



BIONEER

Scaled-up production of next-generation carbohydrate-derived building blocks to enhance the competitiveness of a sustainable european chemicals industry



BIONEER Sister and Related Projects

At the heart of Europe's green transition, **BIONEER** is pioneering new ways to turn sustainably sourced lignocellulosic biomass into novel platform chemicals that can help decarbonize some of the most challenging industrial sectors — from liquid plastics used in personal care products to furniture coatings and specialty materials. By moving beyond first-generation carbohydrate-derived chemicals, the project brings together biotechnology, biochemistry, and chemistry expertise to scale up the production of innovative bio-based building blocks with enhanced functionalities. These BIONEER Building Blocks (BBB) are designed to replace harmful fossil-based substances such as bisphenol A and its derivatives, alkyl acrylates, vinyl pyrrolidine, vinyl acetate, and siloxanes, supporting the shift toward safer, more sustainable alternatives.

Building on the remarkable achievements of the EnXylaScope and PERFECOAT projects, BIONEER represents the next crucial step - advancing key results from research to industrial demonstration and bringing them closer to market deployment.

In this collaborative spirit, BIONEER is proud to connect with a network of sister projects across Europe. By linking with other EU-level initiatives, including CBE-JU, Horizon Europe, and LIFE projects, we aim to foster synergies, share knowledge, and explore opportunities for joint innovation. Together, these projects form a dynamic community committed to transforming Europe's bioeconomy and driving the transition toward a more sustainable, circular, and resilient future.

Would like to join our network for collaborative Dissemination and Communication activities?

Contact our designated team below:

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Let's discover the projects involved in this cluster!



The goal of the [PERFECOAT](#) project has been to develop and validate a new generation of industrial wood and decorative coatings with significantly more than 25% bio-based components that meet and even surpass the current quality and sustainability standards.



The goal of [EnXylaScope](#) is to establish an efficient xylan extraction process and to discover enzymes and establish efficient production systems to produce the enzymes for tailoring the xylans to produce linear xylans (platform polymer) and to modify them to produce xylans suitable for the personal care and cosmetics sectors.



[PYROCO₂](#) demonstrates the scalability and economic viability of an innovative bioprocess to produce acetone from industrial CO₂ and renewable electricity derived hydrogen, as a platform for manufacturing sustainable chemicals and materials.



The Flagship project [Sweetwoods](#) demonstrated on an industrial level the successful and profitable production of high-purity lignin and C5 and C6 carbohydrates from hardwood by establishing a first-of-the-kind biorefinery.



The aim of the [Vehicle](#) project is to valorise extensive quantities of hemicellulosic and cellulosic sugars from lignocellulosic biomass into high-value end products.



[NEXT-STEP](#) aims to realize a sustainable, safe, and affordable way to produce groundbreaking bio-based chemicals at large scale to improve the sustainability and recyclability of Polyurethane products and open up new possibilities for bio-based Polylactic acid co-polymers.

Partners



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