European Partnership Textiles of the Future

SRIA publication webinar

10 July 2024

Agenda

- **The Textile of the Future Partnership as part of the Textile Transition Pathway**
  Marie-Hélène Pradines, DG GROW, European Commission
- **Textile Industry Transformation in the EU Policy Context**
  Dirk Vantyghem, Director General, EURATEX
- **Presentation of the Strategic Research and Innovation Agenda**
  Lutz Walter, Secretary General, Textile ETP
- **Q&A**

SRIA preparation steps

250+ textile industry and research experts from across Europe involved

20 March

EC announcement of new Horizon Europe partnerships

20 April

Induction webinar with all ETP stakeholders, launch of 1st survey

14 May

Public input sessions at Textile ETP Annual Conference based on 1st survey analysis results, launch of 2nd survey

20 June

Validation and final input webinar with all ETP stakeholders, launch of 3rd survey

11 July

SRIA Publication & presentation webinar

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

The Textiles of the Future Partnership as part of the Textile Transition Pathway

Marie-Hélène Pradines

DG GROW, European Commission

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Why a co-programmed European Partnership under Horizon Europe?

Fourth highest-pressure category for primary raw materials/water and fifth for GHG emissions

Implement the **EU Strategy for Sustainable & Circular Textiles**, the **Textiles Transition Pathway** and the **whole set of new EU legislation,** changing the way textile products are designed, manufactured, used and disposed of at the end of their life cycle

Innovation of the companies in the ecosystem is key to successfully realize the twin transition

Promote **industrial engagement** in R&I and boost investments (transition pathway: a dedicated support schemes on R&I for the sector)

Ensure a more **strategic, coordinated and impact-oriented approach on R&I** in textiles contributing to the delivery of EU priorities on sustainability and circularity

Strategic Objectives

- **Market dimension**

Strengthen the resilience and the sustainable competitiveness of the industry

- **Technology dimension**

Support the digital and technological transformation of the sector

- **Quality & Innovation dimension**

Support European sovereignty of the sector over quality and heritage, know-how, but also creativity and innovation

Co-programmed partnership
Cluster 4 “Digital, Industry and Space”
Total budget: planned for 60M€
Lead organization private sector: European Technology Platform for Textiles

Implementation → Horizon Europe work programmes, calls for proposals

Partners → SRIA & input to call topics

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Strategic Priorities of HEU & Cluster 4 (2025–27)

- THE GREEN TRANSITION;
- THE DIGITAL TRANSITION; AND
- A MORE RESILIENT, COMPETITIVE, INCLUSIVE, AND DEMOCRATIC EUROPE.

HOW WILL CLUSTER 4 MAKE A DIFFERENCE?

Expected impacts

EXPECTED IMPACT	INTERVENTION AREAS COVERED	EUROPEAN PARTNERSHIPS*
15. . Achieving global leadership in climate-neutral, circular and digitised industrial and digital value chains	4.2.1. Manufacturing technologies 4.2.4. Advanced Materials 4.2.8. Circular Industries 4.2.9. Net-zero and less polluting Industries	Made in Europe Process for Planet Clean Steel Textiles of the Future

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Links with other European partnerships

Exchange and align strategic concepts with other relevant Partnerships/Clusters under Horizon Europe

- ✓ Cluster 6 (and possibly Cluster 2)
- ✓ Made in Europe
- ✓ Circular bio-based Europe
- ✓ EIT Culture & Creativity
- ✓ New partnerships under Horizon Europe (e.g. Advanced Materials)

Timeline

Following the adoption of the Horizon European Strategic Plan 2025-27

April	May	June	July	Dec
• Draft partnership guidance & proposal document	• Webinar organised by ETP on the development of the Strategic Research & Innovation Agenda	• Draft Strategic Research & Innovation Agenda	• Publication and presentation Strategic Research & Innovation Agenda • Publication of the partnership guidance & proposal document	• Signature MoU

The Strategic Research and Innovation Agenda

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

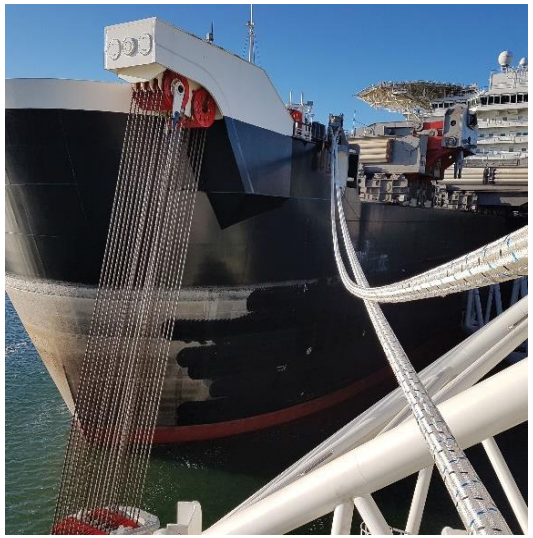
Industry Transformation in the EU policy context

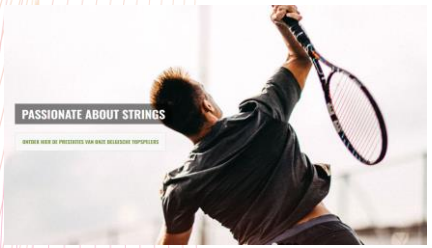
Dirk Vantyghem

Director General, EURATEX

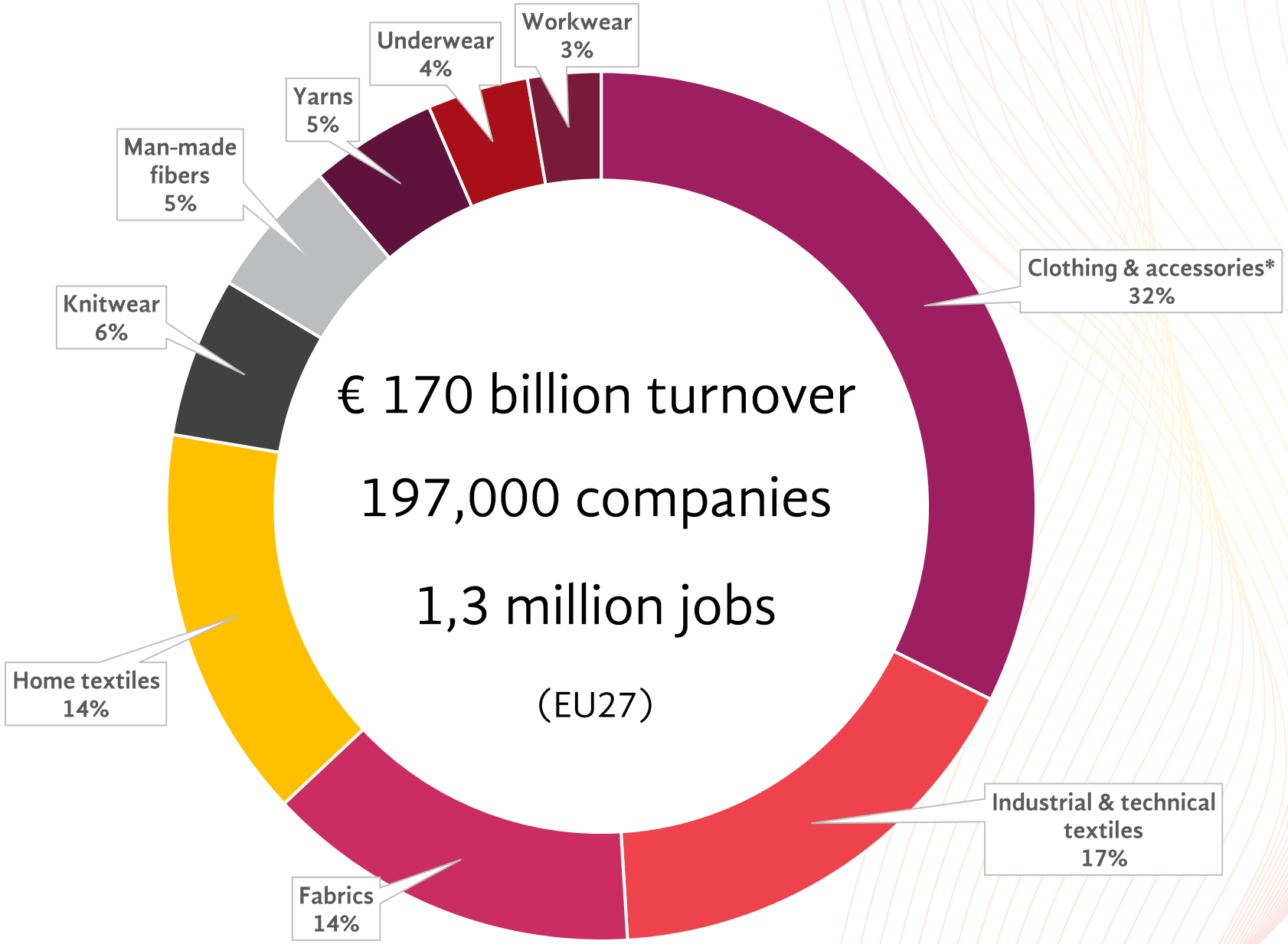
ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

« Textiles are Everywhere »





ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM



EURATEX
THE EUROPEAN APPAREL AND TEXTILE CONFEDERATION

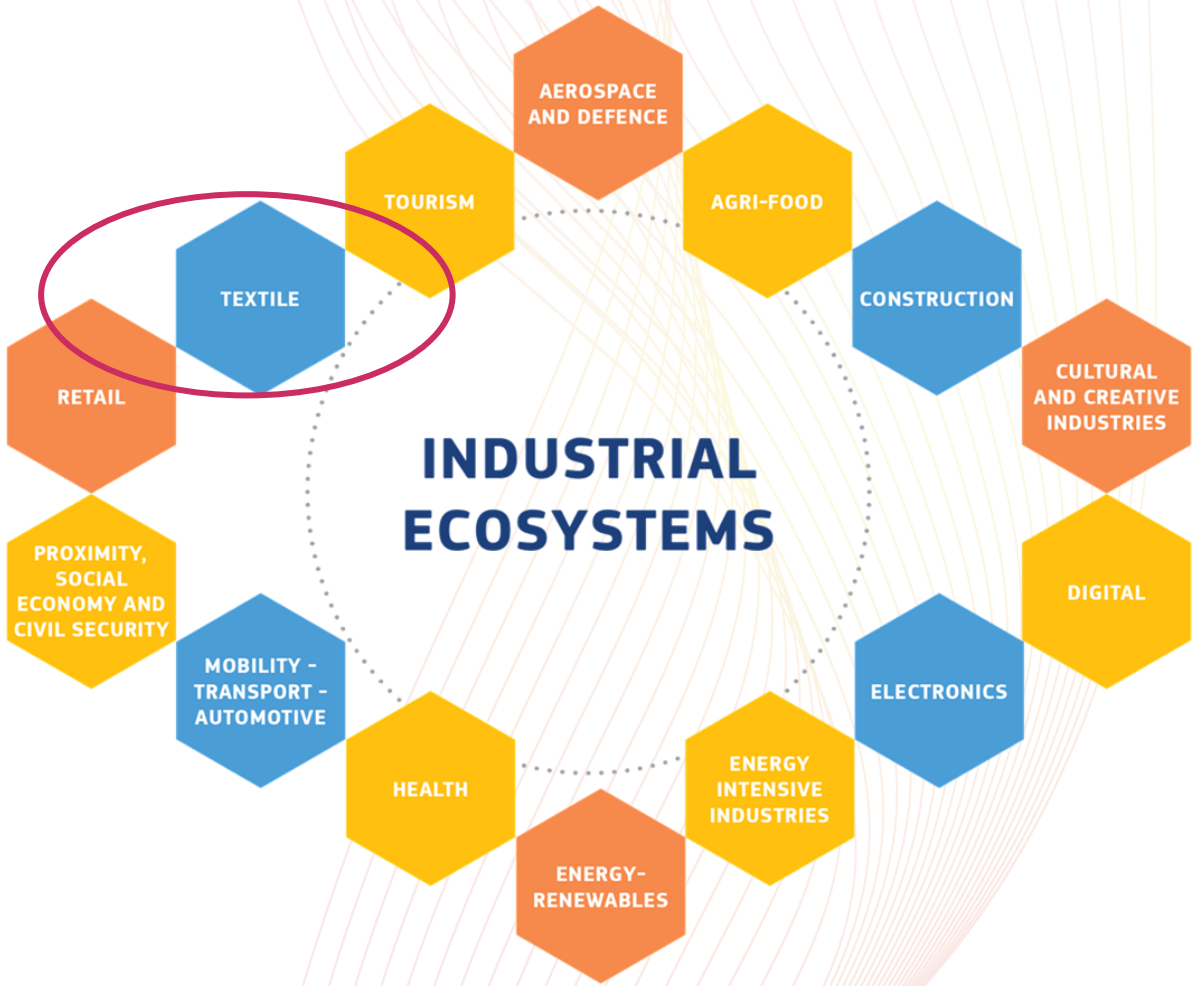
ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

EUROPEAN
COMMISSION

Brussels, 30.3.2022
COM(2022) 141 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

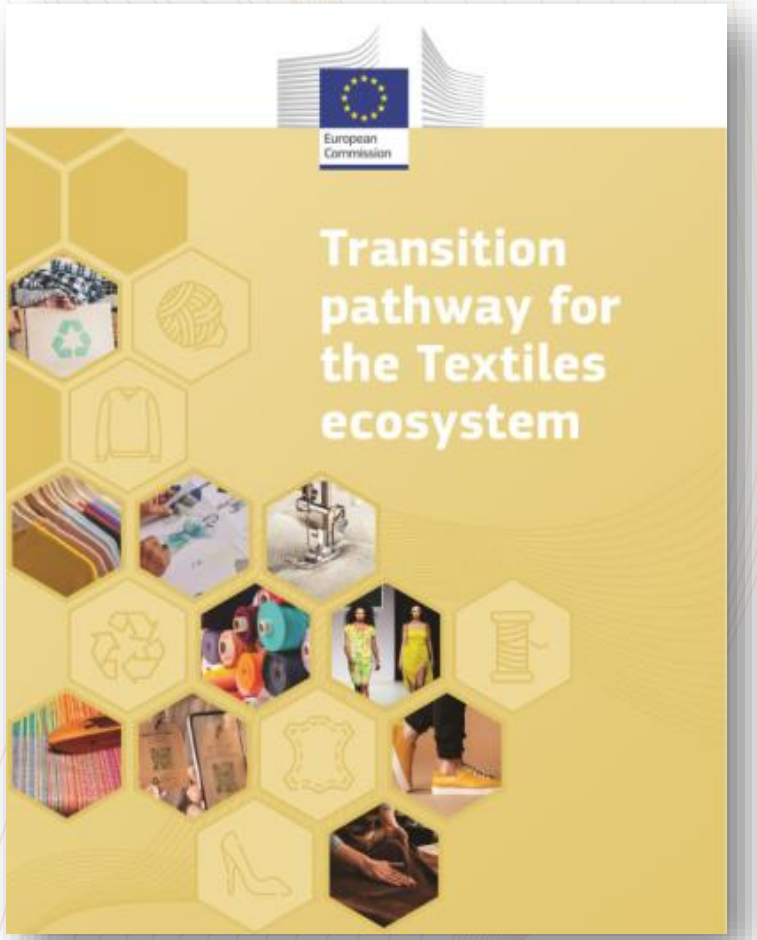
EU Strategy for Sustainable and Circular Textiles

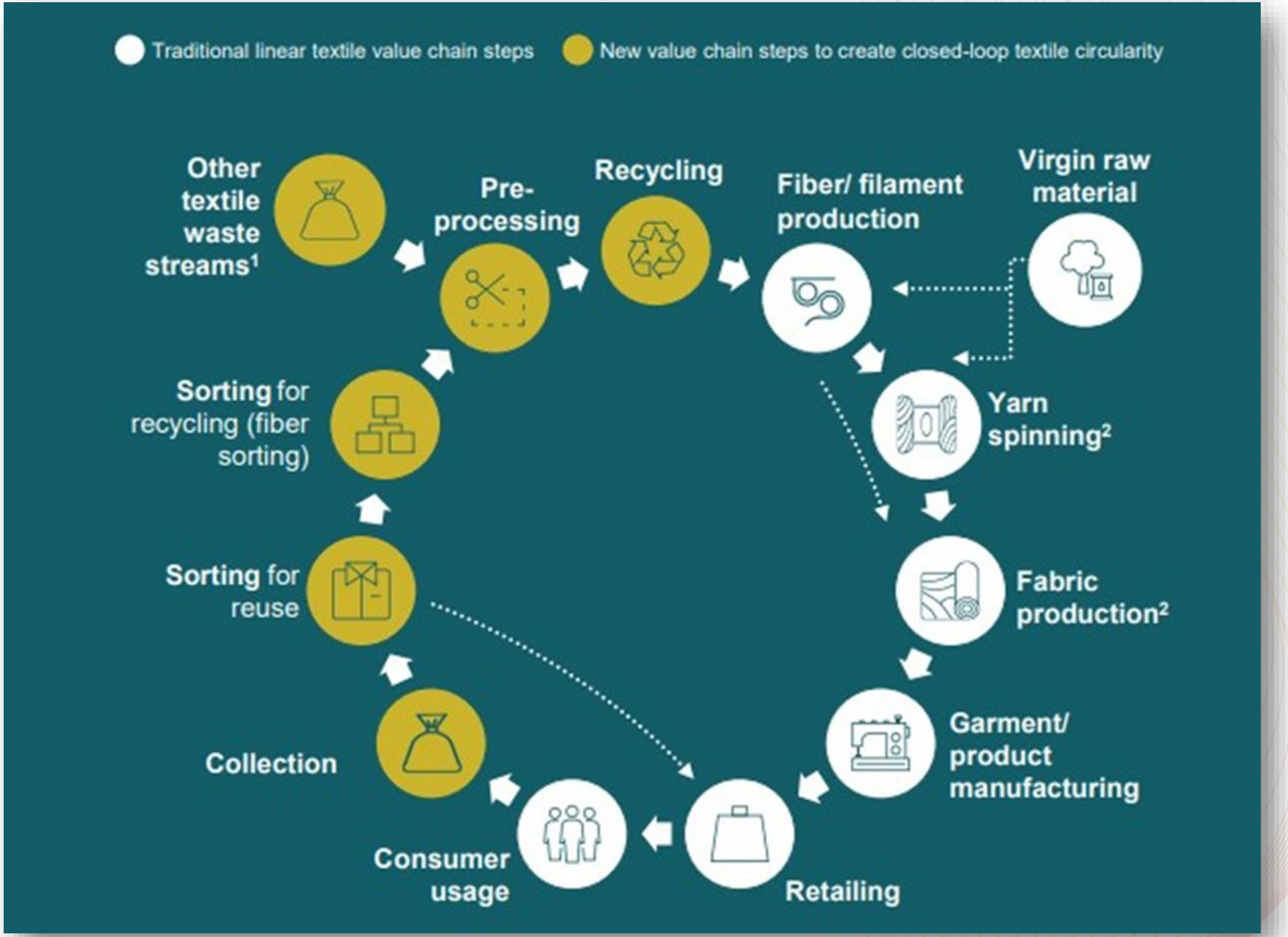


ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

EU Policy and regulation

- Ecodesign / Digital Product Passport
- Supply Chain Due Diligence and Traceability
- Waste Management / Extended Producer Responsibility
- Chemical restritions
- Microplastics
- Sustainable Innovation Marketing aka. Green claims
- ESG finance via EU taxonomy
- Revised textile labelling regulation
- Forced labour
- ...




Traditional linear textile value chain steps
New value chain steps to create closed-loop textile circularity
Other textile waste streams[1]
Pre-processing
Recycling
Fiber/ filament production
Virgin raw material
Yarn spinning[2]
Fabric production[2]
Garment/ product manufacturing
Retailing
Consumer usage
Collection
Sorting for reuse
Sorting for recycling (fiber sorting)

Industry transformation challenges

Sustainability: Balancing sustainability efforts with economic viability is a significant challenge for the textile industry, especially for small and micro-enterprises.

Digitalisation & AI: Digital transformation is essential for competitiveness but also risky, requiring skilled IT professionals and posing cybersecurity challenges.

Raw Materials: Sustainable and responsible sourcing of raw materials, including recycled fibres, is critical.

New Business Models: Circular economy and service-based models like care, repair, rental and resale promote sustainability and differentiation from price competition.

Distribution and Consumer Engagement: Omnichannel capabilities and efficient logistics are vital for engaging customers in new ways and expanding market reach.

Supply Chain Integration and On-Demand Production: Reintegrating and digitally connecting production can optimize supply chains and reduce overproduction.

Industry transformation challenges

Regional Supply Chains: Reshoring production revitalizes regional textile clusters and enables true circularity.

Resource Costs: Stable, affordable and diversified supply of energy, water, and chemicals is crucial for competitiveness.

Resilience: Diversifying manufacturing locations and supply sources ensures resilience against global trade disruptions.

Global Markets: Free and fair trade is essential for the textile industry's growth and competitiveness.

New Textile Applications: Growing use of technical textiles offers significant innovation and market opportunities.

Workforce and Skills: Addressing the shortage of qualified staff and young talent is crucial for the industry.

Education and Training: Modernising education and training programs is essential to attract and prepare new talent for the textile industry.

Key Technologies Vision, Research Priorities & Implementation

Lutz Walter

Secretary General, Textile ETP

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Key Enabling Technologies

Digital technologies

Big data and AI: High-performance computing and AI models can revolutionize textile design, production, distribution, and customer interaction by optimizing processes based on vast datasets.

Virtualisation & digital twins: Virtual representations of materials and processes can enhance agility, reduce waste, and support value-adding services throughout the product lifecycle.

Sensor and vision technology: Advanced sensor and machine vision systems will be crucial for optimising processes, quality assurance, regulatory compliance, and inventory management in the textile industry.

Robotics & digital microfactories: New generations of robots and co-bots will enable highly automated microfactories, transforming flexible material handling and on-demand production in garment making.

IoT and wearables: Advances in microelectronics & manufacturing will drive the rapid development of e-textiles and wearables, offering opportunities in healthcare, sports, and consumer electronics.

Traceability & DPP technology: Upcoming legislation requiring digital product passports will enhance supply chain transparency and sustainability by mandating detailed tracking of all inputs and outputs.

Key Enabling Technologies

Materials and process technologies

Sustainable chemistry and biotechnology: Innovations in chemistry, biotechnology, and process engineering are essential to develop safer, environmentally friendly textile processing methods without sacrificing product performance.

Next generation fibres and biosynthetics: Developing renewable, high-performance synthetic fibres from diverse feedstocks requires substantial innovation to reduce reliance on fossil resources.

Recycling: Advancing mechanical and chemical recycling processes to transform post-consumer textile waste into high-quality fibres is crucial for reducing environmental impact & meeting upcoming regulation.

Resource-efficient process technologies: Innovations that reduce primary input usage or enable the recovery and reuse of process outputs enhance both the competitiveness and sustainability of the textile industry.

Electrification & renewable energy: Electrifying textile production processes and using CO2-neutral grid energy can significantly reduce greenhouse gas emissions in the industry and thereby lower product environmental footprint.

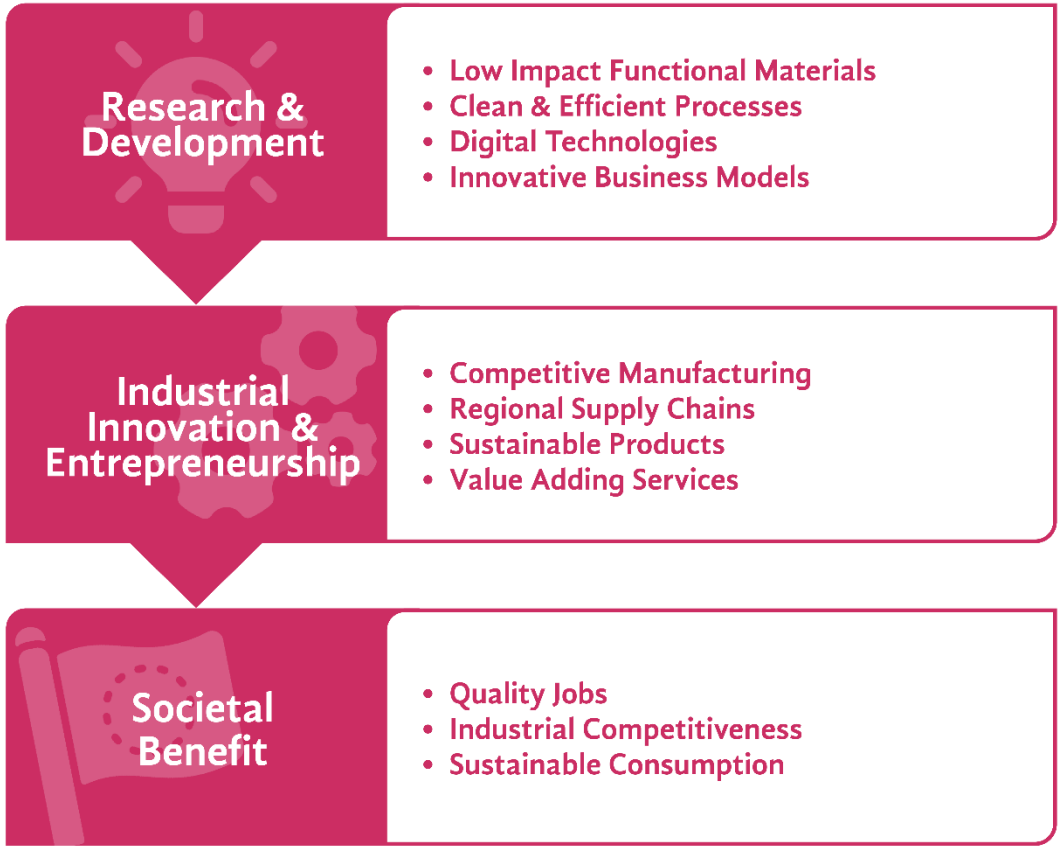
Ecodesign & LCA tools: Accessible tools and open data for life cycle assessments and ecodesign are necessary to meet environmental performance criteria and make sustainable practices common in the textile industry.

Vision for 2030

The Vision and central objective of the partnership:

The development and demonstration of new **technologies** and innovative **business models** for competitive **manufacturing** of safe and sustainable textile **products** (and related services) made from low-impact functional **materials** and by clean and digitally connected **processes** in regional, circular and fully traceable **supply chains** for **quality jobs, industrial competitiveness & responsible consumption in Europe.**

The Vision explained:



The Partnership's Research & Innovation Priorities

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Structure of Research Innovation Priorities

- 3 **R&I priority areas**
  - **Priority area I: Sustainable materials & clean processes**
  - **Priority area II: Digital supply chains & circular business models**
  - **Priority area III: Advanced manufacturing & high-performance textiles**
- Each R&I priority area has 4-5 **Strategic Topics**
- Each Strategic Topic has 3-6 **R&I Objectives**

Strategic topics per priority area

Priority area I: Sustainable materials & clean processes

1. Sustainable biobased feedstock
2. Sustainable fibres
3. Sustainable textile chemistry
4. Resource efficient processes
5. Efficient end-of-life sorting, separation & recycling

Priority area II: Digital supply chains & circular business models

6. Digitalisation of the textile value chain
7. Sustainability & circular data management
8. Design for sustainability & circularity
9. Circular business models & value-added customer and end-user services

Priority area III: Advanced manufacturing & high-performance textiles

10. Automated, AI supported smart manufacturing
11. On-demand digital and networked manufacturing
12. Safe & sustainable materials for technical applications
13. Advanced (multi)functional materials for technical applications

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Priority area I: Sustainable materials & clean processes

Strategic topic 1: Sustainable bio-based feedstock

Sustainability impact: Medium-high

- Alternative sustainable feedstocks for textile fibres and chemicals
- Industrial symbiosis btw. biobased resources, waste management & textile VC
- Valorise side and waste streams from food, feed, biofuel, biotechnology

Strategic topic 2: Sustainable fibres

Sustainability impact: High

- Locally available natural fibres and bio-resources, build local VCs
- Sust. processing, economics and functionalities of biobased fibres
- Novel fibre types & conventional synth. fibres from bioderived feedstock

Strategic topic 3: Sustainable textile chemistry

Sustainability impact: Very high

- Phase out hazardous chemicals/chemicals of concern from textile VC
- Replace conventional chemicals with equivalent renewable, non-toxic altern.
- Replace dyes, ink, pigments with bioderived alternatives for EoL removal
- Establish SSbD principles in textile chemistry & fibre material innovation

Strategic topic 4: Resource efficient processes

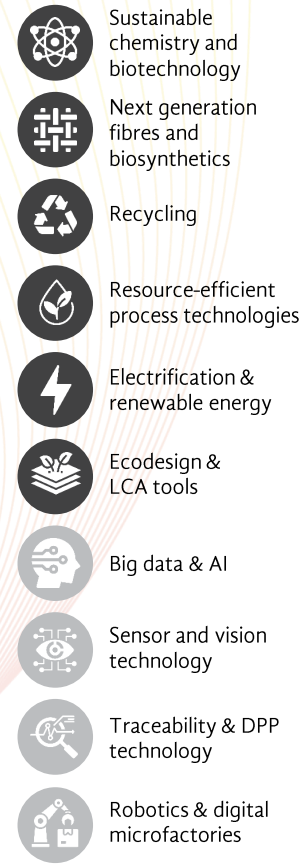
Sustainability impact: High

- Lower GHG emissions: efficient use of energy, water, materials, chemicals
- Improve processability & quality when producing with recycled/alt. bb fibres
- Upgrade/retrofit efficiency solutions in existing processing lines/factories
- Lower cost, increase efficiency: water cycling/recovery, treating wastewater

Strategic topic 5: Efficient EoL sorting, separation & recycling

Sustainability impact: Very high

- Larger share of T2T recycling, esp. post-consumer incl. input for non-T VCs
- Cost-eff., lower energy, solvent/chem. input, higher yield of recycled mat.
- Tech for sorting, separation, recycling, incl. eff. local small-scale recycling
- Quality standards for recycled fibres/textile products



Priority area II: Digital supply chains & new business models

Strategic topic 6: Digitalisation of the textile value chain

Sustainability impact: High

- Digitally generated, processed, communicated data across VC to avoid errors
- Connectivity/interoperability of data & systems across VC
- AI-assisted/-driven systems for complex data processes/decision-making
- Digital twins of materials, products, processes, machines, production lines, factories & supply chains for simulation, optimisation and reproduction

Strategic topic 7: Sustainability & circular data management

Sustainability impact: Medium-high

- Tech to capture, verify, analyse primary data for sust. & circ. optimisation along VC
- Concepts, methods, systems, standards to securely, efficiently share data along VC
- Rapid, reliable, cost-effective reporting/certification for legal compliance, customer information, education
- Relevant datasets accessible for research, education and policy making purposes

Strategic topic 8: Design for sustainability & circularity

Sustainability impact: High

- Connect design/develop. process with processing, use, EoL for value creation
- Deep data at design phase to optimise product creation to chosen BM
- Simulation/visualisation of material/product charact. during prod., use, EoL
- Data flows/feedback loops from production, use, EoL into design process

Strategic topic 9: Circular business models & value-added customer and end-user services

Sustainability impact: Medium-high

- Concepts/tech for BM that promote circularity and value-added servitisation
- Service-based BM that drive resource optimisation and waste minimisation
- Tech/services that facilitate consumer contributions to circularity
- Collab./edu. materials/tools to engage customers in product/service design

Recycling
Ecodesign & LCA tools
Big data & AI
Sensor and vision technology
Traceability & DPP technology
Robotics & digital microfactories
Virtualisation & digital twins

Priority area III: Advanced manufacturing & high-performance textiles

Strategic topic 10: Automated, AI supported smart manufacturing

Sustainability impact: Medium

- Productivity, versatility, resource-efficiency of manufacturing processes through advanced automation, digitalisation, AI
- Solve productivity/quality issues related to manual handling of textiles parts through robotics
- Improve product quality through zero-defect manufacturing approaches
- Raise factory efficiency through predictive and remote maintenance

Strategic topic 11: On-demand digital and networked manufacturing

Sustainability impact: Medium-high

- Develop/integrate processes & tech for networked, local, on-demand prod.
- Digitalisation/process integration for flexibility, time-to-market, cost-competitive manufacturing, delivery of small orders, customised products
- Autom. & ind. efficiency after sales phase of product care, maintenance, repair

Strategic topic 12: Safe & sustainable materials for tech applications

Sustainability impact: High

- Smart and high-performance textiles from safe and sust. feedstocks/materials
- Processes and chemicals that comply with SSbD principles
- Recycling of complex technical textiles and textile-non-textile material mixes
- Bio-based and recycled textile materials in high-performance tech. applications

Strategic topic 13: (Multi)functional materials for tech applications

Sustainability impact: High

- Multifunctional textile solutions for high-added value applications
- Functional structures and surfaces meeting demanding requirements
- Durability/functionality of e-textiles & wearables, improve cost-effectiveness by automated manufacturing and assembly approaches
- Test methods for novel multifunctional textile materials in specific use cases

- Sustainable chemistry and biotechnology
- Next generation fibres and biosynthetics
- Recycling
- Resource-efficient process technologies
- Ecodesign & LCA tools
- Big data & AI
- Sensor and vision technology
- Robotics & digital microfactories
- IoT and wearables
- Sensor and vision technology

Implementation

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Strategic Programme of Activities

Textiles of the Future Projects

- Collaborative projects incl. cascade funding in dedicated call topics of HORIZON EUROPE work programmes 2025, 2026 & 2027

Additional & Complementary Activities

- Collaborative projects within the scope of the SRIA funded in other HORIZON EUROPE calls
- SRIA-related projects under other EU funding programmes (I3, LIFE+, Interreg…)
- SRIA-related projects and investments under national & regional programmes
- Follow-up demonstration & exploitation investments by industry

Joint Dissemination & community building

- Affiliation of all Textiles of the Future projects with ECOSYSTEX Community
- Collaboration with related EU partnerships and initiatives

All activities and the assessment of results and impact achieved will be overseen by a **Partnership Board** composed of representatives of the European Commission and the Private Stakeholder Community

Resources

EU Contribution - €30 million

- **Public funding of collaborative projects under Textiles of the Future call topics in Cluster 4 of Horizon Europe 2025-2027**

Private Contribution - €30 million

- In-kind co-financing of eligible costs of Textile of the Future projects
- Additional project-related investments of SME recipients of cascade funding
- Additional private follow-up investments for demonstration, piloting & early market exploitation of project results
- Expenses related to collective activities to improve impact of the Partnership

Collaborations

Collaboration area: Processing and Manufacturing

PROCESSES4PLANET

MADE IN EUROPE

eit Manufacturing

Collaboration area: Materials and Circularity

CBE JU Circular Bio-based Europe Joint Undertaking

Innovative Materials for Europe

eit Climate-KIC

Textiles of the Future Partnership

Collaboration area: Digitalisation

adra The AI Data Robotics Association

eit Digital

Collaboration area: Design & Creativity

eit Culture & Creativity

Next steps

Signature of MoU with European Commission & set-up of Partnership Board

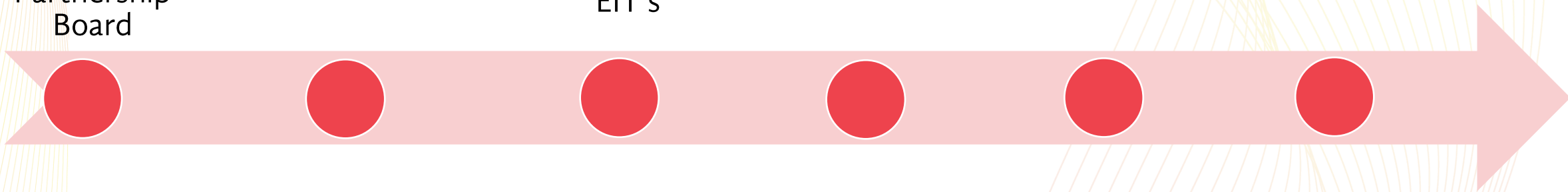
Finalisation of 2025 WP topic. Indicative topic **'Digitally enabled local-for-local textile and apparel production'**, budget € 10 million, to be confirmed by EC

Start of collaboration with other EU partnerships/ EIT's

Start of preparation of 2026-27 WP topics

TEPPIES brokerage for ToF and any other textile-related topic in WP-2025

Formal launch of Horizon Europe 2025 calls



ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

Where to find the SRIA? How to get involved?

- Textile ETP website: https://textile-platform.eu/news/textile-etp-unveils-the-strategic-research-and-innovation-agenda-for-textiles-of-the-future-european-partnership

- **Join ETP as associate or networking member**

Q&A

ETP Fibres Textiles Clothing
EUROPEAN TECHNOLOGY PLATFORM

@TextileETP

Textile ETP

@TextileETP

info@textile-platform.eu

www.textile-platform.eu

Thank you for your attention

ETP Fibres Textiles Clothing