Bio-Based Continuous Production for Sustainable Polyurethane Industry

The EU-funded project Bio4PURConti (Bio-Based Continuous Production for Sustainable Polyurethane Industry) aims to develop the world's first continuous production process for bio-based aniline. Aniline is a key raw material for the plastics and chemical industry, notably for MDI (methylene diphenyl diisocyanate), a core building block for polyurethanes. Fossil-based aniline production generates tonnes of CO_2 emissions annually worldwide. Bio4PURConti targets bio-aniline with a reduced product carbon footprint.

By using plant-based sugars from hardwood biomass, it offers a renewable feedstock pathway. The project builds on 10+ years of collaborative research from proof-of-concept (Bio4PUR) via optimization (Bio4PURPro) and fed-batch demonstration (Bio4PURDemo) to industrial-scale continuous implementation: Bio4PURConti. The project scales from lab to 1.5 m³ semi-industrial fermentation demonstration at Bio Base Europe Pilot Plant (Ghent) and Covestro (Leverkusen), integrating cell recycling, real-time analytics and downstream processing. The resulting bio-based aniline is fully drop-in compatible with existing polyurethane value chains.

The 10-partner consortium, spanning 7 countries, brings together leading industrial and academic organisations: Covestro Deutschland AG (Germany), Fibenol Imavere OÜ (Estonia), University of Stuttgart (Germany), Bio Base Europe Pilot Plant VZW (Belgium), Center for Advisory Systems in Technology, Dortmund e.V. (ZEDO) (Germany), Norwegian University of Science and Technology (NTNU) (Norway), Axel'One (France), VTT Technical Research Centre of Finland Ltd (Finland), Cluster Industrial Biotechnology (CLIB) (Germany), and Asociación Española de la Innovación en el Marketing y la Inversión Sostenible (AEIMIS) (Spain). The project has a total budget of 8.4 million euros, with 7 million euros in EU funding, started 1 June 2026 and runs for 42 months.

10	7	42	1.5 m³	8.4
PARTNERS	COUNTRIES	MONTHS	DEMO SCALE	MILLIONS

LINKEDIN
@Bio4PURConti-project

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WEBSITE
www.bio4purconti.eu



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