

NEWSLETTER

#2

FROM STRATEGY TO IMPLEMENTATION

Project results, pilot actions and new knowledge
for greener chemical production in Central Europe

SEPTEMBER 2026

CIRCULAR PLASTICS

LOW-CARBON CHEMISTRY

GREENER FINE CHEMICALS



ABOUT THE PROJECT

Project at a glance

GreenChemForCE supports the transition of Central Europe's chemical industry from linear production streams to circular, resource-efficient and climate-neutral systems. The project brings universities, companies and innovation-support organisations together to turn research into practical strategies and tested solutions.

9 PROJECT PARTNERS	4 COUNTRIES	4 PILOT ACTIONS
€1.77m PROJECT BUDGET	80% ERDF CO-FUNDING	06/2024–11/2026 DURATION

Three connected areas of action

01 Circular plastics Keeping materials in use through eco-design, collection, sorting and high-quality recycling.	02 Low-carbon chemistry Reducing, avoiding and productively using CO ₂ while improving process efficiency.	03 Greener fine chemicals Using safer solvents, smarter catalysis, flow processes and recovery of valuable materials.
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Project partnership

Charles University (Lead Partner, Czechia)	Association of Chemical Industry of the Czech Republic	Zentiva k.s. (Czechia)
Servier Research Institute of Medicinal Chemistry (Hungary)	Eötvös Loránd University (Hungary)	TU Wien (Austria)
University of Ljubljana (Slovenia)	Chamber of Commerce and Industry of Štajerska (Slovenia)	VTL GmbH - Vienna Textile Lab (Austria)

THIS ISSUE Highlights the project's move from analysis to implementation, including completed strategy documents, pilot action reports and a new external publication.

FOCUS AREA 01

Circular plastics: closing material loops

Recycling is essential, but it cannot create circularity on its own. The project's plastics strategy combines life-cycle thinking, green chemistry, eco-design and coordinated regional action.

A four-pillar transition framework

Regulation	Collaboration	Skills & behaviour	Infrastructure
Clear rules, eco-modulated producer responsibility and green procurement.	Cross-border partnerships, shared standards and industrial symbiosis.	Eco-design, life-cycle assessment, reskilling and awareness.	Better collection, advanced sorting, recycling and traceability.

Pilot action: circular polyamide 6

The pilot work tested pathways for returning nylon-based waste to high-quality production. Laboratory-scale experiments assessed suitable waste streams, raw materials and recycling procedures, while cross-border cooperation linked Czech textile waste with established polyamide 6 recycling expertise in Slovenia.

- Textile waste streams were assessed for compatibility with the ECONYL® regeneration process.
- Depolymerisation and purification routes support the recovery of caprolactam for new polyamide 6.
- The next step is scale-up, improved collection and industrial validation of the most promising procedures.

KEY MESSAGE Circular plastics depend on coordinated decisions across the entire value chain - from product design and material selection to collection, recycling and renewed market uptake.

Explore the outputs

OUTPUT	DOCUMENT
D1.1.1	Analysis Report: current state of plastic management →
D1.1.2	Strategy for Sustainable Plastic Management in Central Europe →
D1.2.1	Pilot Action Report: sustainable plastic management →

FOCUS AREA 02

Low-carbon chemistry: reduce, reuse and redesign

GreenChemForCE investigates how chemical production can reduce greenhouse gas emissions, improve energy and material efficiency, and use CO₂ or biomass as valuable inputs.

Four pathways tested by the project

CO ₂ utilisation	Process efficiency	Biomass routes	Biotechnology
Transforming captured CO ₂ into useful molecules and high-value materials.	Finding emission hotspots and improving energy- and resource-intensive steps.	Replacing selected fossil-derived feedstocks with renewable alternatives.	Using microorganisms for biomass, fragrances and more sustainable dyes.

From technical options to industrial relevance

The pilot activities demonstrate how coordinated cross-border work can accelerate decarbonisation. Project partners have explored CO₂ capture and conversion, biomass-based alternatives, process optimisation and biotechnology-based production routes.

- University of Ljubljana and Belinka Perkemija investigate CO₂ capture through lime carbonation and useful calcium carbonate production.
- TU Wien and Vienna Textile Lab explore microbial routes that incorporate CO₂ into biomass and support lower-carbon products.
- Charles University and Servier examine biomass-derived molecules, including Cyrene®, for pharmaceutical intermediates and discovery chemistry.

KEY MESSAGE A lower-carbon chemical sector requires a portfolio of solutions: avoiding emissions where possible, improving processes, and using carbon or biomass more productively where technically appropriate.

Explore the outputs

OUTPUT	DOCUMENT
D2.1.1	Analysis Report: low-carbon pathways for the chemical industry →
D2.1.2	Strategy for a Low-Carbon Chemical Industry in Central Europe →
D2.2.1	Pilot Action Report: technologies for minimising CO₂ impact →

FOCUS AREA 03

Greener fine chemicals: less waste, safer processes

Fine-chemical and pharmaceutical production can be made cleaner by reducing solvent demand, improving selectivity, recovering valuable materials and choosing more efficient reaction technologies.

Where innovation can make a difference

Greener solvents Water-based, bio-derived and alternative solvent systems.	Smart catalysis Lower precious-metal demand, improved selectivity and reusable catalysts.	Flow & biocatalysis Efficient reactions with safer conditions and reduced energy demand.	Material recovery Recovering palladium and other valuable materials from waste streams.
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Pilot action results

Waste reduction and solvent management.

The consortium tested mechanical pre-treatment of microbial biomass, greener solvent systems and methods for recovering valuable metals. The work shows that lower solvent use, reduced side-product formation and high-efficiency palladium recovery can be combined into scalable process improvements.

Advanced technologies for effective processes.

A complementary pilot explored reusable catalysts, flow chemistry, ball milling, biocatalysis and alternative reaction conditions. These approaches support cleaner synthesis routes without compromising the performance expected in industrial research and development.

KEY MESSAGE Green chemistry becomes practical when improvements in solvents, catalysis, selectivity, process design and material recovery are assessed as one connected system.

Explore the outputs

OUTPUT	DOCUMENT
D3.1.1	Analysis Report: green production of fine chemicals →
D3.1.2	Strategy for Green Production of Chemical Products in Central Europe →
D3.2.1	Pilot Action Report: reduction of waste in fine-chemical production →
D3.3.1	Pilot Action Report: advanced technologies towards effective processes →

FEATURED PUBLICATION

A guide on making circular plastics a reality

A new Open Access Government commentary translates the GreenChemForCE plastics strategy into a concise implementation message for policy makers, industry, researchers and regional actors.

AUTHORS Dr Damjan Krajnc and Dr Lukáš Rýček | First published 25 June 2026

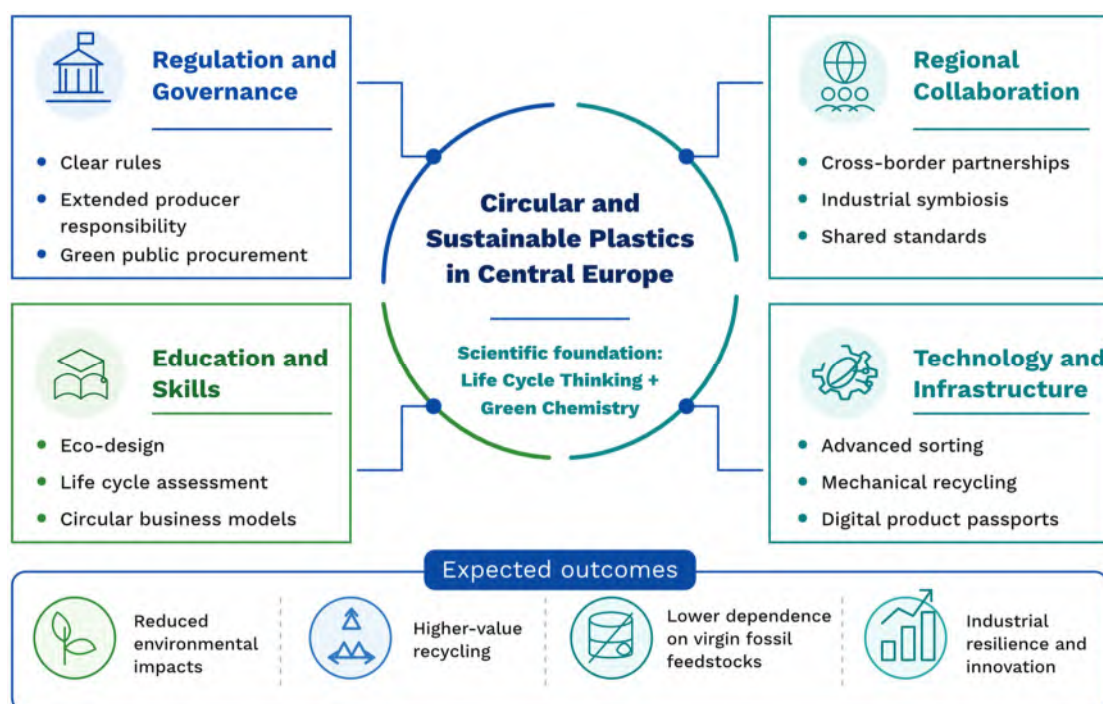


Figure 1. Four levers for circular plastics in Central Europe. Source: Krajnc & Rýček (2026), CC BY-NC-ND 4.0.

Why the article matters

The article argues that recycling alone is insufficient. Circular plastic value chains require coherent regulation, cross-border cooperation, relevant skills, investment in collection and recycling infrastructure, and transparent material information. Together, these conditions can reduce dependence on virgin fossil feedstocks and strengthen industrial resilience in Central Europe.

Clear rules	Regional loops	Practical skills	Right technology
Create demand for prevention, reuse and high-quality recycled materials.	Connect waste streams, recyclers, producers and shared quality criteria.	Embed eco-design, life-cycle assessment and circular business models.	Prioritise efficient recycling and traceability matched to each stream.

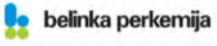
[Read the full Open Access Government article →](#)

DOI: [10.56367/OAG-051-12507](https://doi.org/10.56367/OAG-051-12507)

NETWORK IN ACTION

Associated partners featured in this issue

Associated partners connect the project's research with industrial needs, regional networks and implementation opportunities. The following organisations are highlighted for their links to the pilot activities presented in this newsletter.

 Santiago chemikalie, s.r.o. Supports greener industrial scale-up, including substitution of critical solvents and less sustainable metal-based processes.	 CO₂ Czech Solution Group, z.s. Connects industrial and scientific actors working on CO₂ reuse, emissions reduction and circular material flows.
 Czech Technology Platform Plastics Links plastics producers, processors and researchers working on collection, recycling and renewable feedstocks.	 AquafilSLO, d.o.o. Contributes industrial expertise in polyamide 6 circularity, recycled nylon and renewable or secondary feedstocks.
 Belinka Perkemija d.o.o. Supports research on CO₂ capture through lime carbonation and intensified, lower-carbon processing.	 EGIS Pharmaceuticals Brings an industrial pharmaceutical perspective to greener solvents, atom economy and implementation of project results.
COLLABORATION By combining academic insight, industrial know-how and regional coordination, GreenChemForCE helps promising solutions move beyond isolated experiments and towards wider uptake.	

LOOKING AHEAD

From tested solutions to lasting impact

As GreenChemForCE approaches the final phase of implementation, the focus is shifting towards consolidation, transfer and wider uptake of the project's strategies and tested solutions.

Priorities through November 2026

01	Scale and validate	Advance the most promising plastics, CO ₂ and fine-chemical approaches towards industrially relevant conditions.
02	Transfer knowledge	Share practical guidance, reports and lessons learned with companies, policy makers, researchers and educators.
03	Strengthen uptake	Support the use of project strategies in regional networks, partner organisations and future collaborative initiatives.
04	Build continuity	Maintain cross-border cooperation and identify follow-up opportunities after the funded project period.

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