

Speeding up the sustainability transition to fibre to fibre textile recycling



May, 2023

The case of the European Union

How do we use public policy to speed up, and scale up, the sustainability transition in the textile sector?

The case of the European Union

☐ The Summary

The 2022 European Union Strategy for Sustainable and Circular Textiles Circularity Strategy ('The Strategy') will significantly impact the EU textile sector at all stages of the value chain. While the Textiles Strategy provides a 'framework' for action by the industry and clear direction forward, the details of how key objectives will be operationalised are still under development.

This Cambridge Policy Boot Camp (CPBC),™ developed by the Centre for Resilience and Sustainable Development, brought together 35 industry experts, fashion academics and policy makers, selected from over 100 applicants, to identify specific policy concepts that could operationalise the *Strategy* objectives for close loop fibre to fibre textile recycling.

The challenge that the participants addressed in this research was:

Where, in the EU fashion system, are the most effective intervention points to leverage the transition towards sourcing fully closed loop synthetic fibres by 2030, what are these interventions, and how will the transition costs be met?

Five strategic policy concepts were identified across three themes:

- Think globally and align regulations and rules right across the global value chain.
- Develop investment pathways for scaling up recycling infrastructure in the EU and across its global value chains

 Create mechanisms to improve data collection, transparency, information and data coordination on textile waste recycling, trading, technology, demand and resources.

For Theme one, the concepts include conducting periodic reviews of regulations at national, EU and international levels to identify gaps and inconsistencies within, and between, different regulatory regimes. For example, existing international tariff codes undermine the industry's ability to separate textile waste, suitable for recycling, from other types of used textiles, thus hampering the capacity to trade and transport fibres to fibre recycling facilities. This theme also included proposals to develop strategic trade agreements with fibre/fabric/garment producing countries to facilitate trade in textile waste for recycling into existing production supply chains.

For theme two, stakeholders proposed the creation of an EU-industry investment facility to jointly develop a strategic recycling infrastructure that benefits the whole sector – either within the EU and/or across the global value chain (including fibre/fabric producing countries). Several supporting proposals were also identified. These included developing product standards to reduce product variability (currently a barrier to recycling) and thereby increase the volume of recyclable material, making use of EU financial guarantees to reduce investment risk, and expanding the use of existing accelerator programs on investments in producing countries.

For theme three, stakeholders proposed the creation of specific EU institutions with the mandate to establish mechanisms for promoting trade, data and information on textile recycling and technologies. This included the establishment of a Textile Market Authority to govern an centralised trading mechanisms (akin to electricity trading) and a Recycled Textiles Technology Agency to collate data, statistics and market assessments. The later would also provide transparent data on the technology readiness of different recycling technologies and report on the likely environmental, social and economic implications of the technology across the value chain.

To express interest in future work in this area please email Dr Hannah Parris, Centre for Resilience and Sustainable Development hrp44@cam.ac.uk

☐ The Challenge

The textile and fashion sector has great ambitions, and has made significant technical progress, in transitioning to being a sustainable, circular industry with positive social impacts. But translating these ambitions into impact at scale remains elusive.

The European Union is the world's largest importer of clothing and textiles and the world's second largest exporter. The EU imports 97% of all its finished clothing and household textiles (Kohler et al, 2021).

Textiles have on average the fourth highest negative life cycle impact on the environment and climate change, after food, housing and mobility.in European (EU-27) countries, with most of these impacts being felt in less developed regions across the world (EEA, 2022). One of the reasons for this is the large amount of textiles, estimated at around 5.8 million tons per year in 2018, or 11kg per person, that is simply thrown away (European

Commission, 2022). The average textile consumption per person in the EU in 2020 was over 6 kg of clothing, 6 kg of household textiles and almost 3 kg of shoes (EEA, 2022).

While there has been encouraging technical progress, and business model innovation, that is moving the sector towards its circularity goals, there is broad recognition that 'more needs to be done' to reach the scale and speed of change required. Substantial academic research and experience from other sectors demonstrates that scaling up use of new technologies requires changing the 'rules of the game' (the 'institutions') that shape the system within which the technology operates (Geels et al, 2017).1 For this reason, the European Union has developed the EU Sustainable and Circular Textiles Strategy ('The Strategy') to support and accelerate the sector's transition (European Commission, 2022).

This Strategy will impact the EU textile sector at all stages of the value chain both within Europe and in source and production countries. The Strategy provides a 'framework' to support the sustainability transition within the industry, but more detail needs to be crafted in order to make the Strategy operationalizable.

The EU Sustainable and Circular Textile Strategy is a multi-stage strategy to reshape the future of the textile sector. This Cambridge Policy Boot Camp (CPBC) focuses on one element of the *Strategy* – moving towards closed loop recycling of synthetic fibres. This

¹ Broadly, institutions are the formal and informal 'rules of the game' which make a technology or practise useful in an industry. For example, the exchange of 'tech packs' between brand buyers and a cut-make-trim producer is a type of institution. Regulations and policies such as an extended producer responsibility (EPR) scheme, are another type of (formal) institution. The role of fashion design in the cultural life of Europe is another type of institution. By changing incentives structures, modes of operation and even cultural values, public policies and regulations can help speed up institutional change across an industry – and achieve sustainability goals at a scale and timeframe that makes a difference.

particular topic was chosen for three reasons: it is a complex and technically difficult topic, it will impact almost every aspect of the value chain, and there is a growing consensus on the (technical) end goal. The focus now is on the transition process towards, a sector where fiber-to-fiber recycling is the norm.

Fibre to fibre recycling (or 'closed loop' recycling) - where textiles are collected and processed for further use as new clothing – has the potential to reduce waste by18-26% by 2030 (McKinsey and Company, 2022). Currently there is around 1% fibre to fibre recycling in the EU (EEA, 2022). Estimates suggest that, in principle, this could increase to around 18-26% of gross textile waste by 2030 (McKinsey and Company, 2022).

This raises the issues of how to speed up and scale up this transition to closed loop synthetic textile recycling under the EU Sustainable and Circular Textiles Strategy. In this Cambridge Policy Boot Camp we ask:

Where, in the EU fashion system, are the most effective intervention points to leverage the transition towards sourcing fully closed loop synthetic fibres by 2030, what are these interventions, and how will the transition costs be met?

☐ The Research

The Cambridge Policy Boot Camp (CPBC) is an innovative, agile participatory research methodology that combines engineering, military and medical training and systems thinking with theories from multiple social science disciplines to accelerate the process of creating effective policies to address complex systemic problems. This is achieved

by accelerating collaboration and co-creation between multiple stakeholders to maximise the use of their collective knowledge, experience and insight into the problem. During the CPBC, participants articulate:

- Action points in the system that could be leveraged, through public policy, to unlock system transformation.
- 2. The 'untapped assets' that is, resources available to support policy implementation at these pressure points.
- The unintended consequences of identified policies - to identify sources of policy failure, and therefore how to avoid failure.

Thirty-five participants for the CPBC were selected from brands, fibre and fabric manufacturers, international textile sector organisations, EU and UK recycling organisations, recycling technology entrepreneurs, fashion/textile academics, waste consultants, finance experts and philanthropists. The workshop, held online, allowed for contributions from people in 10 different countries.

Box 1. Who attended the Cambridge Policy Boot Camp?

Total number: 35

Who attended?

- Brands
- Fibre and Fabric Manufacturers
- International textile sector organisations
- EU and UK recycling organisations
- Recycling technology entrepreneurs
- Fashion/Textile academics
- Waste consultants
- Finance experts
- Philanthropists

In preparation for the 4 hour CPBC™, a Challenge Note was provided to participants one week in advance, as both a background briefing and to highlight a range of potential opportunities and challenges facing the textile sector - from an institutional point of view - in moving towards closed loop synthetic textile recycling. The Challenge Note articulated the challenges facing the sector in its transition and also the opportunities it has to drive this transition forward (Box 2).

Box 2: Challenges and Opportunities

The Challenge Note identified a range of challenges facing the textile sector, including:

- A poorly developed textile waste trading market - with the exception of trade in textile second hand clothing to non-EU countries (and some EU countries).
- Need for a process to develop industry consensus around key technical issues required for 'scaling up'.
- Development of 'investment worthy' recycling infrastructure projects. Investment potential is estimated to be Euro 6-7billion by 2030 (McKinsey and Company, 2022)
- Relevant regulation needs to be coherent across policies and consistently interpreted between countries and authorities.

On the other hand, there are also substantial opportunities for the sector. These were identified in the Challenge Note as:

- A consumer culture that is now actively preferring clothing with sustainability features (such as price, accessibility and access to information).
- A finance sector that is actively investing in fashion sustainability projects.
- A political environment that is conducive to systems change – and actively seeking to engage the textiles sector in consultations. In addition there are now several active industry associations that are engaging with the political process.
- Multiple industry initiatives and EU-funded research projects that generate and share technical, business and operational knowledge for companies undergoing their own transformation. There are also several international platforms in the industry to build collaborative projects across international supply chains (e.g. the United National Environment Programs (UNEP) Sustainable and Circular Textiles program and the UNFCCC Fashion for Climate Action).

During the CPBC[™], participants undertake three tasks. First, is the identification of 'untapped assets' that could be used as a resource to support the transition of the textiles sector towards closed loop textile recycling. An 'untapped asset' refers to an undiscovered or unused resource, or one whose value for the particular policy objective is not recognised. Due to this, there is an under (or no) investment in the resource nor any institutional frameworks to utilise it for the particular purpose under consideration. For example, the EU textiles sector is becoming of increasing interest to impact investors² but, as

²For example H&M Group issue its first SLB for

yet, this interest has been directed towards investment in recycling infrastructure or technology.

Conventional financial thinking focuses on the limited resources available to support the sector in transitioning towards closed loop textile recycling. This research flips this on its head to consider what assets the EU textile sector already has that could be used to support its sustainability transition. Research participants identified a rich list of untapped assets available to the EU (and UK) textiles sector (see below).

The second task for participants was to identify how to combine these untapped assets into specific policy concepts for the transition towards closed loop textiles recycling. These form the start of the policy articulation diagrams presented below.

The third task was to understand potential causes of policy failure. Policy makers tend to focus on what is needed to make a policy work - and forget to consider what could undermine its success. Understanding these sources of failure can help refine a policy or identify where additional policy interventions are needed to ameliorate problems. Workshop participants explored sources of policy failure in their policy concepts by considering 1) what would cause the policy to fail completely? (deal breaker), 2) what would slow down implementation? (bottleneck) and 3) what may come along to surprise you? (blindspot).

Finally, the Cambridge research team undertook a meta-analysis of all the workshop materials, background research, expert views and academic literature to identify key policy concepts that could answer the research question. Each policy concept was developed into a visual representation of the policy system identifying the policy beneficiaries (ultimate and intermediate), the untapped

€500m in February 2021, while Chanel issued \$700m green bond tied to goals on energy and emissions in 2020 (Nuygen, 2022).

assets that provide the resources for the policy, the policy levers (tools) required to implement the policy and the stakeholders that need to be incorporated into decision making (see results below).

Box 3. The EU Textile's Sector Untapped Assets for Transitioning Towards Closed Loop Synthetic Fibre Recycling

Political and Governance Assets

- EU Circular Economy finance and advisory progams
- Clear policy objectives + legal framework
- Political Support at the EU level
- Governments of production countries

Global Value Chain Assets

- Good international relationships across GVC
- Empty shipping containers returning to Asia
- High capacity to upgrade skills in supply chain
- Large volume of textile waste
- Skilled manual recycling workers
- Technology and Research Assets
- Existing + developing recycling technology
- Increasing automation
- Improvements in data availability
- Existing circular textile research projects/pilots
- Expertise + technology + technical knowledge

Sector Cultural Assets

- Willingness to change across the sector
- Creativity + Problem Solving Culture
- Collaborative mechanisms within sector (e.g. industry bodies)

Finance Assets

- Brand Purchasing Power
- ESG investment community interest

What are we trying to do?

The textiles sector needs to

- 1. Convert ideas into new operating rules
- 2. Change interactions with other sectors
- 3. New rules binding framework
- 4. Improve skills and techniques for resourcing
- 5. Reduce negative feedbacks



Image: Screenshot of Lightning Talks via Zoom to inspire small group discussion

☐ The Solutions

The textile sector has developed an extensive range of technical and operational 'know-how' for transitioning to sustainability. Where there are gaps in technical knowledge, the EU is investing heavily in research and development.³ This is an important and positive message.

The key challenge is to create the mechanisms to institutionalise this new knowledge technology and operational practices in order to scale up their impact and consolidate them as systemic behaviour and operational norms within the sector.

Using the CPBC™ methodologies, industry stakeholders, policy makers and researchers generated, and refined, 5 specific policy concepts that, if taken

forward, could drive this 'institutionalisation' process. For each policy concept the following elements were identified: key implementation strategies, the untapped assets that are activated through the strategy, mechanisms for implementation or creating public visibility around the strategy, key stakeholders and a specific stakeholder that could provide political support to the implementing agency.

Each group generated their own set of policy concepts for effective implementation of the EU Strategy. A detailed meta analysis of this material policy, an institutional interpretation was developed for the concepts and converted into a visualisation using a 'bubble diagram' (see below) alongside a narrative explaining the policy concept. Instructions for how to read each diagram are as below.



³ See for example the 19 EU funded textile research projects that are part of the <u>Ecosystex community of practice</u>.

☐ How to Read the Policy ArticulationDiagrams

The colour coded dots in the 'Policy Articulation Diagrams' are described in Table 1. Each diagram starts with the ultimate beneficiary – that is, the organisation with the mandate and resources to take forward the policy proposal (the mid-blue bubble). In this case, the ultimate beneficiary is the DG Environment of the European Commission.

From this point, read the diagrams in the following order:

- 1. The DARK BLUE bubble what is the overall policy concept or policy objective that is being developed?
- 2. The WHITE BUBBLES what untapped assets are available in the system that could be used to provide resources for policy implementation?
- 3. The LIGHT GREEN bubble What strategies could be developed to activate these untapped assets for the purposes of implementing the policy objective?

- 4. The PURPLE Bubble what implementation pathways or communication strategies are needed to roll out the strategy and create visibility in the community?
- The PINK BUBBLE what other institution may benefit from the roll of the strategy? Who will be the key ally for the ultimate beneficiary in pushing this policy objectives and its strategies - forward.
- 6. The ORANGE BUBBLE which stakeholders have resources or mandate needed to design and implement the strategies? That is, which stakeholders need a seat at the table to co-design the policy and implementation strategies in detail? Note some of these stakeholder bubbles are white indicating that they are a 'new' relationship (i.e. an untapped asset) for the ultimate beneficiary in the context of implementing the policy objective.

Table 1: How to read the policy articulation diagrams

Legend	Legend	Explanation diagrams
	Description	
	Policy System Articulation	Description of the overall policy concept.
•	System Level Entities	Stakeholders in the system with the power to collaborate with the ultimate beneficiary to unlock the value in an untapped asset
•	System Level Actions/ Strategies	Actions, plans and programs that activate the untapped assets available for the purpose of implementing the policy concept.
•	Untapped System Assets	Assets that already exist and could be used, in a system level strategy, to meet the policy objectives
	Ultimate Beneficiary	The stakeholder for whom the policy concept is designed and implemented. The outcome of the policy is for the ultimate beneficiary to have a strong(er) mandate and resources over time to deliver the policy objectives.
•	Intermediate Beneficiary	A stakeholder who also benefits from a stronger mandate or access to resources through asset activation. Partners with the ultimate beneficiary to drive the concept through the political process.
•	System Levers	Implementation or communication pathways that amplifies the impact of the policy.
→	Interconnect ed Entities	Links system assets and entities with the specific strategies that deploy them.
>	Feedback	Indicates the feedback loops of resources, information and power between the policy, strategies, intermediate and ultimate beneficiary. Following the feedback loops creates the 'policy story'.

Outcome 1: Circular Textiles Market Authority

This policy concept is about establishing the institutional infrastructure to standardise, build out and develop operational rules governing the trading of textile waste, and recycling textile waste at the scale required across global value chains.

This policy is implemented through the establishment of a 'Circular Textiles Market Authority' within the European Commission. The mandate of the Market Authority is to:

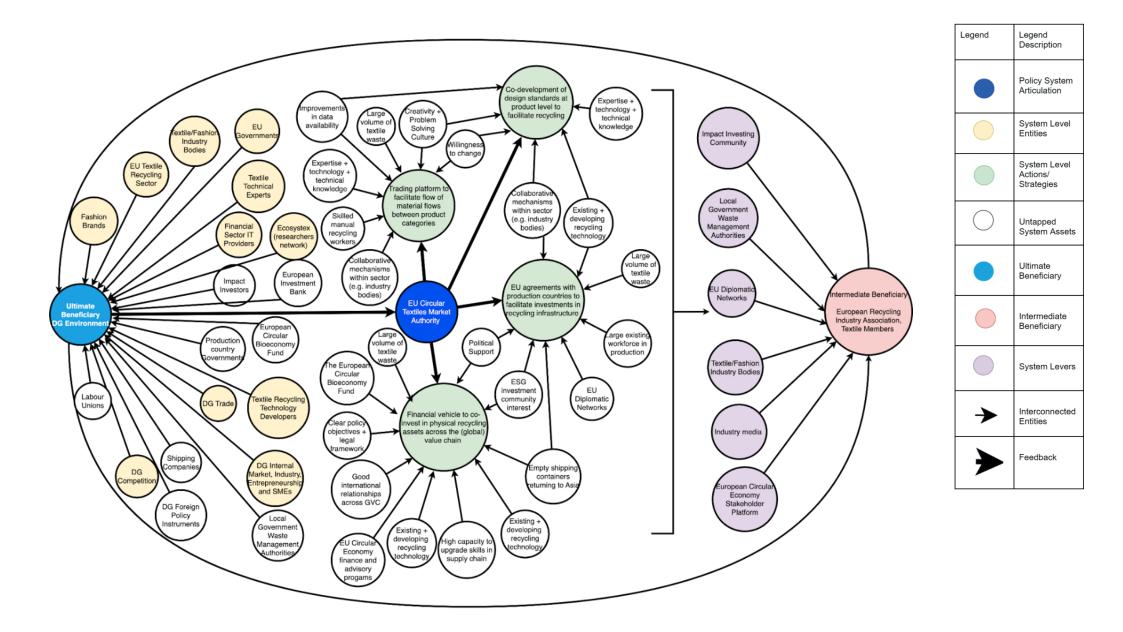
- Create a centralised trading platform for all textile waste collected and traded within the EU for the purposes of recycling.
- Co-design, with industry, the trading and product standards required to maximise the quantity of waste textiles available for recycling at the end of life.
- Establish a public/private co-investment facility to identify and invest in strategic recycling infrastructure within Europe and throughout relevant global value chains.
- Support DG Foreign Policy Instruments to negotiate agreements with governments of production countries to facilitate public/private investments in recycling infrastructure and trade.

This mandate is designed to significantly grow the textile recycling sector within the EU, and in major producer countries which supply to the EU. As such, an important political ally for DG Environment is the European Recycling Industry Association - Textile Members.

This strategy is rolled out through partnerships with the impact investing community in Europe, local waste management authorities, textile/fashion industry bodies, DG Trade, EU Governments and DG Foreign Policy Instruments. Visibility is generated through the use of targeted industry media, and the European Circular Economy Stakeholder Forum. Seed funding could be explored with the European Circular Bioeconomy Fund and the European Investment Bank.

- How to alter the current Euro-centric focus of the Sustainable and Circular Textiles Strategy to incorporate actions across the global value chain where required.
- Consider the size of infrastructure investment in light of long term ambitions for recycling so that supply and demand are roughly equated and 'orphaned' investments are not created.
- Put in place additional regulations or programs to address the environmental impacts of recycling
 e.g. additional GHG emissions created from transport or water emissions from cleaning textiles.
- Ensuring that the labour force involved in textile collection and recycling in the EU, and across the value chain, meet minimum acceptable labour standards.

CPBC[™] Outcome 1: Circular Textiles Market Authority



Outcome 2: Create Blended Finance Mechanism

This policy concept is about establishing a blended finance mechanism - such as a public/private partnership or blend of grant, investment and development funding - to pool finance, and risk, associated with investment in textile recycling infrastructure.

This policy is implemented through the European Commission developing a blended finance facility to work across Directorates to deliver the following mandates:

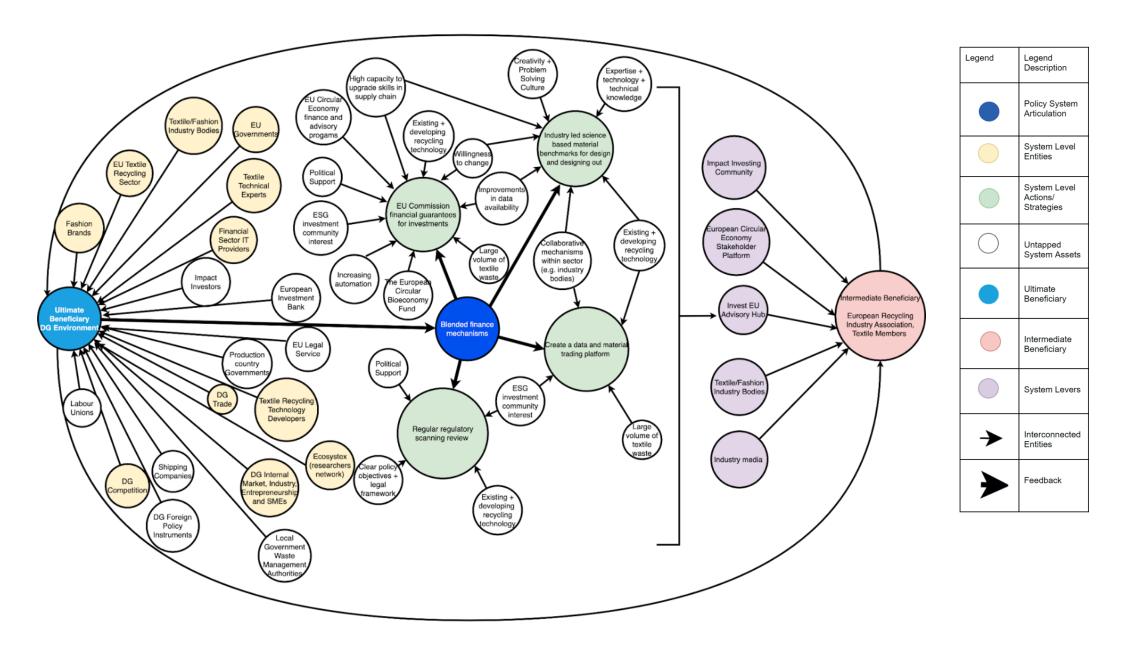
- Create a platform for co-creating investment projects in textile recycling using blended finance mechanisms
- Develop EU Commission financial guarantees for investments that are developed through the blended finance mechanism
- Create a data and material trading platform to transparently facilitate trades of waste textiles and provide market data on the scope, scale and prices of trade.
- Co-design, with industry, science based material benchmarks for fibre and fabric standards to facilitate recycling.
- Building on the existing work of the European Commission (2021) Undertake a regular review
 across the EU, and at national and international levels, to ensure that all rules and regulations are
 consistent, coherent and supportive of textile recycling.

This mandate is designed to develop strategic infrastructure investments that underpin recycling activity across the EU textile system and to put in place supplementary policies and strategies to ensure efficient use of this infrastructure.

This strategy is rolled out through partnerships with the impact investing community in Europe, Invest EU Advisory Hub, textile/fashion industry bodies, DG Trade, EU Governments and European Investment Bank. Visibility is generated through the use of targeted industry media, and the European Circular Economy Stakeholder Forum. Seed funding could be explored with the European Circular Bioeconomy Fund and the European Investment Bank.

- How to ensure that consistency, coherency is achieved across different types of regulatory regimes that may impact on textiles recycling.
- Strategies that ensure there are sufficient numbers of skilled workers and a pipeline of investable projects available.
- Strategies to address black market trade of textile waste

CPBC™ Outcome 2: Create Blended Finance Mechanism



Outcome 3: Recycled Textiles Technology Agency

This policy concept is about ensuring there are robust, transparent and up to date assessments of recycling technology, and data, to support investment.

This policy is implemented through the establishment of a 'Recycled Textiles Technology Agency' within the European Commission. The mandate of the Agency is to:

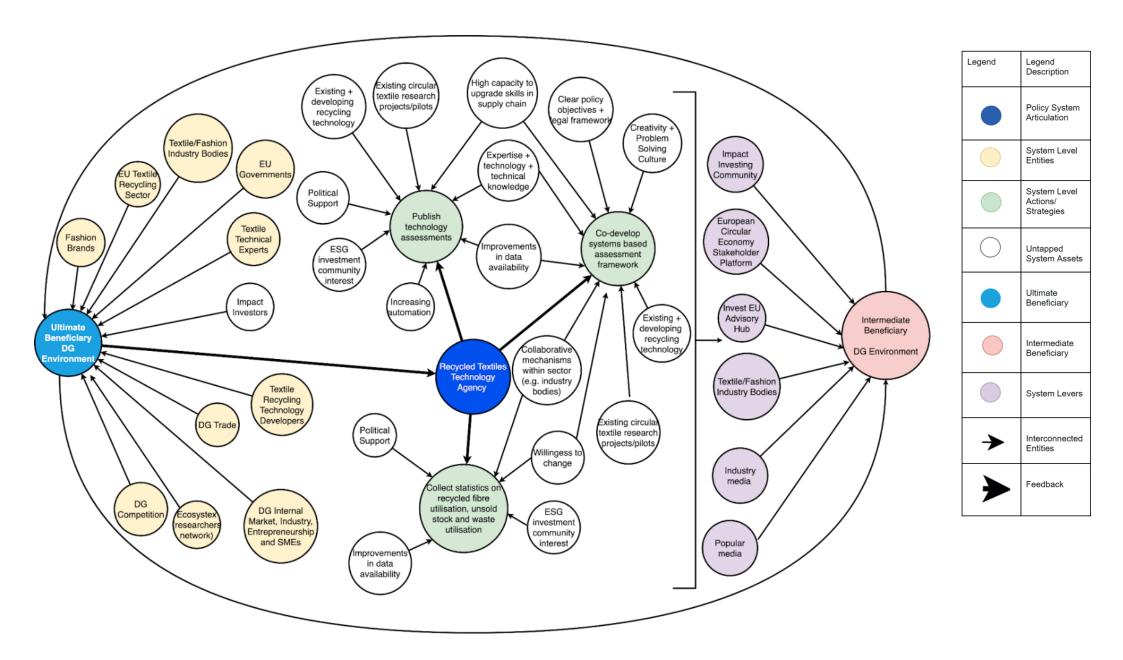
- Co-develop and maintain with industry and researchers a systems based assessment framework for assessing technologies. This framework would bring together a 'systems based' perspective on technology use and development with existing technology readiness levels framework developed by the EU.
- Public technology assessments of existing and newly developed textile recycling technologies
 using the new framework.
- Collect statistics and other relevant data on recycled fibre collection, processing, use, unsold stock and waste utilisation.

This mandate is designed to significantly grow the textile recycling sector within the EU, and in major producer countries which supply to the EU through reducing investment and trading risks via the provision of transparent data. As such, an important political ally for DG Environment is the European Recycling Industry Association - Textile Members.

This strategy is rolled out through partnerships with the impact investing community in Europe, textile/fashion industry bodies, DG Trade, EU Governments, Invest EU Advisory Hub. Visibility is generated through the use of targeted industry media, popular media coverage and the European Circular Economy Stakeholder Forum.

- How to ensure there is accurate labelling (and no pirate labelling) to facilitate recycling.
- How to develop data collection systems, and to create appropriate regulation that ensures data is shared, while still maintaining commercial confidentiality.
- Put in place additional regulations or programs to address the environmental impacts of recycling
 e.g. additional GHG emissions created from transport or water emissions from cleaning textiles.

CPBC™ Outcome 3: EU Recycled Textiles Technology Agency



Outcome 4: Joined Up Policy Making in a Global Value Chain

This policy concept is about ensuring the system of EU rules and regulations around the EU Textiles strategy drives demand for recycled textile figures and works coherently across the policy system.

This policy is implemented through establishing a number of mandates for specific Directorate-Generals within the European Commission:

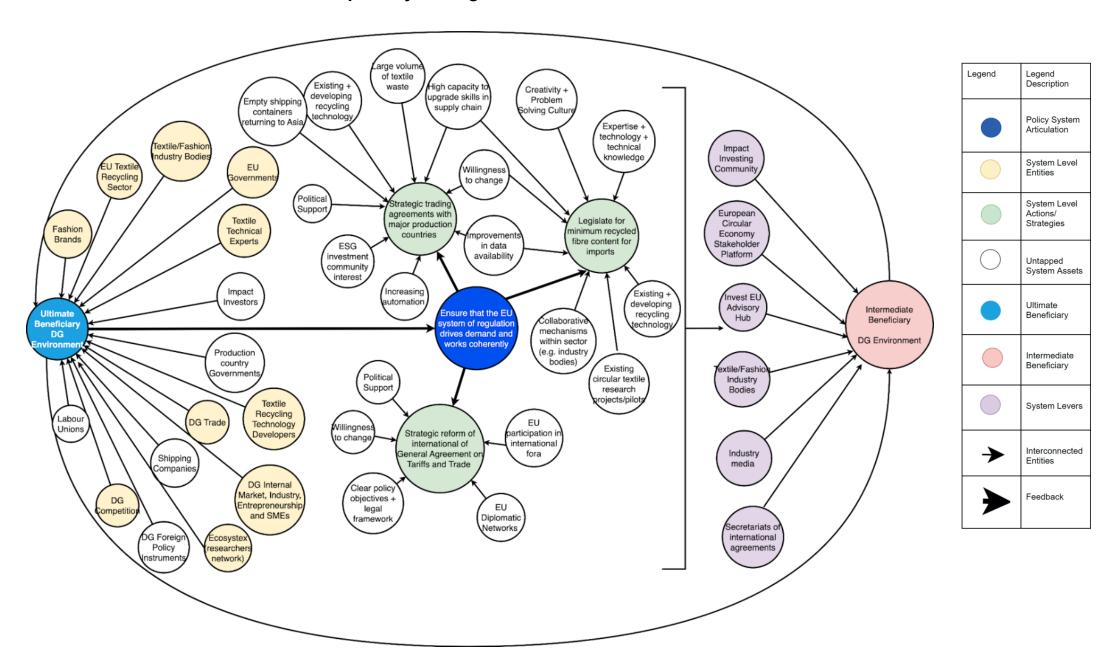
- DG Environment to drive the legislation for minimum recycled fibre content for imports of all textile classes. This minimum content standard should be developed at the product level to capture the variety of textile products sold in the EU.
- DG Trade to pursue and create strategic trading agreements with major production countries to facilitate the trading of recycled fibres from the EU, to production and back to the EU.
- DG Trade to pursue reform of trading rules under the General Agreement on Tariffs and Trade in order to facilitate the trading of textile waste (e.g. Customs Code HS 6309)

This mandate is designed to ensure that the institutional rules and regulations are in place to drive demand for recycled fibres and to allow for cost effective trading of textile waste across international borders. This strategy uses EU's trading relationships to facilitate the implementation of the Sustainable and Circular Textiles Strategy and, as such, meets the mandate of DG Trade. As such, an important political ally for DG Environment for this strategy is DG Trade who are identified as intermediate beneficiaries in this policy concept.

This strategy is rolled out through partnerships with the impact investing community in Europe, textile/fashion industry bodies, Invest EU Advisory Hub and the Secretariat of the World Trade Organisation. Visibility is generated through the use of targeted industry media and the European Circular Economy Stakeholder Forum.

- How to maintain focus on textile recycling, and the additional transition costs, in the face of other
 urgent priorities (e.g. war in Ukraine, cost of living crisis).
- Developing strategies to ensure a pipe line of investable projects for textile recycling is developed.
- Develop strategies to 'right size' the investment in recycling technologies to maintain the flow of supply at the right quality and size to equate with demand over the long term.
- Address the impact of recycled fibre prices on virgin fibre markets

CPBC[™] Outcome 4: Joined Up Policy Making in a Global Value Chain



Outcome 5: EU Financial support for global textile recycling accelerator

This policy concept is about providing EU financial support for industry led global textile recycling accelerator.

Currently, the EU has invested heavily in EU focussed sustainable textile accelerator programs - for example through the TREX project the EU is created a harmonised blue print for close loop sorting and recycling of household textile waste.. This policy concept is about expanding the scope of these programs to specifically target textile recycling and to support initiatives across EU linked global value chains. This policy will be achieved establishing a mandate for DG Environment to:

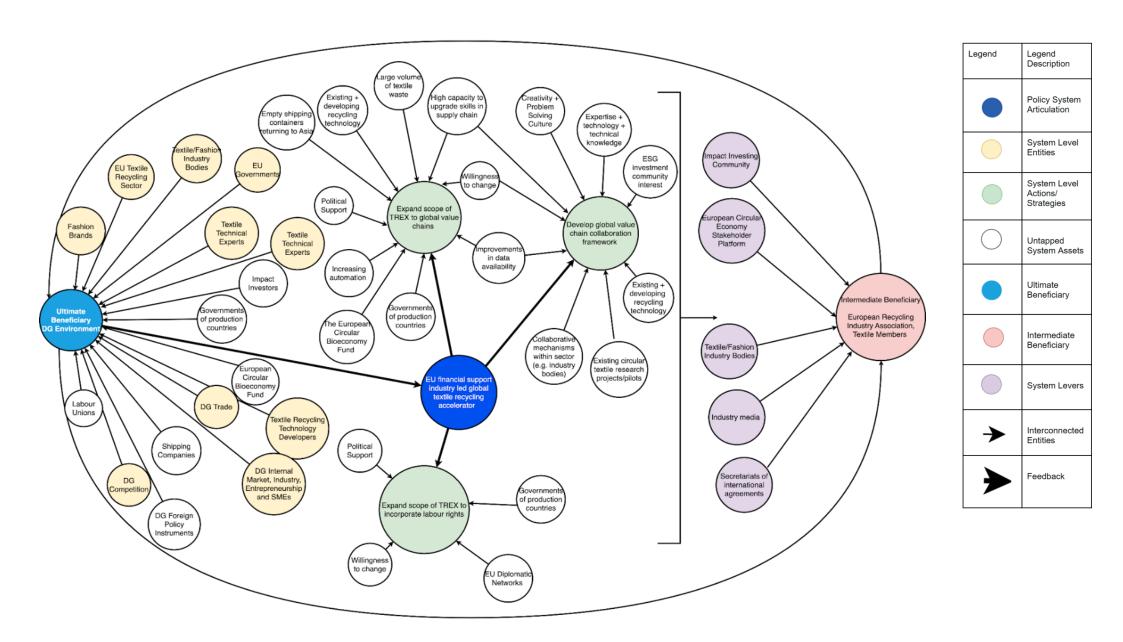
- Develop a global value chain collaboration framework to guide future investments in recycling accelerator projects. This will ensure that future projects are aligned with the needs of the EU Sustainable and Circular Textiles Strategy.
- Expand the scope of TREX (or commission similar project) to incorporate accelerator projects across the global value chain – focussing on major production countries.
- Expand the scope of TREX (or commission similar project) to incorporate analysis of the impact of textile recycling on labour conditions and wages across the global value chain.

This mandate is designed to ensure that DG Environment has the mandate and resources to scale up existing research projects to become programs that deliver transitions at scale right across the global value chains.

This strategy is rolled out through partnerships with the impact investing community in Europe, textile/fashion industry bodies, Invest EU Advisory Hub and the Secretariat of the World Trade Organisation. Visibility is generated through the use of targeted industry media and the European Circular Economy Stakeholder Forum.

- How to maintain focus on textile recycling, and the additional transition costs, in the face of other urgent priorities (e.g. war in Ukraine, cost of living crisis).
- Developing strategies to generate consumer acceptance of higher prices, where required.
- Ensuring that investment projects selected by the accelerator include collection and sorting infrastructure and not just recycling technologies. Managing investment risks.
- Outreach mechanism to ensure that a sufficient number and quality of projects across the global value chain are sourced by the accelerator.

CPBC™ Outcome 5: EU Financial support for global textile recycling accelerator



☐ Delegate comments:

"Very thought provoking" Alan Wheeler - Textile Recycling Association

Laila Petrie - Future Earth Lab "This workshop has been very

productive and can be a huge asset for

the industry"

"Great research outputs" Dr Jason Hu - Best Pacific Company

Dr Kate Riley, Textile Exchange "Looking forward to staying in touch

and hearing about next steps"

"That's an impressive outcome from a Cherie Nelson, Urban Outfitters relatively short session"

Professor Kate Goldsworthy, Univ. of the "Thank you so much for an inspiring

Arts, London process and outcomes!"

References

European Commission. Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions EU Strategy for Sustainable and Circular Textiles, COM(2022) 141 final § (2022). https://environment.ec.europa.eu/publications/textiles-strategy en

Geels, Frank W, Benjamin K Sovacool, Tim Schwanen, and Steve Sorrell. "Sociotechnical Transitions for Deep Decarbonization." *Science* 357, no. 6357 (September 22, 2017): 1242–44. https://doi.org/10.1126/science.aao3760.

Köhler, Andreas, David Watson, Steffen Trzepacz, Clara Löw, Ran Liu, Jennifer Danneck, Antonios Konstantas, Shane Donatello, and Giorgia Faraca. Circular Economy Perspectives in the EU Textile Sector: Final Report. Luxembourg: Publications Office of the European Union, 2021.

McKinsey and Company. "Scaling Textile Recycling in Europe–Turning Waste into Value." McKinsey and Company, 2022. https://www.mckinsey.com/industries/retail/our-insights/scaling-textile-recycling-in-europe-turning-waste-into-value

Nguyen, Amy. "Sustainability-Linked Finance Is Fashion's Latest Trend, but Will It Work?" Raconteur, October 5, 2022. https://www.raconteur.net/finance/investing/sustainability-linked-finance-is-fashions-latest-trend-but-will-it-work/.

(c) 2023 Centre for Resilience and Sustainable Development (CRSD), all rights reserved

Disclaimer

The authors of this report have made every attempt to ensure that the information contained in this case study is accurate at the time of completion. This has included working in close collaboration with stakeholders. However, any errors that remain are with the authors.

Please cite this report as follows:

Habib, N. M. and Parris, H. (2023) Sustainability transition in the textile sector: The case of closed loop textile recycling in the EU. Cambridge: CRSD Working Series.

For further information please contact:

Dr Nazia Mintz-Habib
Head of Research Centre
Centre for Resilience and Sustainable Development (CRSD) Department of Land Economy
University of Cambridge nsh29@cam.ac.uk https://www.crsd.landecon.cam.ac.uk