3. Single family residential refurbishment / new construction in Germany



4. Rural single family residential refurbishment in Czech Republic



5. Restructuring a public building into offices



**3** virtual demo-cases are selected in order to complement the real demo sites with remaining popular building typologies and climates present throughout Europe.



1. Virtual demo-case in Hungary - Middle European Continental climate



2. Virtual demo-case in Belgium – Oceanic climate



3. Virtual demo-case in Italy – Mediterranean climate



# PARTNERS

Bio4EEB brings into collaboration diverse expertise, engaging a well-balanced multidisciplinary consortium consisting of partners from 10 European countries as well as one Latin American partner. Expertise and Partners from Austria, Belgium, Colombia, Czech Republic, France, Germany, Hungary, Italy, Lithuania, The Netherlands and Spain are joining forces working on BIO4EEB. Research organizations, universities, large companies and small and medium size enterprises are collaborating in BIO4EEB and represent a broad range of sectors such as building physics, building technology, architecture, computer science, economics, social science and materials.



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