



The Innovation Compass of East Netherlands

Circular



≡ provincie
Gelderland



Relevance: Scarce raw materials, CO₂ reduction and strategic autonomy are forcing us to adopt smart, circular chains. The East Netherlands is demonstrating that circularity and broad prosperity can go hand in hand. We are aligned with the National Circular Economy Agenda and deliver on ECC goals: innovation gap (circularity by design, new processes and materials), decarbonisation & competitiveness (less input, lower costs) and security (less dependence on import flows).

Key technologies and developments: Ecodesign and digital twins for products and factories, high-quality mechanical/chemical/enzymatic recycling (plastics), biobased materials and fibre crops (construction), data-driven chain management (UPV/traceability), repair/refurbish/remanufacture business models, industrial AI for material efficiency.

Ambition 2030: The East Netherlands is a leading demonstration region for four tracks: Smart Manufacturing, Plastics, Textiles and Biobased Construction. We are accelerating the transition from linear to circular through redesign, reuse and high-quality recycling, and building exportable knowledge/technology for other EU regions.

Result: Less consumption of primary raw materials, less waste, competitive chains and more value.

'From waste to value: the East Netherlands makes circular chains profitable, scalable and relevant to Europe.'

Ecosystem and strengths: Complete value chains are present: from collection and recyclers to converters and end producers. Knowledge and testing infrastructure (including Polymer Science Park (PSP), ThermoPlastic Composites Research Centre (TPRC)/ThermoPlastic Composites Application Centre (TPAC), Pioneering (construction), Cemtex, Krimppp and a broad SME network in manufacturing, plastics (including RPP Kunststoffen, Leadax, Timmerije and Korrels) and textiles (including Frankenhuis, Enschede Textielstad and Spinning Jenny). Links with Digital Industry (data/AI) and Smart Energy (electrification) accelerate the impact.



Expected results:

- 30% recycled/biobased share in plastic products prepared
- 3 regional roadmaps active (plastics, textiles, biobased construction)
- 10 projects with a role for companies in the East Netherlands
- >20 living labs/pilots operational

Appendix – Circular

1. Ambition for 2030

The Netherlands aims to be 50% circular by 2030 and fully circular by 2050. The East Netherlands is demonstrating that this is not only good for the environment, but also for broad prosperity and economic earning capacity. We are building circular chains in four sub-themes: manufacturing, plastics, textiles and construction.

Our ambition is for companies in the East Netherlands to become circular themselves and for the knowledge and innovations that arise here to be applicable elsewhere in the Netherlands and Europe. In this way, we are contributing to a new economic model in which reuse, redesign and new materials are central.

2. Challenges & transitions

The transition from linear to circular touches on several urgent issues: scarcity of raw materials, CO₂ reduction, energy-intensive production and geopolitical dependencies. For SMEs in the East Netherlands, this is both a challenge and an opportunity to develop new markets.

3. Impact & SDG's



Fair work & economic growth: circular chains create new jobs.



Industry, innovation & infrastructure: circular manufacturing industry, plastics and textile chains.



Responsible consumption & production: extending product lifespans, innovative recycling and biobased solutions.



Climate action: reduction of CO₂ and raw material use.



Partnerships: chain cooperation in the region and Europe.

4. Sub-themes & example projects

- **Smart manufacturing industry:** manufacturing companies are working on circular production and new business models (Fieldlab Circular Innovations, Cinergie). AI and data are playing an

increasingly important role. Potential: €666 million in additional value per year and 483,000 tonnes less CO₂.

- **Plastics:** The East Netherlands has the entire plastics chain, from collection to recycling and production. Examples: Polymer Science Park, TPRC and TPAC. Innovations focus on biobased plastics, mechanical, chemical and enzymatic recycling and comply with EU blending standards (30% in 2030).
- **Textiles:** a strong history and future. Innovations in recycling (Frankenhuis, SaXcell), sustainable yarns (Spinning Jenny, Enschede Textielstad), and new business models such as repair and reuse. The circular textiles roadmap connects producers, designers and sorters.
- **Construction:** circular construction with biobased materials from agriculture, such as flax and hemp. Examples: Pioneering (200+ companies), Plantics and Miscancell (biobased building materials), Omlab, Krimppp and The Green East.

5. Contribution to the Netherlands & Europe

National: The East Netherlands provides roadmaps for textiles, plastics and biobased construction that can serve as a model for the whole country. The circular manufacturing industry strengthens SMEs and contributes to climate goals.

European: our region is an exporter of circular knowledge and technology, from plastics recycling to biobased construction. Cross-border cooperation with Germany and participation in EU networks such as Vanguard increase scalability.

6. Ecosystem

- **Knowledge institutions:** University of Twente (circular manufacturing), Saxion (textiles, biobased), WUR (agrifood & biobased), HAN (biocentre), Windesheim (plastics & manufacturing).
- **Clusters & networks:** Polymer Science Park, DCPV, The Circular Rubber Platform, Pioneering, KRIMPPP, regional alliances with >100 companies.
- **Companies:** ranging from Apollo Vredestein, Wavin and DSM to circular pioneers such as RPP Kunststoffen, Timmerije, Leadax, Korrels, Spinning Jenny, Interface and Enschede Textielstad
- **Cross-sectorale strength:** links with agriculture (fibre crops), plastics and digitisation.

7. Goals & indicators for 2030

- 3 regional roadmaps active (plastics, textiles, construction).
- 10 large-scale projects.
- >20 living labs and hubs operational.

8. Investing in innovation

- **Government:** national standards (plastics/textiles), acceleration of biobased construction (NABB), and support for SMEs in circular business models. Support for shaping circular product chains.
- **Europe:** programmes within ECF and Horizon, mainly focused on circular materials and chains. Programmes to shape and scale up circular product chains.
- **Region:** strengthening networks and hubs, focus on practical research and training in new materials.

In addition, long-term financing instruments are needed for new chains, as well as pilots with alternative revenue models (such as circular construction contracts and extended producer responsibility, return flow utilisation, and service life extension).