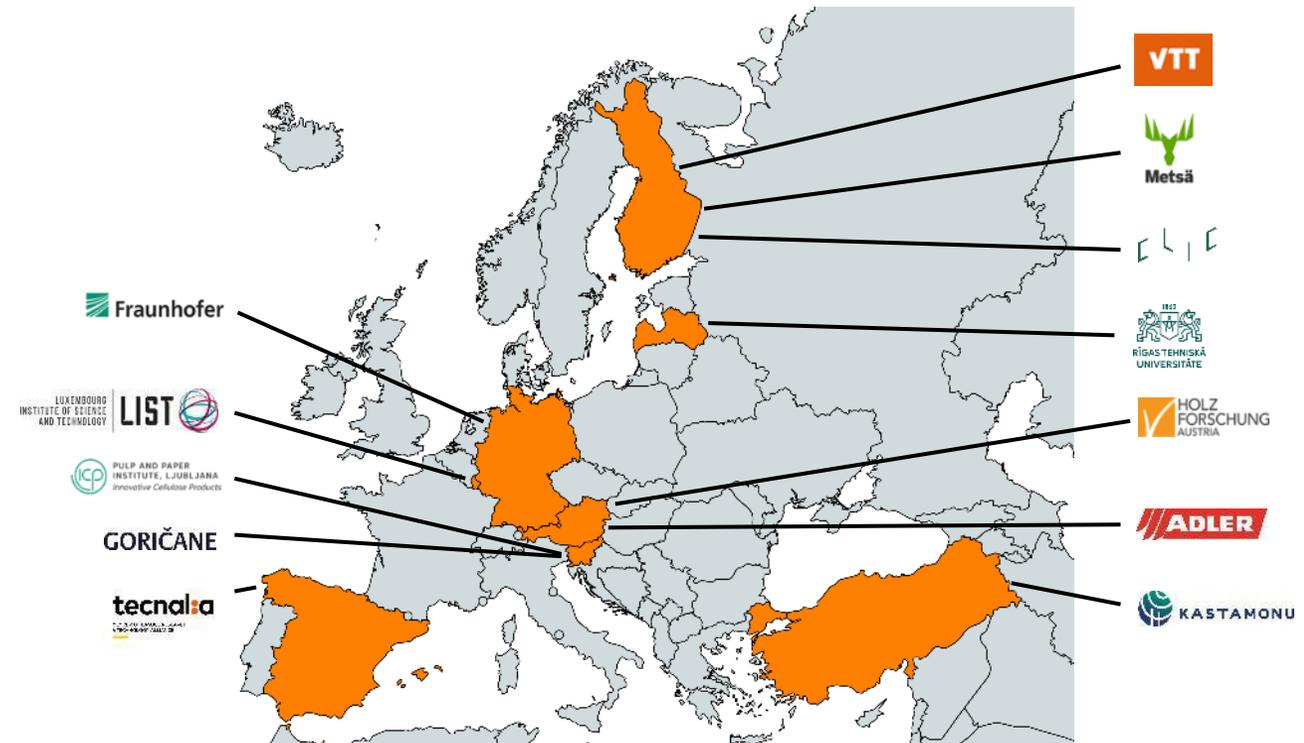


SuperBark – Safe, sustainable and high performance adhesives and coatings

Marc Borrega, VTT

General information

- Funded by: Circular Bio-based Europe Joint Undertaking (CBE JU) under Horizon Europe
- Consortium: 12 partners from 8 countries
- Coordinator: VTT
- Budget: 4.5 M€
- Time frame: 09/2023-08/2027 (48 months)



Objectives

1 Produce bio-based components for adhesives and coatings from industrial softwood bark, using novel alkaline extraction and membrane-assisted separation technologies.

2 Develop adhesives with >95% bio-based content from polyphenols extracted from bark for plywood, particleboard and medium-density fibreboard.

3 Develop coatings with >95% bio-based content from bark-based cellulose nanofibrils and polyphenols for plywood and packaging paper.

4 Apply a Safe-and-Sustainable-by-Design framework to support the design of safe and sustainable adhesives and coatings using bark components.

5 Develop digital tools including process design, data analytics and system dynamics modelling to support the scale-up and market integration of the adhesives and coatings.

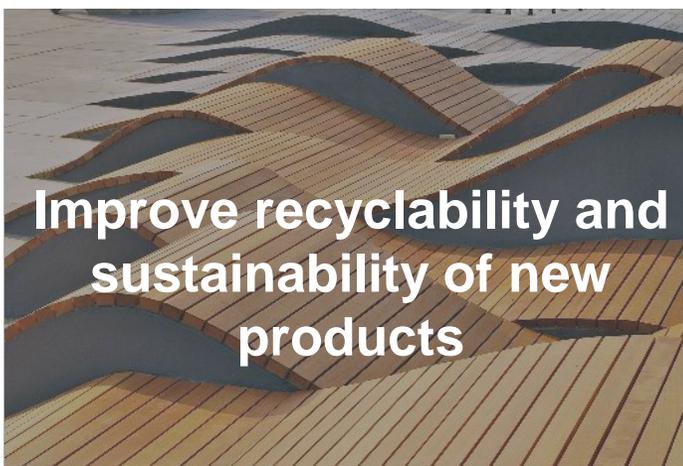
6 Communicate, disseminate and exploit the outcomes of the project to relevant stakeholders to increase awareness of the new technologies, products, and associated opportunities.

Impacts



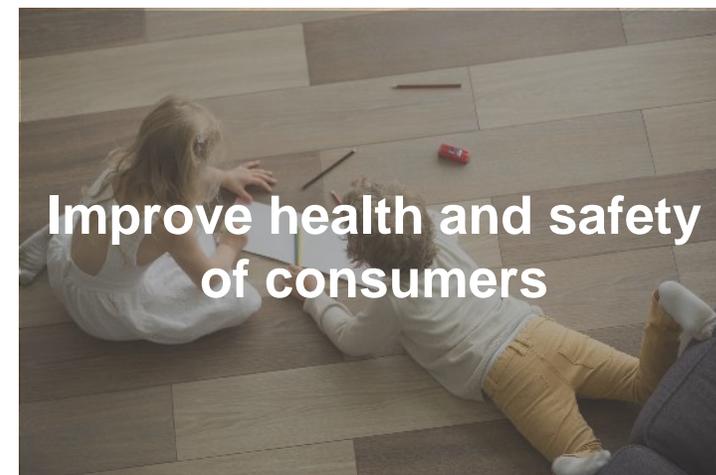
Increase bio-based product portfolio

SuperBark will develop and validate at **adhesive and coating formulations with bio-based content of above 95%** to replace fossil-based solutions in wood panels and packaging paper. Industrial replication of the SuperBark technologies will **increase availability of bark-based components and bioproduct portfolio.**



Improve recyclability and sustainability of new products

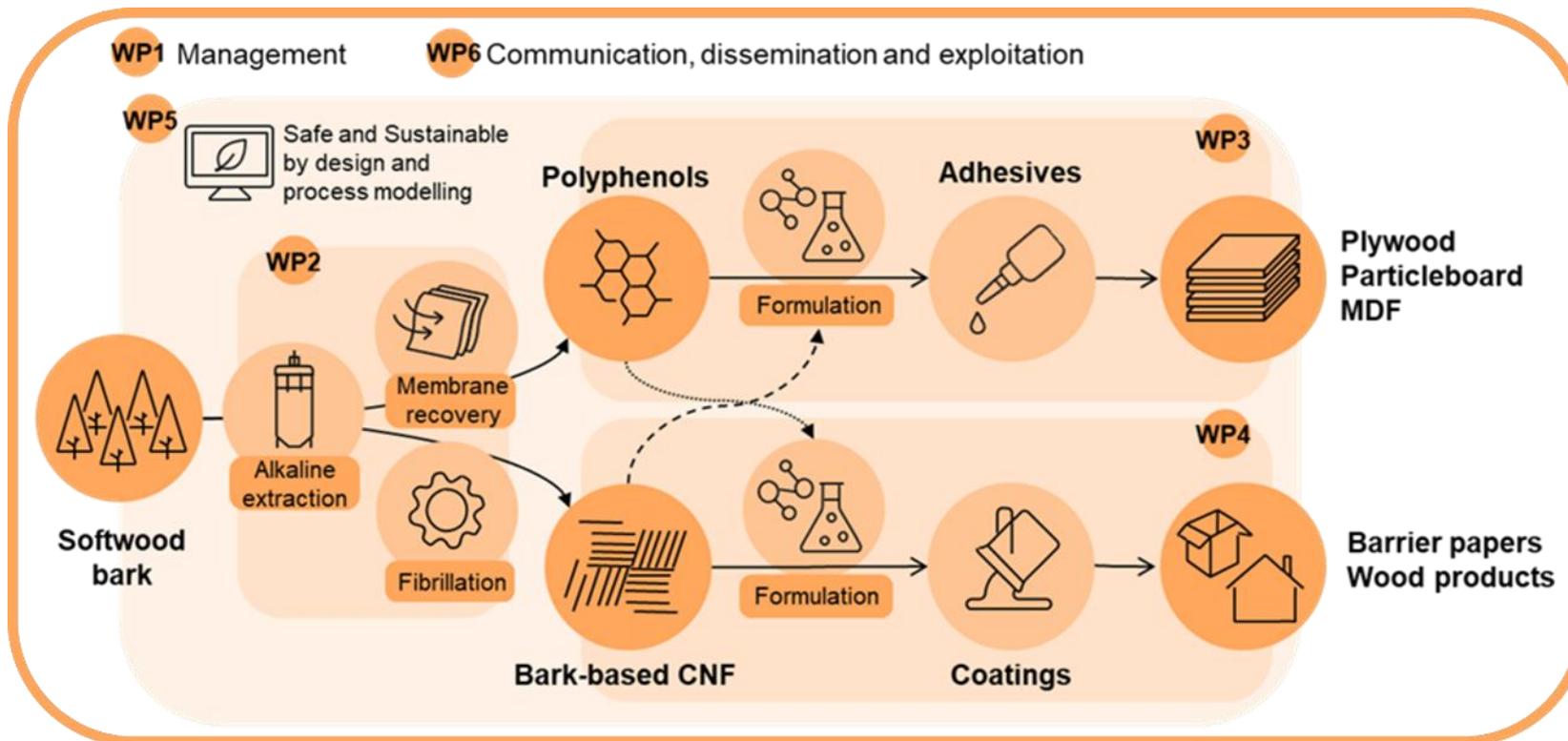
SuperBark will utilize **bark residues that are typically combusted** for energy generation to develop bio-based adhesives and coatings. The **new bio-based products will be recyclable at the end of their service life**, further improving their sustainable profile.



Improve health and safety of consumers

SuperBark products will **reduce demand for harmful fossil-based chemicals and polymers**. Replacing e.g., formaldehyde and PFAS from adhesives and coatings with bark-based alternatives, will **improve public health by eliminating consumer and occupational exposure** to these harmful chemicals.

Project scheme

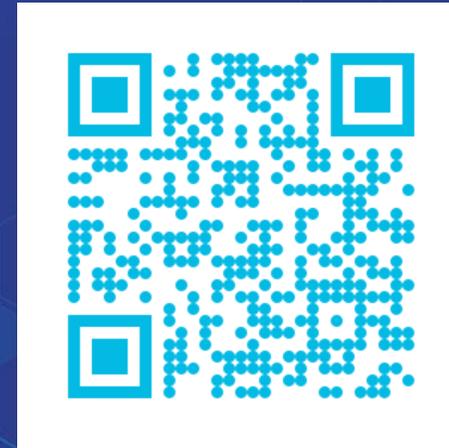


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