

# CONSORTIUM



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Sustainable  
PlastiC biorefinery  
for reCyclable and  
biodegradabLE  
packaging



Turning non-recyclable  
mixed plastic waste into  
next-generation  
biodegradable and  
recyclable packaging.



Funded by the European Union under grant agreement number 101178389.  
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# ABOUT UPCYCLE

UPCYCLE is a Horizon Europe project that turns non-recyclable mixed plastic waste into next-generation highly recyclable and/or biodegradable packaging materials. Building on the H2020 UPLIFT results, which reached TRL5-6 (small pilot scale), UPCYCLE advances these technologies to TRL7, addressing key challenges in scalability, process intensification, and industrialisation. With 19 partners across 10 countries and 7.9€ million in funding, the project focuses on four real-world packaging use-cases (salad and cheese films, beverage bottles, and personal-care rigid packaging). By combining chemo-enzymatic depolymerisation, microbial upcycling, and eco-design principles, UPCYCLE aims to cut greenhouse-gas emissions by 30% and reduce production costs by up to 40% compared to current bioplastics.

## TARGETED APPLICATIONS



Vegetable flexible packaging (salads)



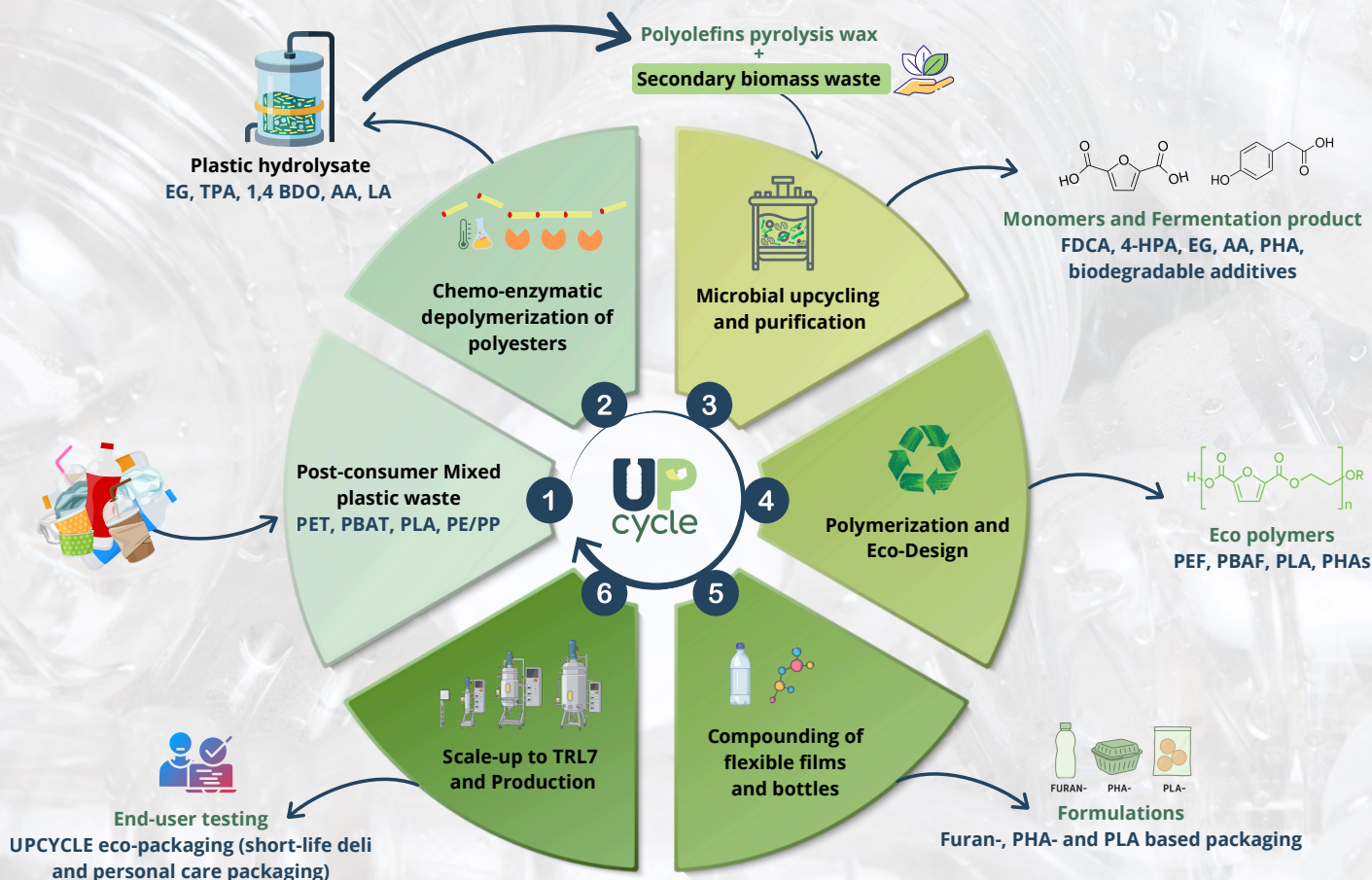
Short-lifetime deli packaging (cheese)



Beverage bottles (e.g, liquid kefir)



Personal care bottles (shampoo)



## IMPACT

- **Pathway 1:** Deliver TRL7 polymer systems (films and bottles) that are both recyclable (chemo-enzymatic recycling) and more biodegradable (industrial / home composting where applicable). Targets include -30 percent GHG vs. commercial bioplastics and up to 40 percent reduction in MSP.
- **Pathway 2:** Enable circular value chains that reduce reliance on incineration/landfill by introducing credible end-of-life options, supporting European autonomy and competitiveness in bioplastics.
- **Pathway 3:** Provide data, predictive tools, and evidence to standards, labels, and EU policy (Plastics Strategy, Single-Use Plastics, CEAP), supporting trustworthy market claims and deployment.