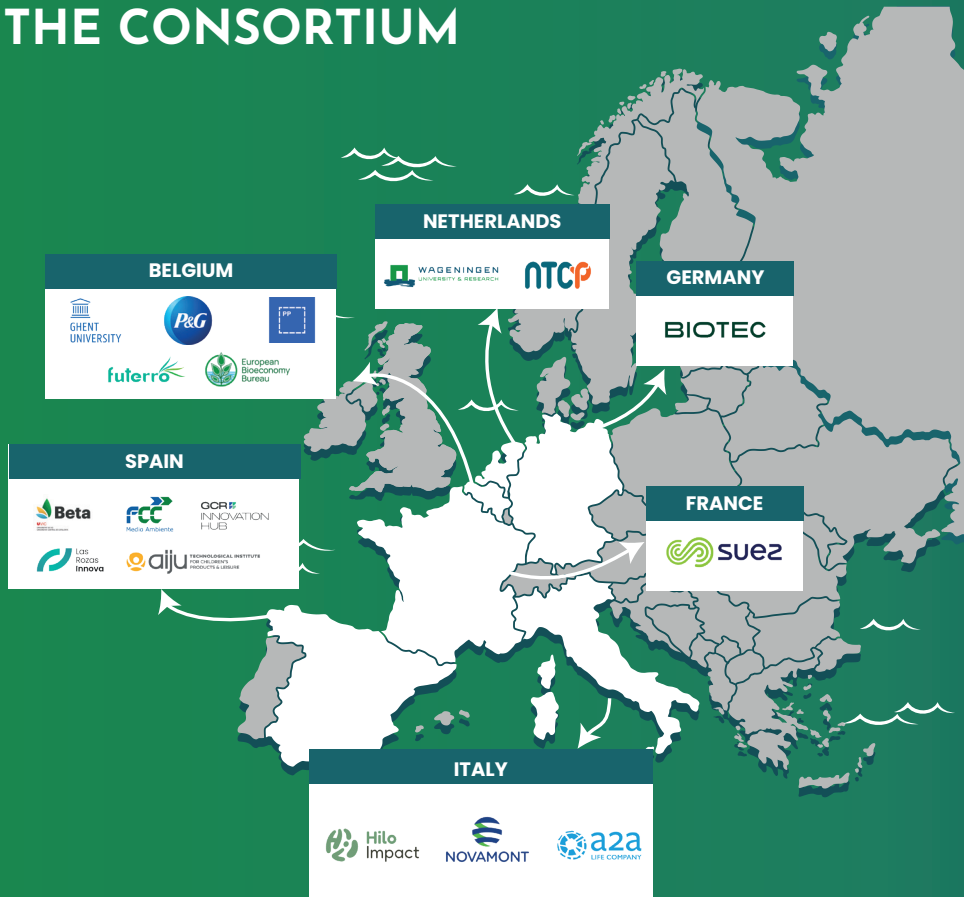


THE CONSORTIUM



THE ADVISORY BOARD

A highly qualified and representative Advisory Board has been established to monitor the progress of the project and offer guidance during its implementation as well as dissemination of the project outcomes.



Promoting innovation for sustainable sorting and recycling of dedicated bio-based plastics

PROSPER is a collaborative research and innovation project financed by the Horizon-Circular Bio-Based Europe Joint Undertaking under Grant Agreement 101157907, led by the University of Ghent, Belgium.



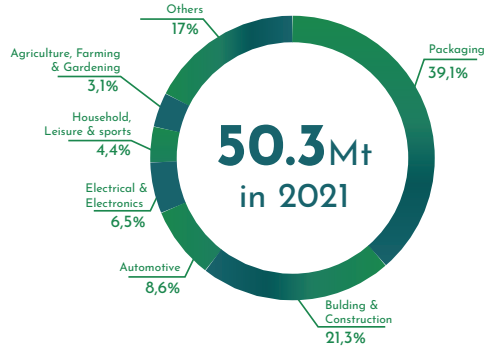
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The project is supported by the Circular Bio-based Europe Joint Undertaking and its members under grant agreement N° 101157907. Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU. Neither the European Union nor the CBE JU can be held responsible for them.
The total cost of the project is estimated to be €10,196,836.25 of which the CBEJU contributes €7,498,855.25

Bioplastics include plastics which are biodegradable in controlled and measurable environments, and which are made from feedstocks that are usually, but not always, renewable or from plant-based sources. The global production and consumption of bioplastics, as defined here, accounts for approximately 1% of global plastics production and consumption.



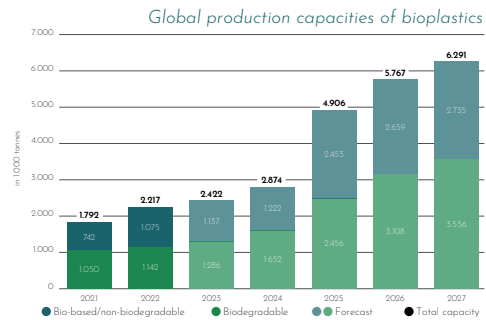
European Consumption of Plastics
Source: European Bioplastics Association

However, the quantities of bioplastics entering waste streams are very small, which poses a significant challenge for separate sorting and recycling. The limited volumes do not justify investments in specialized sorting facilities. Therefore, the ambition of PROSPER is to demonstrate a successful solution of technically feasible and affordable **bio-based plastic sorting and recycling** infrastructure and consequently affordable and realistic EPR fees.



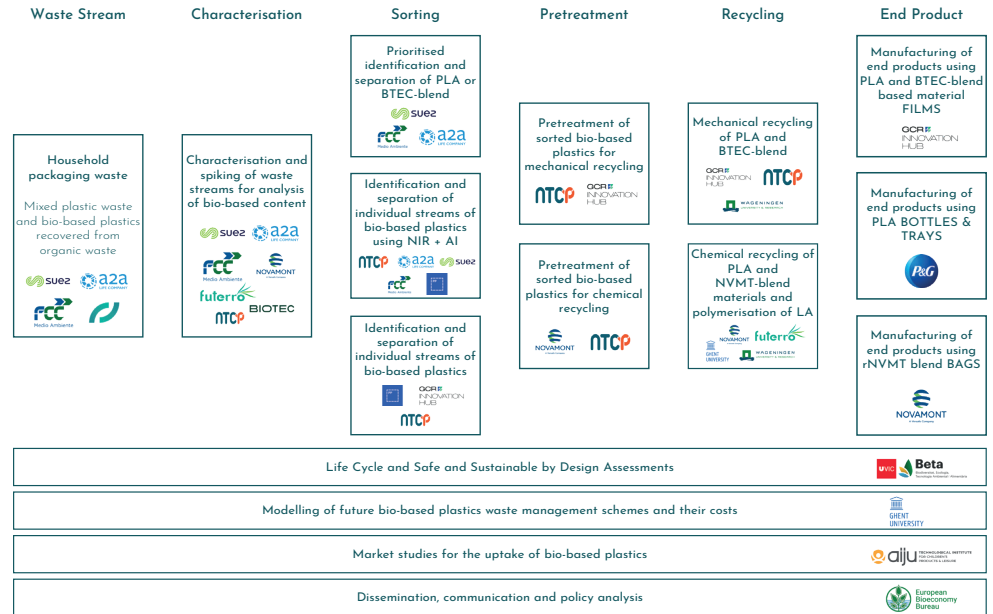
As public and political concern grows over the climate impact and littering of plastics, and as technologies allow for the use of renewable, plant-based, and waste-based feedstocks to create plastics, **the global production of bioplastics is on the rise.**

Despite their potential benefits, effective valorization of bioplastics after use is essential to fully realize their environmental advantages. This can be achieved through co-collection with organic waste for composting or anaerobic digestion or, in the case of packaging, through mechanical or chemical recycling, which requires separate collection and sorting of the waste.



PROSPER aims to revitalize bio-based plastics in the packaging market by demonstrating complete value chains for circular bio-based plastics. The initiative will focus on proving and minimizing the actual costs associated with collecting, sorting, and recycling these materials, ultimately leading to the calculation of Extended Producer Responsibility (EPR) fees.

The PROSPER project covers the entire value chain of bio-based plastics sorting and recycling. **It will demonstrate a system to achieve a Technology Readiness Level (TRL) of 7** by establishing pilot programs in partner countries to sort, and chemically and mechanically recycle bioplastics.



PROSPER will demonstrate sorting of bio-based plastics at **4 different waste management plants**. The sites are located in Spain (**FCCMA Granada**), Italy (**A2A**) and in France (**SUEZ**). At the **NTCP** plant in the Netherlands sorting will be tested using NIR (Near Infrared) and AI assisted methods.

Before recycling, sorted bio-based plastics will undergo pre-treatment to prepare the plastic fraction for subsequent mechanical or chemical recycling processes. At **NTCP**, the pretreatment from shredding via washing and flake separation processes will be explored at relevant scale.

The mechanical recycling of PLA supplied from **FUTERRO** and bioplastic blends supplied by **BIOTEC** focusses on developing affordable methods to reprocess and reuse bio-based plastic cups, trays and films recovered from post-consumer household waste into new products. The process is developed by **Wageningen University & Research** and **GCR**.

The chemical recycling process will be undertaken by several partners and involve the depolymerisation of **FUTERRO** PLA via **FUTERRO**'s patented LOOPLA technology and **NOVAMONT** blends commonly used for bags will be undertaken by **Ghent University** and **NOVAMONT**.

Once the materials are recycled back into their polymer forms, tests designed to evaluate the suitability of the recycled polymer for reuse will be conducted at **Procter & Gamble**'s state-of-the-art packaging prototyping facility. **AIJU** will look into the consumer acceptance, and **BETA** will assess the safety and sustainability of such materials. **CITEO** will assess possibilities for EPR systems.

Key external stakeholders will form an Advisory Board to monitor the project's progress and provide recommendations for improvement. Additionally, communication and dissemination efforts will be implemented to ensure that the project is widely recognized among key groups and the general public.