European Commission

Transition pathway for the Textiles ecosystem

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TRANSITION PATHWAY FOR THE TEXTILES ECOSYSTEM

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1. INTRODUCTION

On 10 March 2020, the European Commission adopted a '**New Industrial Strategy for Europe'** (hereafter 'Industrial Strategy'[1]) to help the European industry lead the way on the green and digital transformation and to boost the EU's global competitiveness and open strategic autonomy. In light of the experience of the COVID-19 pandemic, the European Commission updated its Industrial Strategy[2] in May 2021, highlighting the need to accelerate the green and digital transitions, and thus increase the resilience and competitiveness of EU industrial ecosystems. To do so, the European Commission proposed the co-creation of transition pathways across relevant industrial ecosystems.

The **2021 updated Industrial Strategy** identified textiles as a key product value chain with an urgent need and a strong potential for the transition to sustainable and circular production, consumption and business models. Moreover, the European Green Deal[3], including the new Circular Economy Action Plan[4], also identified textiles as a resource-intensive sector requiring focused action.

In addition, due to lack of adequate skills in the textiles ecosystem, the European Commission supported the establishment of the EU Pact for Skills for the Textiles ecosystem[5] between industry, educational providers and public authorities. It was launched in December 2021, to promote the up/re-skilling and the transfer of green and digital skills to the ecosystem. As such, skills are an important element of the Textiles Transition Pathway.

The **EU Strategy for Sustainable and Circular Textiles** (hereafter the 'EU Textiles Strategy'[6]), adopted on 30 March 2022, underlines the significant impact of the production and consumption of textile products on the environment. In the EU, the consumption of textiles, most of which are imported, now accounts on average for the fourth highest negative impact on the environment and on climate change and third highest for water and land use from a global life cycle perspective.[7] The EU Textiles Strategy thus sets out a framework to facilitate the transition of the textiles ecosystem towards increased circularity and sustainability by 2030, and to this end announced actions along the textiles value chain.

In relation to greenhouse gas emissions, and following the Paris Agreement[8], the European Commission has put forward a series of legislative proposals to make its policies fit for delivering the updated 2030 greenhouse gas emissions net reduction target of 55% below 1990 levels, as set out in the 2030 Climate Target Plan[9] and written into the European Climate Law[10].

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[1] COM (2020) 102 final
[2] COM (2021) 350 final
[3] COM (2019) 640 final, see also A European Green Deal (europa.eu)
[4] COM (2020) 98 final, see also Circular economy action plan (europa.eu)
[5] https://ec.europa.eu/social/main.jsp?catId=1517&langId=en
[6] COM (2022) 141 final, see also Textiles strategy (europa.eu)
[7] EEA (2022) Textiles and the environment: the role of design in Europe's circular economy
[8] Paris Agreement (europa.eu)
[9] COM(2020) 562 final, see also 2030 Climate Target Plan (europa.eu)
[10] Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243, 9.7.2021, p. 1–17), see also European Climate Law (europa.eu)

These '**Fit for 55**' legislative proposals cover a wide range of policy areas including climate, energy, transport and taxation, setting out the ways in which the European Commission will reach its updated 2030 target in real terms.[11]

Furthermore, with the recent **Green Deal Industrial Plan**[12] and the proposed **Net-Zero Industry Act**[13], the European Commission aims to scale up manufacturing of clean technologies in the EU and make sure the EU and its industry are well-equipped for the clean-energy transition. The Net-Zero Industry Act will support the EU's climate-neutrality commitment and the clean energy transition, strengthen the resilience of the EU's energy system, and contribute to establishing a secure supply of clean energy in line with REPowerEU[14].

Through the co-creation with stakeholders[15], the **Textiles Transition Pathway** aims to identify what the digital and green transitions, increasing resilience and competitiveness mean for the textiles ecosystem and what specific actions and commitments are needed to accompany this transition.

2. THE EU TEXTILES ECOSYSTEM

The textiles ecosystem includes transformation of natural and manmade fibres into yarns and fabrics, production of yarns, home textiles, medical textiles, industrial filters, technical textiles, carpets, and clothing. The ecosystem also includes production of footwear and leather.

The textiles ecosystem is amongst the most globalised value chains that exist today.[16] The ecosystem is mainly composed of small and medium-sized enterprises (SMEs),[17] which represent 99.5% of the companies active in this ecosystem. Women represent more than 70% of all employees. Companies with less than 50 employees account for more than 90% of the workforce. The main EU producers of **textile and clothing** are concentrated in Germany, Spain, France, Italy and Portugal. Over 40% of EU apparel is produced in Italy.

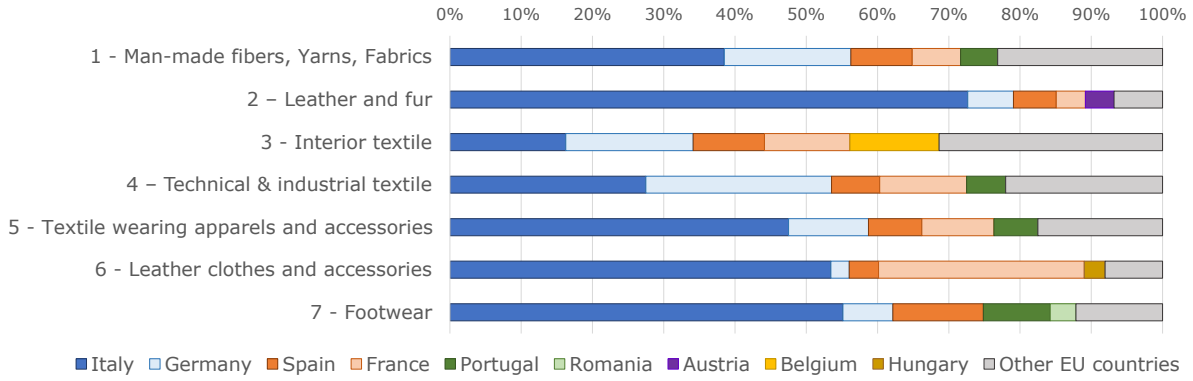
As regards **footwear**, two thirds of EU footwear production is concentrated in three countries: Spain, Italy and Portugal with Italy accounting for over 50% of EU production. The European footwear industry consists of a large number of small enterprises, employing on average 10-15 employees. The number of companies and employment in the footwear sector has been declining in the past decades due to manufacturing moving to economies with lower labour costs in South East Asia. Many European companies have focused on high-quality and high-added value segments and niche markets. These include high-end footwear, children's shoes, and footwear for specific applications (protective, golf and skiing boots).

[11] Delivering the European Green Deal (europa.eu)
[12] COM(2023) 62 final, see also The Green Deal Industrial Plan (europa.eu)
[13] COM(2023) 161, see also Net-Zero Industry Act (europa.eu)
[14] REPowerEU: affordable, secure and sustainable energy for Europe (europa.eu)
[15] Textiles Ecosystem Transition Pathway cocreation process (europa.eu)
[16] Centre for Industrial Studies (CSIL) report on Data on the EU Textiles Ecosystem and its Competitiveness.
[17] Eurostat 'Structural Business Statistics' and National accounts aggregates by industry.

Concerning the leather segment of the ecosystem, the **leather industry** includes diverse products and industrial processes. Leather tanning covers the treatment of raw materials, such as the conversion of raw hides or skins into leather to be used in the manufacture of a wide range of products. The footwear, garment, furniture, automotive and leather goods industries are the most important outlets for EU tanners' production. The EU maintains its position as a leading world exporter of semi-processed leather. European tanners have become the preferred suppliers for high-end luxury brands in fashion, interior design, and the automotive sector worldwide,[18] setting world standards in terms of quality and brand value.[19]

SMEs are essential to the competitiveness and the technological development of the ecosystem. To unleash the power of SMEs to lead the twin transitions, operators in the ecosystem must adopt sustainable business practices and digital technologies.

Figure 1: Top EU producers by subsector



Source: Based on data from Eurostat Structural Business Statistics. CSIL report on Data on the EU Textiles Ecosystem and its Competitiveness (shares of total EU production, average 2015-18).

2.1. Links to other industrial ecosystems

Due to its complex value chains, the textiles ecosystem is linked to and dependent on other industrial ecosystems such as the healthcare, construction, agriculture, and automotive sectors. The textiles ecosystem also has links to the recycling industry as well as with the retail ecosystem, the proximity and social economy, and the cultural and creative industries ecosystems.

2.2. Economic outlook for the ecosystem

The **textile and clothing sector** had a strong recovery in 2021 where most segments reached pre-pandemic levels. However, in 2022 the ecosystem faced several severe challenges with high energy,

[18] CSIL report on Data on the EU Textile Ecosystem and its Competitiveness
[19] Idem

material and shipping costs which strongly affected the profit margins of companies.[20] EU textile activity dropped by more than 3%, on a quarter-on-quarter basis.[21] As noted in the EURATEX 2022 Autumn Report, "high energy prices, geopolitical tensions, increased transportation bottle necks, sanctions against Russia and input shortages were among the top concerns for companies." In particular, the energy-intensive segments of the ecosystem, have faced financial distress due to high gas prices. Most companies do not have the technical facilities to operate with an alternative fuel to gas. Conversion to other alternatives is expensive and take a long time to implement. The finishing industries, which is a key sub-sector doing for example printing, dyeing, bleaching and coating of fabrics has a strong dependence on gas and cannot at the moment work with alternatives.

The **EU tanning sector** closed 2022 with a substantially stable production on all main product segments as compared to previous years, but still on a lower level as compared to pre Covid years. However, there was a sudden and widespread slowing down of leather demand in the second half of last year and this trend has continued.[22]

After the dramatic drop in 2020 due to the COVID-19 pandemic, the **EU footwear sector** recovered in 2021. However, with the high energy prices and inflation impacting consumption, the economic outlook has become more uncertain.[23]

Innovative, sustainable, circular, and high-quality products remain the most promising segments for the ecosystem, and many stakeholders have identified circular and sustainable products as market/export opportunities for the future competitiveness of the EU textiles ecosystem. Some stakeholders also recognised recycled and renewable fibres as a new market on which the EU could become a leader. This may also lead to new business opportunities and strengthen the sector's resilience. Still, the textiles ecosystem is generally seen, by stakeholders, as lagging behind in terms of digitalisation and increased efforts and investments are needed in research, technology development, innovation, and skills development.

3. STRENGTHS AND CHALLENGES OF THE EU TEXTILES ECOSYSTEM

The textiles ecosystem is characterised by many strengths but also faces several challenges:

Competitiveness strengths:

- High quality of production;
- Rapid integration of new and innovative materials;
- Front runner position in terms of uptake of sustainability practices to reduce the environmental footprint of the ecosystem;
- Design, creativity, strong brand names, especially in the high-end industries;

[20] EURATEX 2022 Autumn report
[21] EURATEX Economic update, third quarter 2022
[22] Information from Cotance
[23] Information from CEC (European Footwear Confederation)

- Strong leadership in high value-added segments where drivers of competitiveness are difficult to replicate and global leading companies in fashion and textile retail;
- Specialised firms taking advantage of new tech and consumer trends;
- Increasing experience with business models based on reuse, repair, recycling and circularity.

Competitiveness challenges:

- Increased competition from third countries;
- High energy costs;
- Unsustainable use of primary raw materials and lack of sufficient fibre-to-fibre recycling;
- Need to address overproduction and overconsumption of garments;
- Mainstreaming of repair and reuse services, and product as service concepts;
- Low profit margins, especially for SMEs;
- Skills gaps, including gender gaps;
- Ageing workforce;
- Innovative capacities concentrated in few EU Member States.

4. THE TRANSITION PATHWAY CO-CREATION PROCESS

Following the publication on 30 March 2022 of a **Staff Working Document with scenarios for the Textiles Transition Pathway**, the co-creation process was launched with a survey, which was concluded on 15 June 2022 with 103 replies submitted to the survey.

Four **workshops** were held with stakeholders in September 2022 covering sustainability, digitalisation, resilience and the social dimension of the transition. A concluding workshop was organised in October 2022 with 140 participants. The input from the stakeholder consultation was published in a report drafted by experts supporting the European Commission in the co-creation process.[24] Exchanges were also undertaken with the European Parliament, the Council, and social partners with valuable input and support which have been taken into account in this policy report.

Stakeholder input collected during the co-creation process resulted in the identification of proposed actions for the transition pathway. Each area of the transition pathway includes specific actions together with a timeframe for implementation: **short-term, medium-term, or long-term**. Indicatively, short-term indicates activities that should start as soon as possible; medium-term indicates activities that should start in the medium-term (i.e. by 2030); while long-term indicates the long-term, i.e. activities that should be launched by 2040.

Where a reference is made **to EU spending programmes**, the aim is to indicate potential financing and funding opportunities in existing programs.

[24] For more information on the co-creation process and the report, see:
https://single-market-economy.ec.europa.eu/sectors/fashion/textiles-transition-pathway_en

5. BUILDING BLOCKS OF THE TRANSITION PATHWAY

The aim of this chapter is to describe the actions needed to accelerate the green and digital transitions while achieving resilience and competitiveness of the EU textiles ecosystem. It follows the structure of the blueprint developed by the Industrial Forum Task Force 2[25] on transition pathways and is based on a building block approach, and where each building block covers a key aspect of the twin transition and the desired move to greater resilience and competitiveness.

For each topic listed under the respective building block **a list of specific actions** has been identified, together with their timeframe of implementation and identification of the most relevant players.

5.1 Sustainable competitiveness

The EU textiles ecosystem faces challenges with respect to its future competitiveness that include increased international competition, rising energy costs, unsustainable use of primary raw materials, lack of sufficient recycling and skills gaps. Sustainability presents the industry with new challenges but also with opportunities.

High demand for sustainable products is essential to support the transition to a more sustainable production both in the EU and worldwide, and stakeholders support the idea of enhanced labelling, information campaigns and incentives for sustainable products. However, companies raised concerns that consumers might not be willing to pay more to buy sustainable products, even if they state their intention to do so.

Integration in global value chains

A set of challenges stem from the ecosystem's deep integration in global value chains. The textile ecosystem is amongst the **most globalised value chains**. This strong exposure to international trade and global value chains inevitably increases the ecosystem's dependence on imports for domestic production and consumption. Over 70% of fashion products consumed in the EU are imported.

International trade and global value chains bring multiple benefits but also several challenges to the ecosystem. **Differences in social and environmental standards** – with, for example, the EU upholding very high social and environmental standards – can create an uneven playing field, affecting the competitiveness of the EU-made products. Ensuring a fair competition with third countries is crucial. Some strategic dependencies – on raw materials, chemicals (most notably dyestuff) and, most recently and with major concerns for the ecosystem, energy – also create concerns for competitiveness.

[25] The blueprint matrix including the different building blocks for all ecosystems on Transition Pathways was developed by the Industrial Forum (Task Force 2 – Support to the development of transition pathways)

The consultation process identified the need for a stronger use of trade and customs policies, to strengthen market surveillance, and to promote exports. In 2022 the EU exported EUR 67 billion of textiles and clothing. The three biggest export markets were Switzerland, the United Kingdom, and the United States.

Free Trade Agreements (FTAs) are considered as an effective tool to support operators in internationalisation and promote environmental and social legislation with trading partners while maintaining open and undistorted trade. In particular, the Trade and Sustainable Development (TSD) Chapter can help enforce environmental and social standards. In addition, the Generalised Scheme of Preferences (GSP) is one of the key EU trade instruments to assist developing countries to integrate in the world economy, reduce poverty, and support sustainable development through the promotion of core human and labour rights, environmental protection, and good governance.

Moreover, the **SWITCH** regional programmes in Asia[26], Africa[27] and the southern Mediterranean countries[28] offer textiles ecosystem players and their partners opportunities to increase the uptake of sustainable consumption and production (notably circular economy) practices by SMEs.

Market surveillance

Market surveillance and controls at EU's external borders play a key role to ensure fair competition in the Single Market. The importance of market surveillance[29], and the need to strengthen it, was stressed by many stakeholders in the co-creation process.

The Market Surveillance Regulation[30] lays down a framework for the enforcement of product compliance rules both in the internal market, by market surveillance authorities, and at EU external borders, by designated authorities (usually customs authorities) which are tasked with controls on products entering the Union market.

The newly created **EU Product Compliance Network**[31] coordinates and supports the increase of capacity in terms of testing facilities, IT systems, cross-border market surveillance actions in the EU in priority areas to be proposed by the competent authorities and ensures cross-cutting collaborations between different Administrative Cooperation Groups (AdCos)[32], such as the AdCo groups on Chemicals and Textile Labelling.

[26] http://www.switch-asia.eu/
[27] https://www.switchafricagreen.org
[28] https://www.switchmed.eu
[29] Market surveillance (europa.eu)
[30] Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products and amending Directive 2004/42/EC and Regulations (EC) No 765/2008 and (EU) No 305/2011 (OJ L 169, 25.6.2019, p. 1–44)
[31] Established under the Regulation (EU) 2019/1020, see also EU Product Compliance Network (europa.eu)
[32] Adcos (europa.eu)

Furthermore, the European Commission will provide support through joint initiatives (for example horizontal actions to facilitate the implementation of specific articles of the Market Surveillance Regulation or improve e-commerce surveillance, IT pilot projects to facilitate the detection of non-compliant products) and joint action projects such as **REACH4Textiles**[33] to step up collaborations between all relevant actors, notably customs and market surveillance authorities, industry and testing laboratories in the textiles ecosystem. The European Commission is currently also in the early preparatory phase of a possible new joint action with the aim to test/verify fibre composition in selected textile products.

A key concern for the ecosystem is **Intellectual Property Rights (IPR) infringements** due to the presence on the market of counterfeit clothing and footwear. The Intellectual Property Action Plan[34] includes many elements of importance for the ecosystem. To fight IP infringements, the European Commission will create an **EU Toolbox against counterfeiting**[35], clarifying the roles and responsibilities of right holders, intermediaries, and public authorities, setting out principles for joint action, cooperation and information sharing among right-holders, intermediaries, both online and offline, and law enforcement authorities.

EU support to SMEs

The Enterprise Europe Network (EEN)[36] helps businesses innovate and grow on an international scale. It is the world's largest support network for SMEs with international ambitions. The EEN Textile Sector Group has close contacts with the industry and can be used as a tool to transmit information about EU programmes, as its main objective is to give feedback and to advice its members on ecosystem information, updates on related policies, events, news, best practices, calls for proposals or other related EU initiatives. The Sector Group also provides advice to SMEs on legislation and its implementation.

In addition, EU funding for **clusters**[37] encourages competition and cooperation among firms with different industrial backgrounds, technological and business expertise. The Eurocluster project is a trans-European strategic initiative of industry clusters and aims to build resilience and accelerate transition to green and digital economy in the textile ecosystem. 29 European clusters are registered in the Textile Manufacturing sector, 11 European clusters are registered in the Manufacture of wearing apparel sector and 14 European clusters are registered in the Textile ecosystem.

Moreover, the European Commission has created an **Access2Markets portal**[38], available in all official EU languages, providing relevant information on export, import and intra-EU trade.

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[33] REACH4Textiles: Better market surveillance for textile products - EURATEX, REACH4Textiles | Centexbel - VKC
[34] COM/2020/760 final, see also Intellectual property action plan implementation (europa.eu)
[35] EU toolbox against counterfeiting (europa.eu)
[36] Enterprise Europe Network
[37] Cluster policy (europa.eu)
[38] https://trade.ec.europa.eu/access-to-markets/en/home

Beyond internationalisation, according to stakeholders, SMEs should be supported in their journey to sustainability and circularity, through partnerships and networks, knowledge and infrastructure. Under the recently adopted **Social Economy Action Plan**, the European Commission will support existing and new social economy businesses active in reuse, recycling and repair, and will adopt guidance on how to support uptake and partnerships[39] for the circular economy between social economy enterprises and other actors, including mainstream businesses, that will in particular, explore opportunities in reuse, recycling and repair.

Green transition

While the green transition represents a substantial opportunity, economic operators (particularly SMEs) in the ecosystem will need support to **transform and comply with sustainability requirements**. In this context, there are opportunities to boost the market for sustainable and circular textiles and leather, foster reuse, preparation for reuse and recycling activities and new business models and drive innovation, for example investments for sustainable product design, production processes, investments to produce recycled and renewable fibres and higher performing sustainable textiles, as well as business models focused on resource efficiency and circularity.

Many stakeholders have identified circular and sustainable products as market/export opportunities for the future competitiveness of the EU textiles ecosystem, besides high-end fashion products and innovative niche products. Some stakeholders also recognised recycled and renewable fibres as a new market on which the EU could become a leader. In addition, the development, commercialisation, deployment and promotion of the uptake of the safe and sustainable by design chemicals and materials[40] can promote the market for sustainable products.

Achieving a sustainable and circular textile ecosystem is a shared responsibility: Industry has a key role to play but consumers need to support this shift. Thus, it is essential to engage consumers in the green transition, for example by launching awareness campaigns to support the shift to sustainability like **ReSet the Trend - #RefashionNow** to engage citizens, in particular young Europeans, in making fashion consumption more sustainable and circular.[41]

Other initiatives such as the New European Bauhaus can provide opportunities as well.[42] The **New European Bauhaus** (NEB) initiative aims to translate the European Green Deal into tangible change that improves citizens' daily lives. The NEB Lab, its think-and-do tank, has one project focusing on a labelling strategy, which is developing tools (for example awards, logos or other actions) to characterise and recognise initiatives through the NEB values (beautiful, sustainable and together), and is committed to cover the fashion ecosystem to support the uptake of NEB principles.

[39] Social Economy Action Plan - Employment, Social Affairs & Inclusion - European Commission (europa.eu)
[40] Commission Recommendation (EU) 2022/2510 of 8 December 2022 establishing a European assessment framework for 'safe and sustainable by design' chemicals and materials (OJ L 325, 20.12.2022, p. 179–205)
[41] RESet the Trend (europa.eu)
[42] New European Bauhaus: beautiful, sustainable, together. (europa.eu)

Moreover, voluntary schemes developed by the European Commission, such as the **EU Ecolabel –** the official European Union voluntary label for environmental excellence (that can be awarded to Textile and Footwear Products[43]) and the **Green Public Procurement** criteria for textiles products and services[44], also play a role to promote sustainability [also see under 5.2 Regulation and Public Governance] and their uptake should be promoted. The use of **socially responsible public procurement** and social clauses in private procurement when buying footwear, workwear and textile is also relevant in that regard.[45]

Finally, the European Commission will continue to facilitate collaboration of stakeholders through the establishment of a **Transition Pathway Stakeholder Support Platform**. The Platform will be created for all transition pathway ecosystems. It will be a user friendly, multilingual platform to promote the collaboration needs of all types of stakeholders. The textiles section of the platform will support stakeholders by facilitating access to knowledge, resources and networking to contribute to the twin transition. The Platform will, for example, facilitate the information flow about funding opportunities for the textiles ecosystem. It will also include the commitments made by the ecosystem stakeholders and activities by the EU Pact for Skills Multi-Stakeholder Local Partnerships. To the extent possible, this support platform will ensure synergies with existing initiatives such as the European Circular Economy Stakeholder Platform (ECESP)[46] and the Leadership Group on textiles of the ECESP.

Therefore, in order to achieve a more sustainable and competitive textiles ecosystem, the following actions should be taken:

Actions	Actors	Timeframe
1. Promote, support and implement circular and sustainability practices, services and business models, including social economy enterprises (such as product-as-service models, take-back services, second-hand and repair services, innovative sorting and recycling) including through Horizon Europe, LIFE, and the 'ReSet the Trend #ReFashionNow' campaign and actions from the Social Economy Action Plan.	EU/EU Member States/Industry	Short/Medium
2. Recognise and value specific sustainability practices undertaken by the industry through, for example, promoting the uptake of safe and sustainable by design chemicals and materials, and promoting the visibility and uptake of the EU Ecolabel scheme.	EU/ EU Member States/Industry	Short/Medium
3. Continue making use of trade policies to promote trade and to support the respect of environmental and social rights	EU/EU Member	Short/Medium

[43] EU Ecolabel - Clothing and Textiles (europa.eu)
[44] EU criteria - GPP - Environment - European Commission (europa.eu), Green Public Procurement - Environment - European Commission (europa.eu), and EU green public procurement criteria for textiles products and services, SWD (2017) 231 final
[45] Socially responsible public procurement (europa.eu)
[46] https://circulareconomy.europa.eu/platform/en

with our trading partners through the Trade and Sustainable Development chapter in Free Trade Agreements and through the Generalised Scheme of Preferences (GSP).	States	
4. Increase the uptake of sustainable consumption and production of textile ecosystem products in developing countries by funding from the SWITCH programme.	EU	Short/Medium
5. Strengthen market surveillance for the ecosystem through cooperation with the EU Product Compliance Network to implement and develop EU joint action projects such as REACH4Textiles.	EU/ EU Member States	Short/Medium
6. Create and launch of an EU Toolbox against counterfeiting to step up the fight against IP infringements by clarifying the roles and responsibilities of right holders, intermediaries and public authorities and to improve cooperation and data sharing and encourage the use of new technologies.	EU/MS/Industry	Short/Medium
7. Develop a New European Bauhaus action for fashion to boost and disseminate Bauhaus values in the sector: beauty, sustainability and inclusion.	EU/Industry	Short/Medium
8. Support SMEs through the Enterprise Europe Network (notably through the EEN Textile Sector Group), the Eurocluster initiative and the EU Circular Economy Stakeholder Platform to innovate and accelerate the green transition. Provide EEN advisory services to SMEs in the ecosystem in areas from a dedicated business plan, to innovation, advice on various types of funding and EU programmes, to legislation, networking activities and events.	EU/ EU Member States /Industry	Short/Medium
9. Support SMEs through the Enterprise Europe Network (notably through the EEN Textile Sector Group) and the Eurocluster initiative to grow internationally by organising trade fairs, business-to-business matchmaking and provide advice on funding and the regulatory framework.	EU/ EU Member States /Industry	Short/Medium
10. Undertake risk assessment and prepare management plans for potential disruptions of global supply chains.	Industry	Short/Medium

11. Create more demand for sustainable products and onboard consumers in the green transition by launching consumer campaigns to create awareness and to reshape consumption patterns including under the motto ReSet the Trend #ReFashionNow, as well as supporting emotional durability by designing products that people want to keep.	EU/ EU Member States /Industry	Short
12. Reduce number of fashion collections per year.	Industry	Medium
13. Establish a community of practice for the textiles ecosystem as part of the Transition Pathway Stakeholder Support Platform.	EU/Industry/ other stakeholders (such as NGOs, trade unions, vocational and education training providers, lead organisations coordinating the implementation of the EU Pact for Skills for the Textiles ecosystem)	Short

5.2 Regulation and public governance

The EU Textiles Strategy aims to create a coherent framework for the green transition of the ecosystem and present a vision for the transition, whereby by 2030, textile products placed on the EU market are long-lived and recyclable, to a great extent made of recycled fibres, free of hazardous substances and produced in respect of social rights and the environment.

For the twin transition to be successful and to lead to increased resilience and competitiveness for the EU textiles ecosystem, legislation plays a fundamental enabling role. Mandatory requirements can help industry players to move towards circular and sustainable solutions and at the same time improve the level playing field in the single market.

The **EU Textiles Strategy** outlines proposals and initiatives which will have a great impact on the operations and business models of the companies operating in the ecosystem, and in turn also on consumers. While these new regulations will affect both large companies and SMEs, SMEs are likely to

have more difficulties in adapting and complying due to more limited resources and capacities. The various proposals and initiatives are at different preparatory and/or legislative phases, and for several there will still be consultations with stakeholders and necessary impact assessments to determine the exact scope and concrete measures.

In the context of impact assessments, the European Commission is committed to the application of the SME Test[47], to analyse the possible effects of EU legislative proposals on SMEs. The impact assessment report must for example include a description of:

- the environmental, social, and economic impacts, including impacts on small and medium enterprises and competitiveness, and an explicit statement if any of these are not considered significant;
- who will be affected by the initiative and how;
- the consultation strategy and the results obtained from it.

To name some of the key initiatives in the EU Textiles Strategy in more detail:

The proposal for a Regulation on **Ecodesign for Sustainable Products (ESPR)**[48] including the introduction of a **Digital Product Passport (DPP)**, establishes the framework for setting ecodesign requirements for specific product categories in order to improve their circularity, energy performance and other environmental sustainability aspects. This framework will enable the introduction of product performance and information requirements to be set for almost all categories of physical goods placed on the EU market.

The European Commission will look into **design requirements for specific products** in the foreseen implementation of the ESPR (through the adoption of delegated acts). Textiles is one priority area, however, the exact scope of products is still to be determined after consultation with relevant stakeholders and conducting the necessary impact assessments. In parallel to this, work is ongoing on the DPP outlining its technical specifications, as a key implementing tool of the proposed ESPR. The DPP seeks to provide information about products' environmental sustainability. It will help consumers and businesses make informed choices when purchasing products, facilitate repairs and recycling and improve transparency about products' life cycle impacts on the environment. The product passport should also help market surveillance and customs authorities to better perform respectively their checks inside the EU market and controls at EU external borders.

The information to be included in the proposed DPP will be identified when developing the ESPR delegated acts at product group level. The DPP may contain information related to the circularity and sustainability characteristics of products, including information necessary to improve track & tracing, as well as information related to the technical performance of the product.

[47] SME Test (europa.eu)
[48] COM (2022) 142 final , see also Ecodesign for sustainable products (europa.eu)

The European Commission is also planning to review **the Textile Labelling Regulation**.[49] At present only fibre content and non-textile parts of animal origin are regulated at EU level as harmonised (and compulsory) elements on the label. As part of the review of the Textile Labelling Regulation, and subject to a public consultation, followed by an impact assessment, the European Commission will look at the possibility of introducing digital labelling as well as harmonised rules on voluntary or mandatory disclosure of several other types of information. This information could include sustainability and circularity parameters of products. The initiative shall ensure full consistency and complementarity of labelling information with the foreseen information in the DPP to be introduced under the proposed Ecodesign Regulation and should make use of the DPP infrastructure, protocols and other technical specifications to the extent possible.

From a consumer perspective, the **Empowering Consumers Directive proposal** aims to ensure consumers get adequate information on products' durability and reparability before purchasing a product.[50] To complement this, the **Green Claims Directive proposal** will play a key role in setting more specific rules on the substantiation, verification and communication of voluntary environmental claims and environmental labelling schemes on the EU market.[51]

The European Commission has also adopted a legislative proposal on **common rules promoting the repair of goods**[52] which aims to extend the time during which consumers use the product before discarding it.

As announced in the EU Textiles Strategy, the European Commission will review the **EU Ecolabel criteria for textiles and footwear**[53] to support its uptake among producers and to offer consumers an easily recognisable and reliable way to choose eco-friendly products. The European Commission may also consider how to better enhance the use of possible (mandatory) criteria for **Green Public Procurement for textiles**[54]. Furthermore, work is also ongoing with representatives of the textile industry on the development of product environmental footprint category rules (PEFCRs) for apparel and footwear products.

Regarding waste, **the Waste Framework Directive (WFD)**[55] sets the basic concepts and definitions related to waste management, including definitions of waste recycling and recovery, and as required by it, Member States will need to set up separate collection for textile waste as of January 2025 [also see under 5.5 Infrastructure]. The European Commission is currently carrying out preparatory work for a targeted revision of the Waste Framework Directive. As part of this, a range of measures to harmonise

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[49] Regulation (EU) No 1007/2011 of the European Parliament and of the Council of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products and repealing Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the Council (OJ L 272 18.10.2011, p. 1), see also https://single-market-economy.ec.europa.eu/sectors/fashion/textiles-and-clothing-industries/legislation_en

[50] COM(2022) 143 final, see also Sustainable consumption (europa.eu)

[51] COM (2023) 166 final, see also Green claims (europa.eu)

[52] COM (2023) 155 final, see also Rules promoting the repair of goods (europa.eu)

[53] EU Ecolabel - Clothing and Textiles (europa.eu)

[54] Green Public Procurement - Environment - European Commission (europa.eu), and EU green public procurement criteria for textiles products and services, SWD (2017) 231 final

[55] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives ((OJ L 312 22.11.2008, p. 3), see also Waste Framework Directive (europa.eu)

the definitions, collection and sorting practices to reduce waste generation and create the conditions for economies of scale needed to develop the necessary sorting and recycling capacities and the investment security for the economic operators. The creation of the extended producer responsibility for textiles is also being considered.

Furthermore, the proposal for a **Corporate Sustainability Due Diligence Directive**[56]**,** the proposal for a **Regulation on prohibiting products made with forced labour on the Union market**[57] and the **Corporate Sustainability Reporting Directive**[58] are also of relevance for the textiles ecosystem.

As regards product safety, consumer products sold in the EU must comply with the **General Product Safety Directive**[59]. Additionally, there are European standards that apply to specific products such as children's clothing. With regard to **footwear**, directive 94/11/EC lays down rules on labelling of materials used in footwear sold in the EU.[60] The Directive applies to the labelling of the materials used in the main components of footwear for sale to consumers.

REACH[61] is another horizontal EU legislation ensuring a high level of protection of human health and the environment from chemicals. As such, it covers chemicals relevant for the textile ecosystem. Via a number of restrictions, REACH is addressing hazardous substances in textiles, footwear and leather products. Several chemicals used in apparel production are restricted or subject to authorisation under REACH. This applies to chemicals found in for example fabric dyes and finishing products.

Textile industry plants will have to comply with new legal norms[62] adopted in December 2022 under the **Industrial Emissions Directive**[63] to reduce their environmental impact. These environmental norms concern in particular pre-treatment or dyeing of textiles. In addition, the European Commission's proposal[64] to revise the Industrial Emissions Directive includes the extension of its scope to finishing operations of textiles.

Regarding KPIs, in the framework of the '**Monitoring of European industrial ecosystems'**, a project has been launched to analyse the green and digital transformation of industrial ecosystems and progress made over time. KPIs should be developed for the textiles ecosystem to monitor the progress.

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[56] COM (2022) 71 final, see also Corporate sustainability due diligence (europa.eu)
[57] COM (2022) 453 final, see also Commission moves to ban products made by forced labour (europa.eu)
[58] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting (OJ L 322, 16.12.2022, p. 15–80) see also Corporate sustainability reporting (europa.eu)
[59] Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety (OJ L 11, 15.1.2002, p. 4–17), recently revised, and adopted Regulation (EU) 2023/988 on general product safety will enter into force in June 2023.
[60] Directive 94/11/EC of European Parliament and Council of 23 March 1994 on the approximation of the laws, regulations and administrative provisions of the Member States relating to labelling of the materials used in the main components of footwear for sale to the consumer (OJ L 100, 19.4.1994, p.37), see also https://single-market-economy.ec.europa.eu/sectors/fashion/footwear-industry/legislation_en
[61] Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
[62] Commission Implementing Decision (EU) 2022/2508 of 9 December 2022 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions, for the textiles industry
[63] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334 17.12.2010, p. 17)
[64] COM (2022) 156

Furthermore, **managing post-consumer waste** is considered a major challenge, with special reference to the lack of EU-wide infrastructure for collecting and sorting, the need to develop a profitable textile waste recycling industry in Europe, accompanying the actors involved in waste management (collectors, sorters, recyclers) in the transition towards an industrial model of recycling (for more on this see under 5.5 Infrastructure).

Thus, in order to support and facilitate the transition of the textiles ecosystem, the following actions should be taken:

Actions	Actors	Timeframe
14. Follow-up on actions in the EU Strategy for Sustainable and Circular Textiles, including specific ecodesign requirements, the Digital Product Passport, circular and sustainable management of textile waste and possible extended producer responsibility rules, and encourage industry participation in the relevant consultations.	EU/ EU Member States /Industry	Short/Medium
15. Anticipate enhancing information to consumers on sustainability aspects of products in the context of foreseen ecodesign requirements through the proposed Digital Product Passport and the planned revision of the Textile Labelling Regulation, as well as in the context of the information requirements and fight against greenwashing practices following the Empowering consumers in the green transition and the Green Claims proposals.	EU/ EU Member States /Industry	Short/Medium
16. Finding common methods to assess and compare the sustainability performance of textile products in the context of the foreseen ecodesign requirements.	EU/ EU Member States /Industry	Short/Medium
17. Improving traceability and transparency in the textile value chain through the proposed Digital Product Passport.	EU/ EU Member States /Industry	Short/Medium
18. Developing KPIs for the textiles ecosystem to monitor the progress of the green and digital transformation in the framework of the project 'Monitoring of European industrial ecosystems'.	EU	Short

5.3 Social dimension

The textiles ecosystem is mostly a labour intensive one, so the social dimension is critical by definition. The twin transition will have a strong impact on employment (job numbers, job types and skills) and working conditions and will bring job changes. The twin transition could also play a role in promoting decent work and creating additional jobs in the EU, especially in relation to the circular economy.

The **European Green Deal** and the **EU Digital Strategy**[65] underline support to those regions, industries, workers, households, and consumers that will face the greatest challenges coming with the twin transition's social impact. The transition must be fair and inclusive paying particular attention to supporting those workers and consumers that will face the greatest challenges, as the Council Recommendation on ensuring a fair transition towards climate neutrality has identified.[66]

The **European Pillar of Social Rights**[67] provides principles for the EU Member States on issues such as the right to good education and training, social dialogue, equal treatment between women and men, equal opportunities, all workers have the right to fair pay and all workers have the right to speak up about decision that affect them at work.

Social dialogue has an important role to play. European sectoral social dialogue refers to discussions, consultations, negotiations, and joint actions involving organisations representing the two sides of industry (employers and workers). The European Commission consults the social partners of the textiles ecosystem on the possible direction of an initiative, in a first stage, and on the content of an initiative, in a second stage.

On 25 January 2023, the European Commission adopted a proposal for a **Council Recommendation on strengthening social dialogue in the European Union**.[68] The initiative aims to further strengthen and promote social dialogue with concrete actions at national and EU level. It renews a strong commitment to social dialogue as a cornerstone of the EU social market economy and its competitiveness. The initiative empowers social dialogue to adapt to the changing world of work and new trends on the labour market, against the backdrop of the transitions to a digital and climate neutral economy and the emergence of new forms of employment.

As highlighted in the Position Paper of IndustriAll to the EU Textiles Strategy, "social partners must be involved in **creating and implementing these Transition Pathways** in order for them to become a reality".[69]

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[65] COM (2022) 4388 final
[66] Council Recommendation on ensuring a fair transition towards climate neutrality (2022/C 243/04)
THE EUROPEAN PILLAR OF SOCIAL RIGHTS ACTION PLAN, ISBN 978-92-76-30755-6, see also EUROPEAN PILLAR; SOCIAL RIGHTS; ACTION PLAN (europa.eu), The European Pillar of Social Rights in 20 principles - Employment, Social Affairs & Inclusion - European Commission (europa.eu) and European Pillar of Social Rights (europa.eu)
[68] COM(2023) 38 final
[69] industriAll Position Paper 2021/132

With specific attention to wages, the **Directive on Adequate Minimum Wages** aims to establish a framework to improve the adequacy of statutory minimum wages and enhance effective access of workers to minimum wage protection.[70]

Specific attention also needs to be given to '**vulnerable workers**' given the high number of female workers in the EU, 70% of the workforce for textile and clothing, as well as high levels of migrant and informal workers in some regions of the world. With regards to female workers, it was highlighted that while they make up the majority of the workforce, they are less likely to be promoted and hold management positions. The current ageing workforce and the issues in attracting young workers to the ecosystem are other concerns for the ecosystem.

Although inequalities still exist, the EU has made significant progress in gender equality over the last decades. This is the result of:

- equal treatment legislation;
- gender mainstreaming, integration of the gender perspective into all other policies;
- specific measures for the advancement of women.

However, gender gaps remain, and women are still over-represented in lower paid sectors and under-represented in decision-making positions. The **EU Gender Equality Strategy** presents policy objectives and actions to make significant progress by 2025 towards a gender-equal Europe.[71] Key objectives are, among others, closing gender gaps in the labour market; achieving equal participation across different sectors of the economy and addressing the gender pay and pension gaps.[72]

Compliance with EU regulations on environmental and social standards[73] is key to achieve a sustainable and circular textiles ecosystem respecting social rights and ensuring a high degree of environmental protection. The need to involve SMEs - including social enterprises, such as sorting, reuse and repair enterprises - was highlighted by stakeholders in the co-creation process.

Moreover, the proposal for a **Directive on Corporate Sustainability Due Diligence** aims to foster sustainable and responsible corporate behaviour throughout global value chains.[74]

Social economy enterprises can have an important role to play in the job creation for vulnerable groups in sorting and repair as well as in the digital transition of the ecosystem as they do not only participate in the shift towards an inclusive and circular economy but are also active in promoting digital skills. They provide training opportunities in the digital sector, and as such are ensuring an inclusive digital transition.

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[70] Directive (EU) 2022/2041 of the European Parliament and of the Council of 19 October 2022 on adequate minimum wages in the European Union (OJ L 275, 25.10.2022, p. 33–47)
[71] COM/2020/152 final, see also Gender Equality Strategy (europa.eu)
[72] Gender Equality Strategy (europa.eu)
[73] Summaries of EU legislation - EUR-Lex (europa.eu)
[74] COM (2022) 71 final, see also Corporate sustainability due diligence (europa.eu)

Regarding the social aspect of the ecosystem, the European Commission fully recognises the importance of taking action to improve workers' conditions along the value chain worldwide. While the proposal for a Corporate Sustainability Due Diligence Directive is key in this respect, the European Commission has adopted other initiatives to complement it. For example, the **Decent Work Worldwide Communication** adopted in 2022 sets out policies to ensure decent working conditions, with textiles being identified as a key sector.[75]

In addition, the proposed **Regulation on prohibiting products made with forced labour on the Union market**[76] and the **Corporate Sustainability Reporting Directive**[77] are other important regulatory developments to ensure that social aspects are duly taken into account by all operators.

To improve the social aspects of the textile ecosystem the following actions should be taken:

Actions	Actors	Timeframe
19. Support a fairer and more inclusive European Union through the European Pillar of Social Rights and the Social Economy Action Plan.	EU/ EU Member States	Short/Medium
20. Implement the EU Gender Equality Strategy to make progress towards a gender-equal Europe and mainstream the gender perspective taking into account both women's and men's interests and concerns.	EU/ EU Member States /Industry	Short/Medium
21. Support up-and reskilling, access to lifelong learning and training opportunities through for example, the EU Pact for Skills for the Textiles ecosystem, to ensure workers are skilled for the twin transition.	EU/ EU Member States /Industry	Short/Medium
22. Consult the social partners on the direction and content of initiatives for the ecosystem through the European sectoral social dialogue for the textiles ecosystem.	EU/stakeholders	Short/Medium

[75] COM(2022) 66 final
[76] COM(2022) 453 final, see also Commission moves to ban products made by forced labour (europa.eu)
[77] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting (OJ L 322, 16.12.2022, p. 15–80), see also Corporate sustainability reporting (europa.eu)

5.4 Research & Innovation, techniques, and technological solutions

Innovation is a key driver of the EU industry's international competitiveness – innovative, sustainable, circular and high-quality products remain the most promising focus for the ecosystem. The EU emerges as a key source of new innovations, with the highest number of patents in the world and registered industrial designs, and the same number of trademarks as China.[78] The EU has strong leadership in high value-added segments where drivers of competitiveness are difficult to replicate. To maintain the global innovation lead of the ecosystem increased efforts are needed in research, technology development, innovation, sustainability, creativity and skills development.

It is critical that EU and national research and innovation funding responds to future market demands such as high-quality material innovation, safe and sustainable product design, sustainable business models, production processes and technologies for the treatment of textile waste. In this context, funding should support the adaptation of skills and innovation by enhancing research for innovative materials, the uptake of advanced technologies and industrial transition towards a more circular textiles ecosystem.

Furthermore, different good practises, instructions and guidelines are important tools to help and enable producers towards more sustainable and circular production patterns. An important instrument is the safe and sustainable by design framework which is foreseen in the **Chemicals Strategy for Sustainability**.[79] The main aim of the safe and sustainable by design framework is to promote research and innovation for safer and more sustainable chemicals and materials. It is also critical for the competitiveness of the European textiles ecosystem and is part of the recently published Transition Pathway for the Chemical industry.[80]

Horizon Europe supports research and innovation activities to promote the emergence and scale-up of innovation. For instance, for the period 2023-2024, dedicated funding is envisaged to improve the circularity of the textiles ecosystem through innovative sorting, recycling, and design for recycling. Further R&I activities under Horizon Europe, through a combination of focused and sector-independent actions, could support the implementation of the ERA Industrial Technology Roadmap for Circular Technologies and Business Models in the Textile, Construction and Energy-intensive Industries[81]. This support would further contribute to the delivery of priorities defined under the EU Textiles Strategy, the EU Pact for Skills for the Textiles ecosystem, the New European Bauhaus and other EU related initiatives currently under preparation such as the Ecodesign for Sustainable Products Regulation. To take a broader perspective on the textiles ecosystem and to cover leather and footwear, cooperation with relevant stakeholders would be ensured. Existing European partnerships are also highly relevant to the textiles ecosystem, such as *Made in Europe, Process4Planet*, Circular Bio-based Europe and EIT Culture &

[78] CSIL 2021 report on Data on the EU Textile Ecosystem and its Competitiveness
[79] COM (2020) 667 final, see also Chemicals strategy (europa.eu)
[80] Transition pathway (europa.eu)
[81] ERA industrial technology roadmap for circular technologies and business models in the textile, construction and energy-intensive industries - Publications Office of the EU (europa.eu)

Creativity. In addition, the European Technology Platform for the Future of Textiles and Clothing is the largest European open expert network of professionals involved in textile and clothing-related research and innovation. The Textile ETP is known as the biggest networking organisation for textile research and innovation in Europe.

InvestEU, the EU's investment programme for 2021-2027, aims at mobilising public and private investments in R&I and green technologies. The Research, Innovation and Digitalisation Policy Window comprises research, product development and innovation activities, the transfer of technologies and research results to the market to support market enablers and cooperation between enterprises, the demonstration and deployment of innovative solutions and support for the scaling up of innovative companies, and digitalisation of EU industry.

The challenge is to speed up innovation projects to reach the market in the upcoming years. Dissemination and replication can be a key lever for this acceleration as well as research and development needs that focus more on non-technological issues. Funding of infrastructure investment is important and should complement R&I investments in innovative technologies for the industry.

Moreover, **disruptive digital technologies** such as Big Data and Artificial Intelligence, are major vehicles in transforming business models and provide opportunities for SMEs in the textiles ecosystem to compete in a sustainable way. Big data can provide intelligence on consumer needs to which new manufacturing technologies must react. For example, data collection with regards to seasonal purchases of certain items, coupled with online searches, could be used to create a predictive tool as regards consumption patterns.

To take full advantage of the enabling power of digitalisation the industry needs to embrace new technologies: take up cloud processing technologies, explore the potential of AI, ensure the skilling of employees in the use of these technologies: more generally, be prepared to benefit from current and future waves of technologies in order to improve efficiency, productivity, and overall competitiveness.

The use of big data for 'social good'[82] can in particular be an instrument to address the way textiles are designed and consumed, including by looking at sustainable technological solutions, innovative business models and ethical production practices.

Technology can actively support the transition towards a more circular model. The assessment of digital, circular technologies and solutions in the textiles ecosystem shows different level of maturity. Many of the technologies (such as post-consumer recycling by adding cellulose-based fibres, chemical recycling, bio-based raw materials) are at medium Technology Readiness Level (TRL)**.** Various circular technologies (such as recycling technologies and replacement of raw materials with recycled content) demonstrate higher TRLs. Some of the technologies (such as material separation, plastic micro-fibre release reduction, digital authentication/passport for textile products/materials) are at relatively low

[82] Big Data for Social Innovation (ssir.org)

TRL and need further experimentation. Artificial intelligence (AI) technologies are at the lowest level (TRL1-3) of readiness.[83]

Intermediaries such as cluster organisations, digital innovation hubs, technology and training centres have an important role to play as an active scouting of suitable technologies, engagement and hands-on support for potential industrial end users.

Support for digital innovation and technology deployment will be provided through the Network of **European Digital Innovation Hubs** (EDIHs), which will develop the digital infrastructure needed to test new digital technologies ("test before invest") and to help the sector's workforce to better understand the opportunities of digitalisation and update their technological expertise. EDIHs combine the benefits of a regional presence with the opportunities available to a pan-European network leaving them well-placed to provide the services local companies need, through the local language and innovation ecosystem (for more see under 5.7 Investments and Funding).[84]

The important role of regulation, good governance principles and standardisation frameworks were also highlighted by stakeholders as important for a successful digital and green transition. The whole ecosystem and especially SMEs need to be able to rely on clear, stable and accessible regulations and standards for data management that address all key dimensions of data reliability, security and confidentiality, interoperability across the value chain, investment and skills needs. The **fulfilment of requirements for the proposed Digital Product Passport** is seen as especially challenging to many stakeholders in the textiles ecosystem. Stakeholders confirmed the need for a gradual approach for SMEs in taking up digital innovations and a need to provide dedicated training, especially on the proposed Digital Product Passport.

Developing and diffusing standardised methods to assess the performance and impact of technologies over their entire life cycle can help developing and diffusing sustainable technologies in different industries. Standardised methods are also important to promote innovation and circularity in the sector. Consequently, further action on standardisation could help promoting innovation for digital technologies for the ecosystem. Work is needed to identify possible standard gaps in relation to digitalisation of the industry or for new standards, including for innovative circular technologies.[85]

Currently, the European Commission is preparing a **standardisation request**, in close consultation with CEN/CENELEC/ETSI and a number of relevant stakeholders, to develop the Digital Product Passport system, meaning the set of IT standards and protocols that will be needed to make it fully operational. This work will benefit from the results of an ongoing Digital Europe project (CIRPASS) that will be designing Digital Product Passport concept for three main value chains: batteries, ICT product, and textiles. The European Commission has launched a 'standardisation booster' in order to facilitate a stronger link between R&I and standards. This standardisation booster aims to help beneficiaries, whose

[83] ERA industrial technology roadmap for circular technologies and business models in the textile, construction and energy-intensive industries - Publications Office of the EU (europa.eu)
[84] European Digital Innovation Hubs | Shaping Europe's digital future (europa.eu)
[85] ERA industrial technology roadmap for circular technologies and business models in the textile, construction and energy-intensive industries - Publications Office of the EU (europa.eu)

Horizon 2020 and Horizon Europe research results are likely to lead to the revision or creation of a standard, to test the relevance of their results for standardisation.[86] Cluster 5 of the Horizon Europe Work Programme 2023-2024 recently adopted by the European Commission includes five Coordination and Support Actions about standardisation.

To improve R&I, and techniques and technological solutions for the circular and digital transition of the textiles ecosystem the following actions should be taken:

Actions	Actors	Timeframe
23. Foster innovation and research on sustainable manufacturing processes and innovative technologies with low-carbon footprint for the development of new safe and sustainable by design chemicals and materials to make products circular, as well as support development of new digital technologies under the work programmes of Horizon Europe, Digital Europe and LIFE.	EU/ EU Member States /Industry	Short/Medium
24. Explore the possibilities for focused and generic support for R&I on textiles under Horizon Europe.	EU/ EU Member States /Industry	Short
25. Increase access and interaction of SMEs in the textiles ecosystem to/with tech support structures (for example through tech federations, digital innovation hubs, campuses, incubators, clusters, industry alliances).	EU/ EU Member States / Industry	Short/Medium
26. Explore the possibility to create a thematic group on digital innovation in the textiles ecosystem within the network of EDIH to boost cooperation and bottom-up contributions within the network, as well as ecosystem specific indicators in the EDIH mapping tools – allowing for example better identification of hubs supporting actions for the ecosystem**.**	EU/ EU Member States / Industry	Short
27. Support SMEs for development of digital skills through the EU Pact for Skills for the Textiles ecosystem in cooperation with multi-stakeholder skills partnerships at local and regional levels.	EU/ EU Member States /Industry	Short

[86] single-market-economy.ec.europa.eu/single-market/european-standards/standardisation-policy/standardisation-strategy_en

28. Implement the standardisation request on IT standards and protocols for the proposed Digital Product Passport, by CEN/CENELEC/ETSI and relevant stakeholders.	EU/ EU Member States /Industry	Short/Medium
29. Support research projects to test prototypes of Digital Product Passports for the sector through the Digital Europe Programme.	EU/ EU Member States /Industry	Short/Medium
30. Establish cooperation with European standardisation organisations (for example CEN, CENELEC) and industry to identify and fill main standardisation gaps for innovative digital technologies relevant for the textiles ecosystem (including via the Annual Union Work Programme for European Standardisation).	EU/ EU Member States /Industry	Short
31. Connect Horizon 2020 and Horizon Europe beneficiaries of actions supporting the textiles ecosystem to the 'Standardisation Booster' platform.	EU/ EU Member States /Industry	Short

5.5 Infrastructure

To overcome the infrastructural barriers to the green transition, there is a need for strategic planning involving both public and private entities in terms of textile waste management infrastructure and logistics. Investments are needed in textile waste separate collection, sorting and subsequent processing for reuse and recycling for textile-to-textile recycling infrastructure. For the digital transition, it is essential to facilitate data sharing and the reuse of data across companies. In addition, to ensure resilience and competitiveness of the ecosystem access to reliable and/or alternative sources of energy is important.

The physical infrastructure supporting the ecosystem is imperative in achieving the industry's digital, green, resilience and competitiveness objectives. Infrastructure is essential to scale innovations and bring them faster to the market. While all companies are affected, SMEs may struggle disproportionally, especially if affordable local access to vital infrastructure is not available.

The compulsory separate collection of post-consumer textile waste in Member States as of 1 January 2025 under the **Waste Framework Directive**[87] means that a physical infrastructure capable of collecting and sorting of 4.2–5.5 million tonnes[88] of textiles waste a year is needed. The European Commission is currently carrying out a revision of the Waste Framework Directive focusing notably on options to bring

[87] https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en
[88] Recycling-Hubs-FIN-LQ.pdf (euratex.eu) / Gherzi Textil Organisation

about a more circular and sustainable management of textile waste in view of the objectives set out in the EU Textiles Strategy (also see under 5.2 Regulation and Public Governance).

The **reuse share of separately collected textiles range between 50-75%**.[89] The reuse sector, mainly dominated by social enterprises, is currently the most active in the separate collection of textiles. Textiles are given for reuse either directly in second hand shops and sorting centres or textiles are deposited in street containers operated by charity organisations or municipalities. The lack of adequate industrial infrastructure, just emerging fibre-to-fibre recycling technologies and predominantly linear business models, mean that the rest tend to go towards open loop recycling or for energy recovery at best. 20%[90] of the textile waste collected annually throughout the EU is downcycled or landfilled/incinerated after sorting. When landfilled, the bio content of the textile waste creates further methane emissions. Notably, the majority (1.3 million tonnes a year)[91] of the collected textile waste is exported to third countries with non-existing recycling infrastructure and inadequate waste management systems.

The proposal for a new **Waste Shipments Regulation**[92] aims at easing shipments of waste for reuse and recycling in the EU, to support the transition to a circular economy; ensure that waste exported from the EU is managed in an environmentally sound manner in the destination countries; and stepping up enforcement to counteract illegal shipments of waste. This would provide opportunities for further waste treatment capacities in the EU and source of recycled feedstock in the EU.

Significant investments will be needed over the next few years to sort the hundreds of thousands of tonnes of non-re-wearable textiles that are expected to be collected each year towards and beyond 2025[93]. The **EURATEX ReHub** initiative is an industry driven plan to upscale textile waste in the EU. Establishing Recycling Hubs near textile plants will enable making raw materials by collecting, sorting, processing, and recycling textile waste.

In this context, an example of how EU funding is supporting the sector is the **Hubs4Circularity** project. It seeks to establish a network of circularity hubs that will act as regional centres of expertise for the circular economy through demonstrator plants of near commercial size to deploy cross-sectorial collaboration.[94] These hubs will bring together a range of stakeholders, including businesses, policymakers, research institutions, and civil society organisations, to promote the development and adoption of circular economy practices. The project is part of the European Commission's Horizon Europe research and innovation programme.

The **Circular Economy Action Plan** has flagged textiles as a sector with a high potential for circularity. In a vision for a circular economy, textiles placed on the market would be recyclable and to great extent made of recycled fibres. To thrive, such circular ecosystems will require industrial infrastructure that will

[89] JRC (2021) Circular economy perspectives in the EU Textile sector
[90] JRC (2021) Circular economy perspectives in the EU Textile sector
[91] JRC (2021) Circular economy perspectives in the EU Textile sector
[92] COM (2021) 709 final, see also Waste shipments (europa.eu)
[93] JRC (2021) Circular economy perspectives in the EU Textile sector
[94] The H4C Europe consortium - Hubs4Circularity (h4c-community.eu)

allow for stable and reliable supply and uptake of high-quality secondary raw materials through improved industrial capacities for recycled and renewable fibres and circular textile products. Hence, increased efforts are necessary to scale up the existing innovative chemical and mechanical fibre-to-fibre technologies across Europe.

A study on the technical, regulatory, economic, and environmental effectiveness of textile fibres recycling, published by the European Commission in 2021, shows that there is a **lack of funding to support textile recycling technologies**.[95] The same study indicates that policy actions should foster the development of recycling capacity and attract the necessary investments. For example, enhance traceability of materials and chemicals used in textiles; promote design for recyclability; ease access to feedstocks for textile fibre recycling; stimulate the demand for recycled fibres; set a frame with clear long-term direction.[96] Recycling textiles is more complex than recycling paper or glass bottles: a sweater or a shirt may include different natural and synthetic fibres and elastane which make the recycling process more complicated.[97]

When it comes to the digital transition, it is **imperative to foster the reuse of data** across companies and make better use of it. As envisioned in the European strategy for data, the common data spaces in strategic economic sectors will be interconnected and interoperable so the data could be broadly shared and used, while fully respecting the rights of individual persons and businesses over data. The textile ecosystem should make use of these data spaces to the full of their potential. Notably, sectoral data spaces identified[98] as especially relevant for the green and digital transition of the textiles ecosystem are: manufacturing, green deal, legal, procurement, skills and open science dataspaces. In this context, an important next step for the textiles ecosystem would be to define use cases and identify industry needs and opportunities for sharing and reusing data in sectoral data spaces.

Considering the climate crisis, the necessary infrastructure will need to be built or scaled up in order to secure the industry's access to renewable energy, such as solar panels, and input materials and thus ensure the competitiveness of the ecosystem as also outlined in the REPowerEU[99].

The following actions should be taken to create the infrastructure needed for the green and digital transition:

[95] https://op.europa.eu/en/publication-detail/-/publication/739a1cca-6145-11ec-9c6c-01aa75ed71a1/language-en
[96] ERA Industrial technology roadmap for circular technologies and business models in the textile, construction and energy-intensive industries ERA industrial technology roadmap for circular technologies and business models in the textile, construction and energy-intensive industries - Publications Office of the EU (europa.eu)
[97] https://www.environmentalleader.com/2021/11/fashion-industry-could-increase-recyclable-materials-market-share-with-new-technology-investments/
[98] Please see Annex II of the SWD (2022) 45 final on Common European Data Spaces
[99] REPowerEU: affordable, secure and sustainable energy for Europe (europa.eu)

Actions	Actors	Timeframe
Textile waste collection, sorting and recycling		
32. Implementation of the Waste Framework Directive, including separate collection for textile waste as of January 2025.	EU Member States /Industry	Short
33. Promote creation of innovative sorting and recycling hubs specialised in textile waste management across Europe for example with Hubs4Circularity support, funded by Horizon Europe, the national recovery and resilience plans, national or regional investments and programmes for infrastructure development.	EU/ EU Member States /Industry	Short/Medium

Actions	Actors	Timeframe
Common European data spaces		
34. Connection of textiles ecosystem actors with relevant common European data spaces to enable the development of data-driven business models including through the Digital Europe Programme.	EU/ EU Member States /Industry	Short
35. Access of textile ecosystem actors to funding for the development of data driven business models, including the development of data spaces in the Horizon Europe programme.	EU/ EU Member States /Industry	Short/Medium
Actions	Actors	Timeframe
Renewable energy		
36. Communicate and increase awareness on funding opportunities for the ecosystem in renewable energy (for example solar panels) with funding for example from the Recovery and Resilience Facility, cohesion policy funds, InvestEU, the Innovation Fund, the Modernisation Fund, Horizon Europe, and the LIFE programme.	EU/ EU Member States /Industry	Short/Medium

5.6 Skills

The European Commission has launched the EU Pact for Skills initiative, a central element of the European Skills Agenda. Under this EU initiative, the European Commission, together with EURATEX, CEC and COTANCE supported the establishment of a large-scale skills partnership for the textiles ecosystem. Launched in December 2021, the EU Pact for Skills for the Textiles ecosystem[100] aims to promote the up/re-skilling and the transfer of green and digital skills. It encourages commitments through specific actions and the creation of multi-stakeholder local skills partnerships.

Skills are key for delivering a fair green and digital transition and for boosting the EU's growth, competitiveness and social cohesion. Investing in reskilling and upskilling workers and integrating green and digital skills are important to address skills challenges in the textiles ecosystem.

Stakeholders unanimously agreed during the transition pathway co-creation process that the lack of workers and adequate skills are among the most critical issues for the transition of the textiles ecosystem. They notably underlined the following key aspects:

- **Ageing workforce** and **difficulty in attracting new skilled employees** (particularly young ones). In 2020, 36% of the industry's employees in the EU were over 50 – compared with 22% in 2010.[101] Particularly in some segments of the ecosystem (most notably in the production of man-made fibres, garments, and leather), the difficulty in filling vacancies is creating high concerns.
- **Need for specialised, skilled operators**, especially in view of the digital and green transition. 55% of European companies in the ecosystem reported difficulties in filling ICT vacancies, and 40% of companies have a green skills gap.

The textiles ecosystem requires more skilled workers. The textile, clothing, leather and footwear industries are dominated by medium level skills (secondary education) reached by 55% of the workers, followed by 32% of low level (primary education) and 13% of high-level qualifications.[102]

Stakeholders envisage that the gradual shift from lower towards medium and higher skilled employees will accentuate in the future, due to societal and technological changes: most notably, digitalisation, new sustainable production methods (for example in relation to automation) and sale channels, the increased demand for sustainable products, and possible new requirements under proposed legislative initiatives announced in the EU Textiles Strategy.

Lack of skills is especially felt in sustainability for the **green transition**. According to stakeholders, more investments are needed to support responsible innovation and the development of sustainable fibres,

[100] https://ec.europa.eu/social/main.jsp?catId=1534&langId=en
[101] CSIL 2021 report on Data on the EU Textile Ecosystem and its Competitiveness
[102] Eurostat (2019) Labour Force Survey

materials and processes as well as high value recycling in textiles. A special focus is needed in these areas for upskilling and reskilling.

Digitalisation will also require investing in new skills: For example, for digital designers, programmers and operators of machines, digital value chain analysts and managers, digital merchandisers, and e-commerce experts.

The **European Skills Agenda for sustainable competitiveness, social fairness and resilience**[103] sets ambitious, quantitative objectives for upskilling (improving existing skills) and reskilling (training in new skills) to be achieved within the next 5 years. Its 12 actions focus on skills for jobs by partnering up with Member States, companies and social partners to work together for change, by empowering people to embark on lifelong learning, and by using the EU budget as a catalyst to unlock public and private investments in people's skills. The aim is to ensure that the right to training and lifelong learning, enshrined in the European Pillar of Social rights, becomes a reality across Europe.

While upskilling and reskilling of the workforce, is primarily the responsibility of the industry and companies, it also requires the support of Member States, social partners, training institutions and a framework for these actions at EU-level.

The **EU Pact for Skills initiative** provides a framework for mobilising all actors in joint actions, in order to maximise the impact of investment in developing existing skills and training into new skills. Dedicated services in the form of networking, knowledge, and guidance and resources hubs are provided to signatories of the EU Pact for Skills.[104]

EURATEX, CEC and COTANCE have launched the **TCLF Skills Alliance** to implement the EU Pact for Skills for the Textiles ecosystem.[105]

Through the establishment of multi-stakeholder local skills partnerships the ecosystem companies, education providers, trade unions and other stakeholders will be engaged to commit to jointly agreed actions and targets under the EU Pact for Skills for the Textiles ecosystem (such as increase the use and accessibility of mentoring and apprenticeships schemes or incorporate new skills profiles responding to green and digital skills needs in vocational, education, training policy and curricula).

According to some stakeholders, entirely new job profiles are needed, most notably multifunctional circular roles, with high technology intensity (for example circular design professionals, textile recycling engineers, quality control operators, reverse logistics, waste management for sorting, repair, and garment deconstruction).

Support for the acquisition of digital skills in the textile industry is being provided by the network of **European Digital Innovation Hubs** which provides digitalisation support services, including skills and

[103] https://ec.europa.eu/social/main.jsp?catId=1223&langId=en
[104] Pact for Skills - Employment, Social Affairs & Inclusion - European Commission (europa.eu)
[105] Home | TCLFSkillsAlliance

training services, to SMEs in all sectors and regions of the EU, including the textile industry (see under 5.7 Investments and Funding for more details).

Women compose a majority of the workforce in the textiles ecosystem. However, the presence of women in managerial positions is low. Women hold less than 25% of leadership positions in top fashion companies; only 14% of major brands are run by female executives. Women also hold a disproportionately low percentage of senior positions on the factory floor. Therefore, actions and programmes to **boost women's entrepreneurship skills** could be considered to facilitate access to managerial and senior positions.

The European Commission promotes women entrepreneurship by encouraging networking and exchanges of good practices, as well as initiatives that support women's entrepreneurship skills. Some relevant EU actions and programmes are: the Enterprise Europe Network dedicated group of experts working on women's entrepreneurship, the gender-smart finance initiative under the InvestEU programme and Erasmus for Young Entrepreneurs.[106]

These challenges point to a strong need to upskill and reskill the workforce along the entire value chain. The **EU Pact for Skills for the Textiles ecosystem** will work in this direction. Some of the tools proposed in this area include apprenticeships and training schemes within companies, modernisation of existing or the setting up of new vocational education and training centres, cross-country collaborations for knowledge transfer, and the set-up of Skills Observatory to map skills requirements.

Active collaboration with vocational educational training providers and higher education is also needed to design more tailored and hands-on curricula and supply workers with the required new job profiles. The European Year of Skills[107] provides an extra impetus to these initiatives.

Coupled with increased investment in education and training, legal migration to the EU can also contribute to support the textiles ecosystem. The European Commission adopted in April 2022 the **Skills and Talent package**[108], which aims at attracting skills and talent that are needed in the EU. Different proposals made in this framework will help to streamline migration procedures and make the EU more attractive for non-EU citizens residing abroad.

To improve skills in the textiles ecosystem the following actions should be taken:

[106] https://single-market-economy.ec.europa.eu/smes/supporting-entrepreneurship/women-entrepreneurs_en
[107] COM(2022) 526 final, see also European Year of Skills 2023 (europa.eu)
[108] Legal migration: attracting skills and talents to the EU', COM/2022/657 final, 27.04.22.

Actions	Actors	Timeframe
37. Set up Pact for Skills Multi-Stakeholder Local Partnerships under the EU Pact for Skills for the Textiles ecosystem in relevant Member States/Regions, with dedicated support from the Single Market Programme (action grant of EUR 1.2 million from the SME Pillar – Work Programme 2023).	EU/ EU Member States /Industry/Regions/Other stakeholders (such as the lead organisations coordinating the implementation of the EU Pact for Skills for the Textiles ecosystem, vocational education, and training providers)	Short
38. Engage the ecosystem companies, education providers, trade unions and other stakeholders to commit to jointly agreed actions and targets under the EU Pact for Skills for the Textiles ecosystem, for example increase the use and accessibility of mentoring and apprenticeships schemes, incorporate new skills profiles responding to green and digital skills needs in vocational, education, training policy and curricula.	Industry/ EU Member States /Regions	Short/Medium
39. Gather intelligence for green and digital skills via the Textiles EU Pact for Skills Multi-Stakeholder Local Partnerships and the Textiles Skills Observatory.	EU Member States /Industry/ Lead organisations coordinating the implementation of the EU Pact for Skills for the Textiles ecosystem	Short/Medium
40. Organise events and awareness-raising activities on the attractiveness of the sector and new opportunities to work in the industry around the European Year of Skills.	EU/ EU Member States /Industry	Short
41. Develop skills and capacities of textiles ecosystem education staff and students through Erasmus+ mobility opportunities for vocational and higher education.	EU/ EU Member States /Industry	Short/Medium
42. Promote women participation to managerial and senior positions in companies, for example via the EU Pact for Skills for the Textiles ecosystem actions, raise awareness on EU programmes facilitating the exchange of entrepreneurial and management experience such as Erasmus for Young Entrepreneurs.	EU/ EU Member States /Industry	Short/Medium

5.7 Investments and funding

Innovation funding instruments are primarily dedicated to high-tech and/or high growth companies and focused on research activities and early phases of the innovation cycle. The innovation needs of the textile ecosystem demands more incremental innovation and a focus on the last phases of the innovation cycles – most notably product/industrial development, demonstration activities, prototyping and testing activities, and scale-up and uptake of technological solutions. Capacity building is also needed to boost digitalisation and develop competencies to help companies reduce their environmental impact.

Access to funding for the green and digital transitions is important for the players of the textiles ecosystem, particularly for SMEs. Beyond the need for public infrastructure investments (especially for textile waste recycling) and reskilling and upskilling, innovation is another key area where funding is needed.

Stakeholders underlined that areas where **investments are most needed** include:

- Production and uptake of new bio-based and recycled and renewable fibres;
- Scaling up and building capacity for automatic sorting and fibre-to-fibre recycling, especially chemical recycling technologies;
- Industrial technologies to reduce the use of new raw materials and prolong materials' lifecycles while resolving the trade-off between durability/sustainability.

As regards key investments and funding to enable the green transition of the textiles ecosystem, stakeholders recommended to:

- Give priority to supporting start-ups and SMEs;
- Support the implementation of the EU Pact for Skills for the Textiles ecosystem;
- Identify funding dedicated to R&I, textile-to-textile recycling and development of advanced technologies and processes in Europe;
- Increase funding opportunities to collect, sort and process textile waste.

These needs could be partially funded by specific calls under **Horizon Europe.** Exploring support possibilities for R&I could include a **potential European partnership for the textiles ecosystem**. During the co-creation process, stakeholders highlighted the importance of establishing a European partnership under Horizon Europe for the sustainable and circular transition of the ecosystem. Such support would complement existing funding opportunities available to textiles actors under the LIFE, DIGITAL EUROPE, and ERASMUS+ programmes in synergy with existing actions, such as Made in Europe, Process4Planet, WORTH Partnership project and Circular Bio-based Europe Joint Undertaking. **The SME pillar of the**

Single Market Programme[109] also provides support to SMEs for a better access to markets, a more favourable business environment and promoting entrepreneurship. It aims to foster the competitiveness, capacity building and sustainability of enterprises, especially SMEs.

The European Commission is dedicating significant EU funding to support the digital transformation. As part of its Digital Decade policy, the European Commission has set ambitious EU level targets to be achieved by 2030. For businesses, the targets are to achieve 90% of SMEs with a basic level of digital intensity. In particular, the **Digital Europe Programme** is the first EU programme specifically dedicated to supporting the roll out of digital technologies across the economy and foresees EUR 7.5 billion for projects in key capacity areas such as AI, cybersecurity, advanced digital skills. It is also supporting the setup of **European Data Spaces** and a network of **European Digital Innovation Hubs (EDIHs)**. However, digitalisation is also being supported through other programmes including the Recovery and Resilience Fund (RRF), ERDF and Horizon.

Together with Member States, the European Commission is investing EUR 1.5 billion, over a period of 7 years, in a network of **European Digital Innovation Hubs (EDIHs)** to provide tailor-made digitalisation support to SMEs and public sector organisations (PSOs) in all regions and sectors of the EU. Digital Innovation Hubs are one-stop-shops where businesses and PSOs can get advice and support to digitalise their organisations. The funding received by the hubs will be fully passed on in the form of digitalisation services to their customers, who will either receive those services for free or at a reduced rate. Services include 'test before investing', expert advice, skills and training, ecosystem building and support with access to finance.

Cohesion policy funds can support the adaptation through funding for research, digitalisation and innovation. The 27 Interreg programme supports multi-region innovation projects and hubs that could be explored in the textiles ecosystem. It also supports projects on setting up separate collection, sorting and recycling infrastructure.

The LIFE Programme[110] is the EU's funding instrument for the environment and climate action, with projects in almost all Member States. The new LIFE projects will help Europe become a climate-neutral continent by 2050, put Europe's biodiversity on a path to recovery by 2030, and contribute to the EU green recovery. **The Innovation Fund**[111] is a funding programme for innovative low-carbon technologies and aims to contribute to greenhouse gas reduction.

The Just transition Fund[112] provides support to Member States having identified the territories expected to be the most negatively impacted by the transition towards climate-neutrality. The Just Transition Fund supports the economic diversification and reconversion of the territories concerned.

The New European Bauhaus expresses the EU's ambition to create beautiful, sustainable, and inclusive places, products, and ways of living. At the EU level, the New European Bauhaus is implemented

[109] Support to SMEs (europa.eu)
[110] LIFE (europa.eu)
[111] Innovation Fund (europa.eu)
[112] Just Transition Fund (europa.eu)

through a cross-policy and cross-programme approach, i.e. by integrating its holistic concept in EU policies and by mobilising EU programmes. EU policy actions and funding opportunities supporting the New European Bauhaus initiative can help accelerate the transformation of the textiles ecosystem as well. To this end, and as put forward in the EU Textiles Strategy, the European Commission will support projects that increase sustainability while meeting demands related to aesthetics and inclusivity, to support the shift in consumption patterns.

The Recovery and Resilience Facility (RRF)[113] is particularly important to make European economies and societies more resilient. Its aim is to mitigate the economic and social impact of the COVID-19 pandemic and make European economies and societies more sustainable, resilient, and better prepared for the challenges and opportunities of the green and digital transitions. This may include support for projects setting up separate collection, sorting and recycling infrastructure. RRF provides loans and grants to support reforms and investments undertaken by EU Member States. RRF specifically requires that 37% of expenditure is for the climate objective and 20% for the digital objective – both targets were exceeded in the actual national Plans. Member States may target specific actions towards supporting the textiles ecosystem.

Through the European Commission's **Technical Support Instrument** (TSI) Member States can request tailor-made support to design and implement reforms linked to the sustainability, digitalisation, resilience and the social dimension of the textile industry's transition. The TSI is already providing support to the Transition Pathway for Tourism with projects focusing on promoting better data governance, developing tools for greening and digitalising the tourism industry, and improving destination management.

Public procurement[114], representing around 14% of EU GDP (around EUR 2 trillion per year), is yet another instrument available to channel investments to European circular textiles economy and thus foster the development of a green, digital and resilient ecosystem. The Green Public Procurement criteria are developed to facilitate the inclusion of green requirements in public tender documents. To support public authorities to green their purchasing decisions, the European Commission has set up a Helpdesk on green public procurement to provide answers to stakeholders' enquiries, and to promote and disseminate information on Green Public Procurement.[115]

For an overview of existing EU funding and investment programmes that may to some extent be relevant for the textiles ecosystem, see Table 1 below.

To support investments and funding for a green, digital and resilient textiles ecosystem, the following actions should be taken:

[113] REGULATION (EU) 2021/241 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 February 2021 establishing the Recovery and Resilience Facility (OJ L 57, 18.2.2021, p. 17–75), see also Recovery and Resilience Facility (europa.eu)
[114] https://ec.europa.eu/regional_policy/policy/how/improving-investment/public-procurement_en
[115] https://ec.europa.eu/environment/gpp/helpdesk.htm

Actions	Actors	Timeframe
43. Communicate and increase awareness on funding opportunities for the textiles ecosystem such as Horizon Europe, Digital Europe, LIFE, ESF+, InvestEU, Innovation Fund, the Single Market Programme, cohesion policy fund and Recovery and Resilience Facility, for example through the transition pathway stakeholder support platform.	EU/ EU Member States /Industry	Short
44. Explore support possibilities for R&I on textiles under Horizon Europe, including for a possible partnership. Build participation and cooperation with relevant European Partnerships and initiatives under Horizon Europe and other EU funding programmes.	EU/ EU Member States /Industry	Short/Medium
45. Use and promote the Green Public Procurement criteria to facilitate the inclusion of green requirements in public tender documents.	EU/ EU Member States	Short/Medium
46. Undertake reforms to support the sustainability, digitalisation, resilience, and the social dimension of the textile industry's transition through the Technical Support Instrument.	EU Member States /EU	Short/Medium

Table 1: Overview of EU funding programmes that may to some extent be relevant for the textiles ecosystem.

Funding programmes 2021-2027	Focus	MFF[116] (EUR bn)	NGEU[117] (EUR bn)	Total[118] in billion EUR
Horizon Europe[119]	Research and innovation.	86,1	5,4	**95.5**
InvestEU[120]	Sustainable investment, innovation and job creation in Europe.	3,1	6,1	**9.2**
Digital Europe Programme[121]	Bringing digital technology to businesses, citizens and public administrations	7,6	-	**7.6**
LIFE[122]	Environmental objectives and climate action	5,4	-	**5.4**
ERASMUS+[123]	Education and youth objectives	24,6	-	**24.6**
Single Market Programme (SMP)[124]	Well-functioning, sustainable internal market	4,2	-	**4.2**
Innovation Fund (IF)[125]	Supports innovation in low-carbon technologies and processes.	38	-	**38**
Recovery and Resilience Facility[126]	Mitigating effects of the pandemic and enhancing resilience of European economies and societies	-	723,8	**723.8**
European Regional Development Funds (ERDF) and Cohesion Fund[127]	Funding to public and private bodies in EU regions to reduce economic, social and territorial disparities. Investments in environment and transport infrastructure.	274	-	**274**
Just Transition Fund (JTF)[128]	Support to the regions most affected by the transition towards climate neutrality	8,5	10,9	**19.,3**
European Social Fund	Support for jobs and creation of a fair and	99,3	-	**99.3**

[116] Multiannual Financial Framework | Long-term EU budget 2021-2027 and recovery package - Consilium (europa.eu)
[117] New Generation EU, NextGenerationEU (europa.eu)
[118] Total programme envelopes do not reflect the share of the programme budget relevant to the textiles ecosystem.
[119] https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/horizon-europe_en
[120] https://investeu.europa.eu/index_en
[121] https://digital-strategy.ec.europa.eu/en/activities/digital-programme
[122] LIFE (europa.eu)
[123] What is Erasmus+? | Erasmus+ (europa.eu)
[124] Overview (europa.eu)
[125] What is the Innovation Fund? (europa.eu)
[126] Recovery and Resilience Facility (europa.eu)
[127] Inforegio - European Regional Development Fund (europa.eu)
[128] Just Transition Fund (europa.eu)

Plus (ESF+)[129]	socially inclusive society			
European Defence Fund (EDF)[130]	Support to collaborative defence research and development in order to foster an innovative and competitive defence industrial base.	8	-	**8**
Total budget in billion EUR:				**1,308,9**

5.8 Ecosystem's readiness to support EU strategic autonomy and defence efforts

The competitiveness and resilience of the EU textiles ecosystem is key for the open strategic autonomy of the EU economy and society. Furthermore, to support defence efforts some textiles products are essential to produce.

Most textiles companies operate in complex value chains, often relying both on external supplies to sustain supply and significantly on export markets to sustain demand and competitiveness. Products from the ecosystem are important inputs for many other industrial value chains such as construction, automotive, personal or environmental protection.

Materials, leather and textile products and solutions provided by the ecosystem in the form of technical textiles are vital to maintain essential services such as healthcare (for example surgical gowns, wound dressings, implants), food production (for example geogrids or insect protection nets in agriculture, filters and protective packaging in food processing and storage), energy and water supply (for example reinforcement structures for wind turbine blades and filtration), transportation (for example safety equipment such as ropes, belts, nets and airbags in land, water and airborne transport, insulation material) and defence (for example composite structures for ballistic protection and protective clothing). The integration of value chains has to be well managed to avoid any supply chain risks.

To support defence efforts the products that would be more essential to produce are textiles used in defence systems and weapons, tents, shelters, parachutes and military fabrics for uniform, leather boots and protective equipment. In particular Italy, which is the major EU producer of fabrics and apparel, has potential for the set-up of the necessary facilities for the diversification of the existing production. Germany, as a major producer of technical textiles, also has the potential to diversify its production of technical textiles, which are used for industrial applications and could prove vital to support defence efforts.

[129] European Social Fund Plus (europa.eu)
[130] The European Defence Fund (EDF) (europa.eu)

Among other financial instruments, the **European Defence Fund** (EDF), with a budget of close to EUR 8 billion for 2021-2027 (EUR 2.7 billion to fund collaborative defence research and EUR 5.3 billion to fund collaborative capability development projects complementing national contributions), foresees funding opportunities implying the textiles ecosystem.

The **Pact for Skills for the Textiles ecosystem** can strengthen the resilience of the ecosystem during a crisis. Members of the Pact have access to knowledge on upskilling and reskilling needs, advice on relevant funding instruments to boost the skills in their regions and countries, and partnership opportunities.

To improve the ecosystem's readiness to support defence efforts the following actions should be taken:

Actions	Actors	Timeframe
47. Liaise with national defence authorities to ascertain how the ecosystem could contribute to the development of military capabilities.	EU/ EU Member States	Short/Medium/Long
48. Reskilling of workers through the Pact for Skills to take into account a war situation.	EU/ EU Member States /Industry	Short/Medium/Long
49. Develop plans to increase the readiness to shift production and prioritise deliveries for defence purposes to sustain Armed Forces, defence companies and other relevant sectors in case of crises of war.	Industry	Short/Medium/Long
50. Set up contingency plans to handle disruptions in supplies of input materials, water and energy, as well as plans to handle situations where the workforce is mobilised for war efforts. These plans should build on a mapping of supply chains and dependencies.	EU Member States /Industry	Short/Medium/Long

6. NEXT STEPS

The co-creation process proved to be very useful in getting input and building together this transition pathway with the stakeholders of the ecosystem. With the publication of the policy report the process continues with a co-implementation phase involving all interested stakeholders. The aim of the co-implementation phase is to bring forward the agreed actions and to monitor progress of the transition. Stakeholders are encouraged to present their commitments as they see fit.

7. MONITORING AND CO-IMPLEMENTATION

The Textiles Transition Pathway requires cooperation at every step and at all levels. The co-creation process has shown how relevant it is for all ecosystem stakeholders to work together, with the view to support the twin transition of the ecosystem and to strengthen its resilience and competitiveness.

Stakeholder engagement is an indispensable building block also for the co-implementation of the transition pathway. The publication of the transition pathway policy report kick-starts the co-implementation process with **a call for stakeholder commitments** to underpin the actions of the transition pathway. The European Commission will facilitate the co-implementation, in cooperation with stakeholders, by taking stock of commitments and progress made.

In order to ensure a continuous collaboration with stakeholders, the European Commission will establish a **Transition Pathway Stakeholder Support Platform**. It will be a user friendly, multilingual platform, to facilitate the collaboration of stakeholders coming from SMEs, larger companies, industry associations, trade unions, and public authorities.

The EU Industrial Forum oversees the transition pathways of all industrial ecosystems, and it will be regularly updated on the progress of this transition pathway. Assessing progress should be a collaborative process with the stakeholders of the ecosystem.

In addition, in the framework of the 'Monitoring of European industrial ecosystems' project, key performance indicators will be established and monitored for the textiles ecosystem. This is key to allow policymakers and industry to track progress over time and get feedback whether the ecosystem is moving in the right direction. For each indicator, a progress tracker should be employed to monitor the transition pathway.

8. ANNEX

Overview of actions

Actions	Actors	Timeframe
Building block 1: Sustainable Competitiveness		
1. **Promote, support and implement circular and sustainability practices, services and business models, including social economy enterprises (such as product-as-service models, take-back services, second-hand and repair services, innovative sorting and recycling) including through Horizon Europe, LIFE, and the 'ReSet the Trend #ReFashionNow' campaign and actions from the Social Economy Action Plan.**	EU/ EU Member States /Industry	Short/Medium
2. **Recognise and value specific sustainability practices undertaken by the industry through, for example, promoting the uptake of safe and sustainable by design chemicals and materials, and promoting the visibility and uptake of the EU Ecolabel scheme.**	EU/ EU Member States /Industry	Short/Medium
3. **Continue making use of trade policies to promote trade and to support the respect of environmental and social rights with our trading partners through the Trade and Sustainable Development chapter in Free Trade Agreements and through the Generalised Scheme of Preferences (GSP).**	EU/EU Member States	Short/Medium
4. **Increase the uptake of sustainable consumption and production of textile ecosystem products in developing countries by funding from the SWITCH programme.**	EU	Short/Medium
5. **Strengthen market surveillance for the ecosystem through cooperation with the EU Product Compliance Network to implement and develop EU joint action projects such as REACH4Textiles.**	EU/ EU Member States	Short/Medium
6. **Create and launch of an EU Toolbox against counterfeiting to step up the fight against IP infringements by clarifying the roles and responsibilities of right holders, intermediaries and public authorities and to improve cooperation and data sharing and encourage the use of new technologies.**	EU/ EU Member States/Industry	Short/Medium

7. **Develop a New European Bauhaus action for fashion to boost and disseminate Bauhaus values in the sector: beauty, sustainability and inclusion.**	EU/Industry	Short/Medium
8. **Support SMEs through the Enterprise Europe Network (notably through the EEN Textile Sector Group), the Eurocluster initiative and the EU Circular Economy Stakeholder Platform to innovate and accelerate the green transition. Provide EEN advisory services to SMEs in the ecosystem in areas from a dedicated business plan, to innovation, advice on various types of funding and EU programmes, to legislation, networking activities and events.**	EU/EU Member States/Industry	Short/Medium
9. **Support SMEs through the Enterprise Europe Network (notably through the EEN Textile Sector Group) and the Eurocluster initiative to grow internationally by organising trade fairs, business-to-business matchmaking and provide advice on funding and the regulatory framework.**	EU/ EU Member States /Industry	Short/Medium
10. **Undertake risk assessment and prepare management plans for potential disruptions of global supply chains.**	Industry	Short
11. **Create more demand for sustainable products and onboard consumers in the green transition by launching consumer campaigns to create awareness and to reshape consumption patterns including under the motto ReSet the Trend #ReFashionNow, as well as supporting emotional durability by designing products that people want to keep.**	EU/ EU Member States /Industry	Short/Medium
12. **Reduce number of fashion collections per year.**	Industry	Medium
13. **Establish a community of practice for the textiles ecosystem as part of the Transition Pathway Stakeholder Support Platform.**	EU/Industry/ other stakeholders (such as NGOs, trade unions, vocational and education training providers, lead organisations coordinating the implementation of the EU Pact for Skills for the Textiles ecosystem)	Short
Building block 2: Regulation and Public Governance		
14. **Follow-up on actions in the EU Strategy for Sustainable and Circular Textiles, including specific ecodesign requirements, the Digital Product Passport, circular and sustainable management of textile waste and possible extended producer responsibility rules, and**	EU/ EU Member States /Industry	Short/Medium

encourage industry participation in the relevant consultations.		
15. **Anticipate enhancing information to consumers on sustainability aspects of products in the context of foreseen ecodesign requirements through the proposed Digital Product Passport and the planned revision of the Textile Labelling Regulation, as well as in the context of the information requirements and fight against greenwashing practices following the Empowering consumers in the green transition and the Green Claims proposals.**	EU/ EU Member States /Industry	Short/Medium
16. **Finding common methods to assess and compare the sustainability performance of textile products in the context of the foreseen ecodesign requirements.**	EU/ EU Member States /Industry	Short/Medium
17. **Improving traceability and transparency in the textile value chain through the proposed Digital Product Passport.**	EU/ EU Member States /Industry	Short/Medium
18. **Developing KPIs for the textiles ecosystem to monitor the progress of the green and digital transformation in the framework of the project 'Monitoring of European industrial ecosystems'.**	EU	Short
Building block 3: Social Dimension		
19. **Support a fairer and more inclusive European Union through the European Pillar of Social Rights and the Social Economy Action Plan.**	EU/ EU Member States	Short/Medium
20. **Implement the EU Gender Equality Strategy to make progress towards a gender-equal Europe and mainstream the gender perspective taking into account both women's and men's interests and concerns.**	EU/ EU Member States	Short/Medium
21. **Support up-and reskilling, access to lifelong learning and training opportunities through for example, the EU Pact for Skills for the Textiles ecosystem, to ensure workers are skilled for the twin transition.**	EU/ EU Member States /Industry	Short/Medium
22. **Consult the social partners on the direction and content of initiatives for the ecosystem through the European sectoral social dialogue for the textiles ecosystem.**	EU/ Stakeholders	Short/Medium

Building block 4: R&I, Techniques and Technological Solutions		
23. **Foster innovation and research on sustainable manufacturing processes and innovative technologies with low-carbon footprint for the development of new safe and sustainable by design chemicals and materials to make products circular, as well as support development of new digital technologies under the work programmes of Horizon Europe, Digital Europe and LIFE.**	EU/ EU Member States /Industry	Short/Medium
24. **Explore the possibilities for focused and generic support for R&I on textiles under Horizon Europe.**	EU/ EU Member States /Industry	Short
25. **Increase access and interaction of SMEs in the textiles ecosystem to/with tech support structures (for example through tech federations, digital innovation hubs, campuses, incubators, clusters, industry alliances).**	EU/ EU Member States /Industry	Short/Medium
26. **Explore the possibility to create a thematic group on digital innovation in the textiles ecosystem within the network of EDIH to boost cooperation and bottom-up contributions within the network, as well as ecosystem specific indicators in the EDIH mapping tools – allowing for example better identification of hubs supporting actions for the ecosystem.**	EU/ EU Member States /Industry	Short
27. **Support SMEs for development of digital skills through the Pact for Skills for the Textiles ecosystem in cooperation with multi-stakeholder skills partnerships at local and regional levels.**	EU/ EU Member States /Industry	Short
28. **Implement the standardisation request on IT standards and protocols for the proposed Digital Product Passport, by CEN/CENELEC/ETSI and relevant stakeholders.**	EU/ EU Member States /Industry	Short/Medium
29. **Support research projects to test prototypes of Digital Product Passports for the sector through the Digital Europe Programme.**	EU/ EU Member States /Industry	Short/Medium
30. **Establish cooperation with European standardisation organisations (for example CEN, CENELEC) and industry to identify and fill main standardisation gaps for innovative digital technologies relevant for the textiles ecosystem (including via the Annual Union Work Programme for European Standardisation).**	EU/ EU Member States /Industry	Short
31. **Connect Horizon 2020 and Horizon Europe beneficiaries of actions supporting the textiles**	EU/ EU Member States /Industry	Short

ecosystem to the 'Standardisation Booster' platform.		
Building block 5: Infrastructure		
32. **Implementation of the Waste Framework Directive, including separate collection for textile waste as of January 2025.**	EU Member States /Industry	Short
33. **Promote creation of innovative sorting and recycling hubs specialised in textile waste management across Europe for example with Hubs4Circularity support, funded by Horizon Europe, the national recovery and resilience plans, national or regional investments and programmes for infrastructure development.**	EU/ EU Member States /Industry	Short/Medium
34. **Connection of textiles ecosystem actors with relevant common European data spaces to enable the development of data-driven business models including through the Digital Europe Programme.**	EU/ EU Member States /Industry	Short
35. **Access of textile ecosystem actors to funding for the development of data driven business models, including the development of data spaces in the Horizon Europe programme.**	EU/ EU Member States /Industry	Short/Medium
36. **Communicate and increase awareness on funding opportunities for the ecosystem in renewable energy (for example solar panels) with funding for example from the Recovery and Resilience Facility, cohesion policy funds, InvestEU, the Innovation Fund, the Modernisation Fund, Horizon Europe, and the LIFE programme.**	EU/ EU Member States /Industry	Short/Medium
Building block 6: Skills		
37. **Set up Pact for Skills Multi-Stakeholder Local Partnerships under the EU Pact for Skills for the Textiles Ecosystem in relevant Member States/Regions, with dedicated support from the Single Market Programme (action grant of EUR 1.2 million from the SME Pillar – Work Programme 2023).**	EU/ EU Member States /Industry/Regions/Other stakeholders (such as the lead organisations coordinating the implementation of the EU Pact for Skills for the Textiles ecosystem, vocational education and training providers)	Short
38. **Engage the ecosystem companies, education providers, trade unions and other stakeholders to commit to jointly agreed actions and targets under the EU Pact for Skills**	Industry/ EU Member States/Regions	Short/Medium

for the Textiles ecosystem, for example increase the use and accessibility of mentoring and apprenticeships schemes, incorporate new skills profiles responding to green and digital skills needs in vocational, education, training policy and curricula.		
39. **Gather intelligence for green and digital skills via the Textiles EU Pact for Skills Multi-Stakeholder Local Partnerships and the Textiles Skills Observatory.**	EU Member States /Industry/ Lead organisations coordinating the implementation of the EU Pact for Skills for the Textiles ecosystem	Short
40. **Organise events and awareness-raising activities on the attractiveness of the sector and new opportunities to work in the industry around the European Year of Skills.**	EU/ EU Member States /Industry	Short
41. **Develop skills and capacities of textiles ecosystem education staff and students through Erasmus+ mobility opportunities for vocational and higher education.**	EU/ EU Member States /Industry	Short/Medium
42. **Promote women participation to managerial and senior positions in companies, for example via the EU Pact for Skills for the Textiles ecosystem actions, raise awareness on EU programmes facilitating the exchange of entrepreneurial and management experience such as Erasmus for Young Entrepreneurs.**	EU/ EU Member States /Industry	Short/Medium
Building block 7: Investments and Funding		
43. **Communicate and increase awareness on funding opportunities for the textiles ecosystem such as Horizon Europe, Digital Europe, LIFE, ESF+, InvestEU, Innovation Fund, the Single Market Programme, cohesion policy fund and Recovery and Resilience Facility, for example through the transition pathway stakeholder support platform.**	EU/ EU Member States /Industry	Short
44. **Explore support possibilities for R&I on textiles under Horizon Europe, including for a possible partnership. Build participation and cooperation with relevant European Partnerships and initiatives under Horizon Europe and other EU funding programmes.**	EU/ EU Member States /Industry	Short/Medium
45. **Use and promote the Green Public Procurement criteria to facilitate the inclusion of green requirements in public tender documents.**	EU/ EU Member States	Short/Medium
46. **Undertake reforms to support the sustainability, digitalisation, resilience and the social dimension of the textile industry's transition through the Technical Support Instrument.**	EU/ EU Member States	Short/Medium

Building block 8: Ecosystem's Readiness to Support EU strategic autonomy and Defence Efforts		
47. **Liaise with national defence authorities to ascertain how the ecosystem could contribute to the development of military capabilities.**	EU/ EU Member States	Short/Medium/Long
48. **Reskilling of workers through the Pact for Skills to take into account a war situation.**	EU/ EU Member States /Industry	Short/Medium/Long
49. **Develop plans to increase the readiness to shift production and prioritize deliveries for defence purposes to sustain Armed Forces, defence companies and other relevant sectors in case of crises of war.**	Industry	Short/Medium/Long
50. **Set up contingency plans to handle disruptions in supplies of input materials, water and energy, as well as plans to handle situations where the workforce is mobilized for war efforts. These plans should build on a mapping of supply chains and dependencies.**	EU Member States /Industry	Short/Medium/Long

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