RegioGreenTex

Regions for green textiles

Paola Fontana – Po.in.tex
Matteo Lepri – Next Technology Tecnotessile

REGIO GREEN TEX

B2B TORINO FASHION MATCH 2025
July 3rd, 2025 - Turin, IT

Co-funded by the European Union

«Strengthening textile circularity in Europe's regions»

Coordinator:

EURATEX

In the framework of the **European Green Deal**, RegioGreenTex is a project promoting the **collaboration** in research and development for the **textile industry** between the four major sectors of society – industry, government, research institutes, and the public in establishing a systematic **circular economy** **business model** across the EU

I3 Interregional Innovation Investments Instrument

REGIO GREEN TEX

Co-funded by the European Union

The Numbers

43 Partners

11 Regions

8 Countries

5 Regional Hubs

26 Pilot Project of the SMEs

- Flanders (BE)
- East Netherlands (NL)
- Hauts-de-France (FR)
- Auvergne Rhone-Alpes (FR)
- Piedmont (IT)
- Tuscany (IT)
- Portugal - Norte (PT)
- Nord Est Romania (RO)
- Catalonia (ES)
- Valencia (ES)
- Västra Götaland (SE)

Città Studi BIELLA

po.in.tex Polo Innovazione Tessile

NEXT TECHNOLOGY TECNOTESSILE SOCIETA' NAZIONALE DI RICERCA R. L.

Coordinator:

EURATEX

REGIO GREEN TEX

Co-funded by the European Union

Objectives

1. Map the needs and potentiality in the implementation of a circular economy among European regions and clusters and their different levels of economic development.

2. Build a dynamic recycling textile ecosystem at European level by making demand and offer meet on a shared digital platform.

3. Support SMEs pilot projects to accelerate the creation, development and use of new textile materials with increased recycled content by sharing technologies and methodologies.

4. Create five regional textile recycling hubs in line with ReHubs Europe initiative and consistent with the EU textile strategy and with the needs of SMEs.

5. Generate investment opportunities at regional level.

REGIO GREEN TEX

Co-funded by the European Union

The 5 Regional Hubs

AURA GREENTEX HUB

Auvergne-Rhône-Alpes
Technical textiles

NORTE GREENTEX HUB

Portugal
Cotton

ITALY GREENTEX HUB

Tuscany, Piedmont
Wool

NEXT TECHNOLOGY TECNOTESSILE SOCIETA' NAZIONALE DI RICERCA R. L.

Città Studi BIELLA

po.in.tex Polo Innovazione Tessile

LOWLANDS GREENTEX HUB

East-Netherlands, Flanders,
Hauts-de-France
Mixed textiles

NERO GREENTEX HUB

Romania
Eco-design, design for
recycling

Co-funded by the European Union

The Italian GreenTex Hub: Innovation Diffusion and Technology Transfer

The ITALY GREENTEX HUB aims to design a distributed recycling hub across different companies that have - and offer - technologies, processes and competencies for the recycling overall process, rather than centralizing all in a single infrastructure

The IGH is more than just physical infrastructure, it is a comprehensive source of company services/support, collaborative networking, and a catalyst for growth and competitiveness. Positioned at the center of a new service model for textile material recycling, it not only supports physical operations but also attracts and develops skills and investments, engaging with local ecosystem, as well as the national and European contexts.

The hub aims to be a reference point for the T&C sector, fostering opportunities, skills, and cross-sectoral collaborations.

Creating a market by building circular textile value chains for:
- Fire protective textiles
- Textiles with a high percentage of cotton
- Textiles with a high percentage of wool
- The reuse of wearable clothing and reuse of clippings, wool

Attracting public and private investments by building consortia for:
- Research and Development (TRL 5/7)
- Pilots and demo's (TRL 7/8)

Attracting individual investments by connecting the financial sector:
- Private investments
- Public investments
- Via EPR system(s)

Capacity building (competences) by:
- *Providing access to technologies (fieldlab)*
- Transfer of knowhow on management and operations
- Transfer of knowledge about Textile Waste
- Transfer of knowledge on Recycling Technologies

Building a community that offer SMEs:
- Individual visibility and credibility for investors
- A collective voice towards policy makers

Co-funded by the European Union

The Italian GreenTex Hub

Establishing a baseline of existing know-how in textile recycling and disseminating innovative knowledge

- create the baseline of the available practices and technologies and spread it across the entire stakeholder ecosystem
- engage with multiple ecosystems focused on recycling, as these networks provide opportunities to share resources and expertise
- Introduce the new methodologies, principles and practices in the field of sustainability and circular economy to create innovative competences and a new resilient textile recycling ecosystem

Key pillars of the Hub function

TRANSFER OF KNOW-HOW ON MANAGEMENT AND OPERATIONS

- Arrange meeting and interviews with local SMEs and stakeholders expert of the recycling systems
- Mapping the textile recycling value chain, focusing on mechanical recycling of wool in Tuscany and Piedmont, with relative gaps
- Identified key barriers related to systems, norms and technologies

TRANSFER OF KNOWLEDGE ON RECYCLING TECHNOLOGIES

- Map of available and innovative recycling technologies. focusing on applicability across different textile materials.
- Investments in training and development programs to spread and enhance the skills of personnel and stakeholders involved in the hub

TRANSFER OF KNOW-HOW ON TEXTILE WASTE

- Mapping of textile waste streams in terms of quality and quantity.
- Defined waste categories via interviews with major recycling companies
- Creation of Eco-design guidelines
- Generate innovative "final applications" for multiple sectors
- Definition of the List of services and technologies that the Hub could make available for testing

TIoR: A CROSS-FUNCTIONAL PILLAR

- Evaluation and classification: Identifies and classifies textile families by recyclability.
- Technology alignment: Maps appropriate recycling technologies per material type.
- Application focus: Outlines the range of applications for recycled outputs.

Co-funded by the European Union

Some practical results

1. Driving the Circular Economy in Textiles: Methodologies and Opportunities from Italian Excellence (Report, EN)
   - TIoR: Textile Index of Recyclability
2. ECO-Design Strategies (Report, ITA)
3. Technology Scouting Textile Waste Management Report (Report, EN)
4. Workshop on Textile Recycling Expo Brussels 2025
   - Report for companies (EN)

Co-funded by the European Union

Some practical results

1 Driving the Circular Economy in Textiles: Methodologies and Opportunities from Italian Excellence (Report, EN)

TIoR: Textile Index of Recyclability

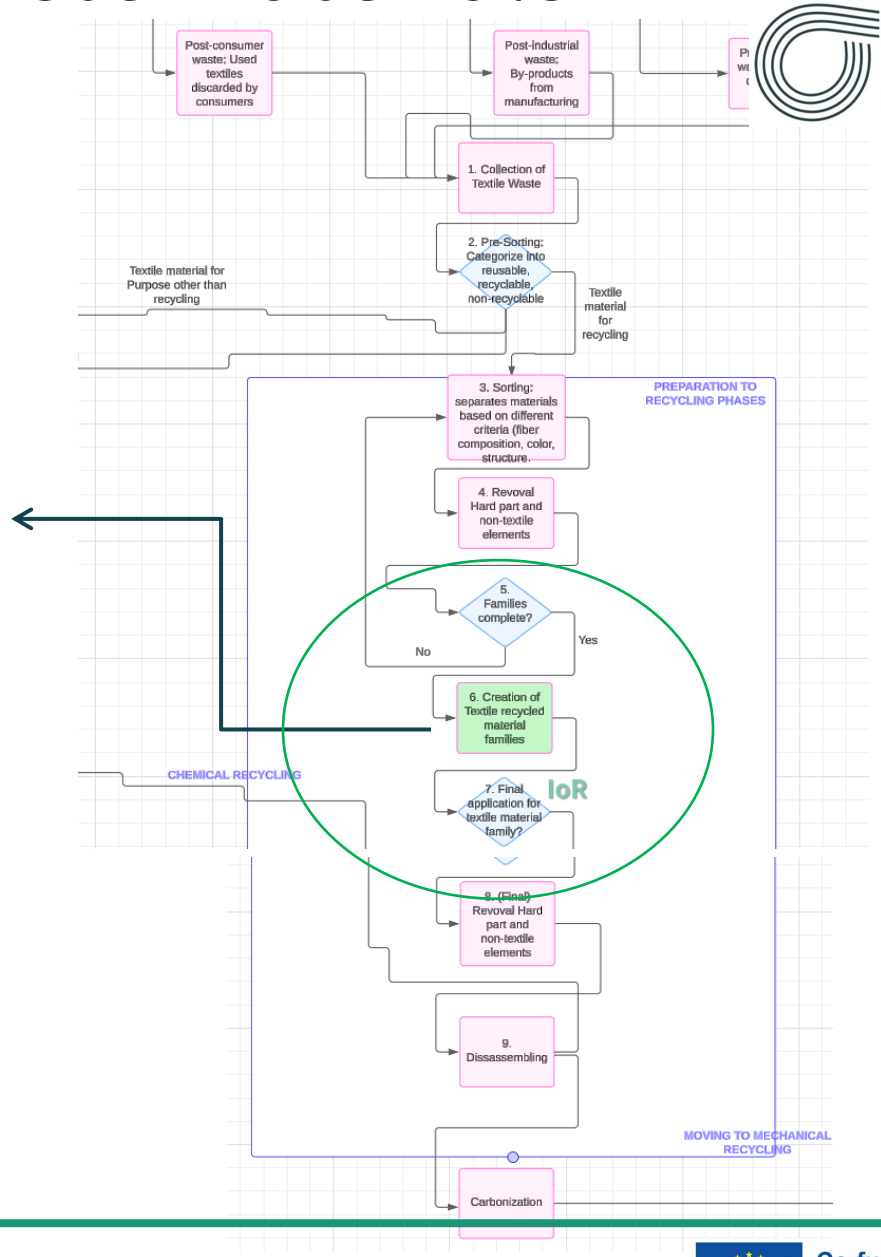
Co-funded by the European Union

Textile Index of recyclability for waste materials

TIoR is a multi-parameter post-sorting recyclability index, designed to guide technical and industrial decisions for the effective integration of recycled textile materials into circular economy flows.

Specific objectives for the creation of a TIoR

- Evaluate the different textile material families by their ease of recycling (short term)
- Incentivize the structured collection of textile waste (short term)
- Identify the range of potential applications starting from the specific textile material family (short term)
- Identify appropriate recycling technologies for each material type (long term)
- Support the development of new applications from a family of textile waste (medium-long term)
- The index could also serve as a guideline for Eco-Design, enabling more sustainable product development and facilitating the integration of recycled materials into manufacturing processes (medium-long term)



Co-funded by the European Union

Some practical results

2 ECO-Design Strategies (Report, ITA)

Co-funded by the European Union

ECO-Design Strategies

Define textile productions from the perspective of circular design, to envisage the end-of-life and recovery phases and the technical characteristics.

The Textile, Clothing, Leather and Footwear (TCLF) industries are facing many challenges posed by EU and national strategies put in place in response to the crisis. However, these strategies are not always clear or unambiguous.

Therefore, the need for guidance and support has arisen in order to be able to embrace a new supply chain and production model.

Link and contribute to the new Strategic and Operational Guide for Textile Compliance, Circularity and Sustainability (only ITA)

Co-funded by the European Union

Some practical results

3 Technology Scouting Textile Waste Management Report (Report, EN)

Co-funded by the European Union

Technology Scouting Textile Waste Management Report

Target of the Report:

- Mapping out technologies, stakeholders, and innovation dynamics in textile recycling
- Focus on Prato and Biella areas, offering insights relevant to the broader industrial textile ecosystem; the scouting was carried out at EU level

Approach:

- A comprehensive analysis across the entire value chain, from collection to transformation
- Not only “what exists,” but also investigates “what is missing” and “what is not working”

Technologies screened:

- Material identification and classification
- Mechanical, chemical, and hybrid recycling processes
- Downstream transformation technologies (fiber-to-fiber or sectors application)

Technology Scouting Textile Waste Management Report

ITALY GREENTEX HUB

Key Challenges:

- Integration of process stages with different Technology Readiness Levels (TRLs)
- Heterogeneous and non-standardized textile waste streams
- Incompatibility between upstream and downstream outputs

Strategic Insights:

- Technology gaps are opportunities for innovation and policy development
- The system needs to be adaptive, not just efficient
- Decision-making should be based on what can (and cannot) be done with the available streams

Final Purpose:

- To provide an actionable operational framework for stakeholders, recyclers, manufacturers, policymakers, and designers
- The goal is to clarify what currently exists and, more importantly, what still needs to be built and how

Co-funded by the European Union

What will you find in the Report?

Key Innovators in Textile Recycling

Mechanical Recycling and Material Preparation:

- Complete lines for textile recycling and fiber preparation
- Patented mechanical defibration technologies
- Feather and fiber recovery from padding - tailored solutions

Advanced Chemical Recycling:

- Enzymatic PET fiber depolymerization
- Selective chemical recycling of polyester fabrics
- Chemical recycling of blended fabrics (cellulose, PET)

Co-funded by the European Union

What will you find in the Report?

Key Innovators in Textile Recycling

Circular Materials and New Fibers:

- Cellulose-based fibers from textile waste
- Recycled fibers from cotton-based material
- Recovery of fine powders from textile processes
- Pigments from used garments

Sorting and Classification Technologies:

- Advanced optical sorting by composition and color
- AI-enhanced sorting using optical sensors
- NIR/VIS systems with accessory removal

Specialized Applications:

- Intrinsic Viscosity system for PET fiber-to-fiber recycling
- Recycling of complex sportswear items

Co-funded by the European Union

Some practical results

4 Workshop on Textile Recycling Expo Brussels 2025

Report for companies (EN)

Co-funded by the European Union

Highlighted Themes from the Textile Recycling Expo

Brussels, June 4–5, 2025

ITALY GREENTEX HUB

Design & Prototyping & Testing

- Small-scale recycling and spinning lines
- Garment design for easy disassembly
- Advanced recycled fiber analysis

Traceability & Automated Sorting

- Physical tracers + blockchain for transparency
- Automated AI-based sorting with NIR/VIS spectroscopy
- Classification by composition, color, and condition

Mechanical Recycling & Modular Lines

- Micro-plants for end-to-end pilot testing
- Optimized industrial lines for quality and efficiency
- Hybrid systems for sorting and regenerated fiber production

Chemical recycling and advanced cleaning

- Enzymatic technologies for PET depolymerization
- Dye recovery and reuse
- Selective removal of contaminants (PFAS, metals, dyes)

Reuse, repair, and circular fashion

- Automated assessment of recyclability and reusability
- Recovery and regeneration of post-consumer garments

Sign up

for the Po.in.tex workshop

Biella, July 22th, 2025

15.00-16.30 CET (only ITA)

REGIO GREEN TEX

Co-funded by the European Union

Do you want to know more about the ITALY GREENTEX HUB?

Join us on the
RegioGreenTex Community Talk
on the Piemonte/Tuscany Hub
19 November 2025

Stay tuned!

Co-funded by the European Union

Thank you!

Paola Fontana – Po.in.tex
paola.fontana@cittastudi.org

Matteo Lepri – Next Technology Tecnotessile
matteo.lepri@tecnotex.it

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

Co-funded by the European Union