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POLYMEER Project

BREWERS SPENT GRAIN AS MAIN BY-PRODUCT FOR DEVELOPMENT OF NOVEL, HIGHPERFORMANCE BIO-BASED POLYMERS, POLYMER BLENDS, AND CO-POLYMERS

Topic: HORIZON-JU-CBE-2023-R-04

Granting authority: Circular Bio-based Europe Joint Undertaking (CBE JU)

Grant: 4,878,092.50 €

Starting date: 1 September 2024

Project duration: 48 months

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POLYMEER aims to establish a sustainable **bio-based value chain** for **bioplastic** products, using **brewers' spent grain** (BSG) as feedstock. Focused on **agricultural films**, brewery **tertiary packaging**, and **automotive textiles**, the project designs bioplastics to be recyclable and/or biodegradable for **environmental sustainability.**
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8 countries
14 partners

RTOs

- Università degli Studi di Perugia
  *Project coordinator
- Sapienza Università di Roma
- NEXT TECHNOLOGY TECNOTESSILE
- AIMPLAS
- University of Twente
- Fraunhofer-Gesellschaft

SMEs

- Bio Base Europe Pilot Plant
- LOMARTOV
- Gate2Growth
- Bio-mi

Large companies

- Zabala Innovation
- Normec OWS
- Birra Peroni
- Borgstena

Italy
Spain
Croatia
Germany
Belgium
Netherlands
Portugal
Denmark

Context & Objectives

- Bioplastics represent just 1,5% of global plastic production
- Need of advancing the production of biobased, recyclable and/or **biodegradable bioplastics**
- Developing new biobased polymers, copolymers and polymer blends based on BSG
- Providing high added value materials for three demanding applications: **agriculture sector, tertiary packaging, and automotive textile**
- Enhancing **economic sustainabilityby** reducing reliance on finite fossil resources, lowering production costs, and creating new markets

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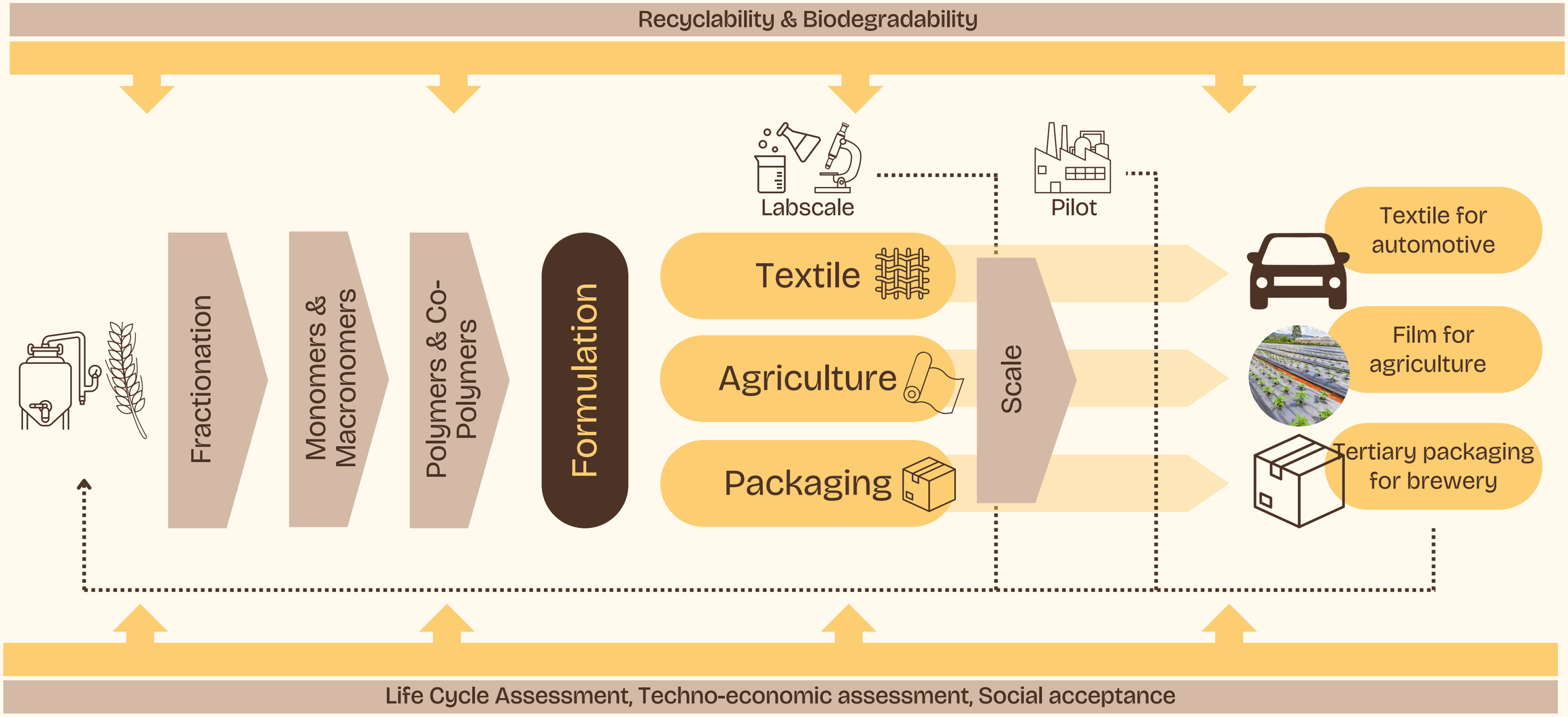
The POLYMEER concept



Expected outcomes

10% of BSG in Europe is used as **feedstock** for the production of **bioplastic**

>30 industries in Europe produce final applications/products with **POLYMEER bioplastics** as main component

>20 European industries in the bioplastics value chain use more **sustainable methods** based on POLYMEER insights

The three POLYMEER applications reach the market:
>50 consumers of **film** for agriculture uses biodegradable and BSG based
5 breweries replace plastic tertiary packaging by BSG based bioplastic
>10 automotive brands demand BSG based textile

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Benefits to society and the environment

- Improved sustainability, safety and circularity when compared to fossil-based plastics
- Enhanced environmental performance across the value chain
- Public awareness and eco-conscious consumer choices
- Economic sustainability, portfolio diversification, higher competitiveness

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