

To learn more about Rehap:

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Rehap's partners:



Associated partner:



www.rehap.eu

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Systemic approach to reduce energy demand and CO₂ emissions of processes that transform agroforestry waste into high added value products



The background: The growing bio-economy

Agricultural and forestry residues are being used in many new innovative ways. This bio-based chemical industry is now showing greater growth than the petrochemical industry. The development of chemicals and materials from lignocellulosic biomass (plant dry matter) is a particularly important area in terms of research, thanks to the abundance of these resources and because they do not compete with the food chain. However, the conversion of lignocellulosic biomass is not easy and still has little commercial viability.

REHAP aims to strengthen the European bio-economy industry by creating novel materials from agricultural and forestry waste, and will consider how they can be used commercially in the green building sector.

The opportunity: Moving towards a resource-efficient Europe

In the EC's Bioeconomy Strategy, forestry and agricultural wastes are crucial. REHAP will use **bark** and **straw** to develop its products.

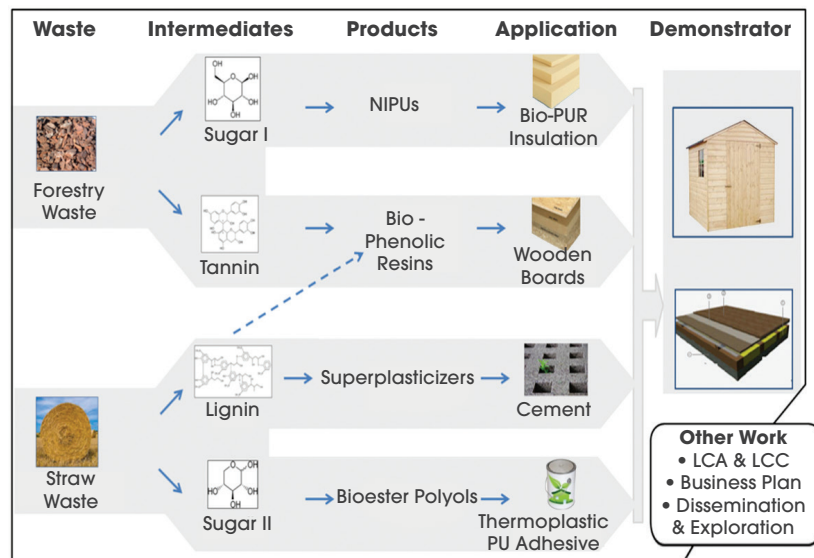
Bark is well suited for developing eco-friendly, high-value industrial products. As it contains bioactive molecules, there is a huge potential for applications in medicines, cosmetics, industrial chemicals and plant protection products.

There is an estimated 50 to 110 million tonnes of **straw** dry matter available in the EU every year. In the right hands this is an incredible resource: wheat straw for instance contains roughly 10% silica, in addition to 40% cellulose and 20% lignin, all useful in a variety of soft applications.

The objectives: How Rehap will meet the challenge

The project has five technical approaches to meeting its objectives:

- Develop methods to convert natural wastes into sustainable polyurethanes. These can be used to develop insulation foams and adhesives, as well as fire-retardant products.
- Develop new high-performance bio-resins to produce eco-friendly wooden panels.
- Produce eco-friendly sustainable cement with improved properties.
- Design and assemble an environmentally sustainable and fire-resistant construction solution.
- Demonstrate the development of eco-friendly products and their sustainability and business potential compared to existing solutions.



The impacts

- Decreased use of fossil resources and energy in the process industry
- Creation of new jobs in the bio-based products sector
- Improved innovation capacity and the integration of new knowledge at EU level
- Improved industrial competitiveness

Meeting EC targets: Creating sustainable patterns of consumption and production

The new processes that will be developed within the REHAP project will facilitate a significant step towards a better use of natural resources and thus will Europe meet the three priorities of its 2020 Strategy:

- Smart growth through the development of an economy based on knowledge and innovation
- Sustainable growth promoting a resource-efficient, green and more competitive economy
- Inclusive growth fostering a high-employment economy