



Towards the Circular Economy in **Ukraine**

TEXTILE ARTICLES





OVERVIEW

The textile articles value chain is highly dependent on consumer choice, lifestyle and fashion. Much of the Ukraine market is imported, but there are significant areas of local production with local materials. There is great potential for a textile and clothing production following circular economy principles on both supply and demand-side.

The textile articles KPVC includes a huge range of processes and products: synthetic and natural materials, textile manufacture and finishing, garment manufacture, fashion and general clothing, with many related items such as shoes, hats or protective gear.

Which are the opportunities?

On the supply side, there are challenges with a deregulated international textile and clothing trade: typically, short-life products, made by low-cost labour, with high environmental impacts. Any coordination is lacking for thousands of product and material types.

On the demand side, fashion and lifestyle are the key drivers of consumption, and new clothing is a key indicator of prosperity. New online retail platforms then push the value chain further towards high-volume and high-waste models.

For progress towards circular economy for textile articles, there are many barriers: lack of knowledge on circular products: lack of human resources and skills: low priority for government policy, and a general lack of data and evidence.

However, there is a rich history of Ukrainian textile production, alongside clusters of advanced textile technology. The transition from 'product to service' can be seen with 'pre-loved' or leasing platforms, pointing towards a high-value low-waste circular economy approach for textile articles.



CIRCULARITY PATHWAYS

These pathways show a broad combination of actions from all stakeholders, starting from now and looking towards a ‘future horizon’ of 15-25 years.



Clothing for a lifetime pathway

As textile and clothing production is driven by lifestyles, fashion and the current consumer ‘throw-away’ model, the demand side is the first priority – on the principle of ‘clothing quality over quantity’. Following EU trends, clothing retail can promote consumer awareness with product

transparency, along with new standards ‘design for disassembly’ and recycling for zero-waste textiles. Supporting this, integrated logistics systems for collection and separation, will encourage new bio-materials and circular processes, for reconstitution or recycling.



The new look pathway

Working on the supply side, this pathway starts with opportunities for small enterprises in the creative sectors of local economies. Full industrial digitalization with robotics, AI and 3D printing, can transform bulk production towards full customization. New textiles both synthetic and natural, can be engineered for extended product life, low impact materials, and design for dis-assembly and recycling.

A full ‘digital passport’ system, for both exported and imported products, can enable full EU-compatible life cycle and carbon accounting standards. The textile and clothing sector can then promote ‘extended producer responsibility’ and ‘take-back’ policies for producers and retailers, as a key part of the national industrial development strategy.





Clothing in the community pathway

With a focus on local enterprises and community livelihoods, this pathway starts from the long history of UA textile production, with local craft materials and fabrics such as hemp, linen and wool. Local 'repair cafés' and clothing exchange platforms can help in the cultural shift

btowards higher-value longer-life clothing, based on 'extended producer responsibility'. 'Circular fashion' events can promote skills training in schools and colleges, and new enterprises in the community.



When? - 3 horizons for textile articles

The pathways above can be mapped with the 3-horizon perspective:



Summary of three horizons

CLOTHING & TEXTILES	Horizon 1: 1-5 years	Horizon 2: 5-10 years	Horizon 3: 10-25 years
Business	Promote circular models in creative sector: build evidence base	Capacity building for EU standards: logistics for re-use & recycling	Full industrial symbiosis for material recovery: digital passports for product transparency
Governance	Sector policies for product standards & EU alignment	National strategy promotes high value textiles and clothing sector	Full transformation strategy: standards, regulation, tax, subsidies, behavior change
Social	Promote 'pre-loved' fashion with creative textile projects	Education & health services build capacity for re-use & recycling	Local economy & livelihood principles for circular economy
Technology	Digital innovation clusters in robotics, AI, synthetics, bio-materials	Full range of materials & processes for circular economy	Advanced customized production, 3D manufacture, design for dis-assembly
Industry	Coordinate resource efficient & cleaner production standards	Full digitalization & modernization of national production	'Industry 5.0' principles for integrated low-impact high-value production
Infrastructure	Set up online platforms for circular logistics	Urban hubs for collection, separation, re-use & recycling	Industrial hubs for exchange & symbiosis of recycled and recovered materials



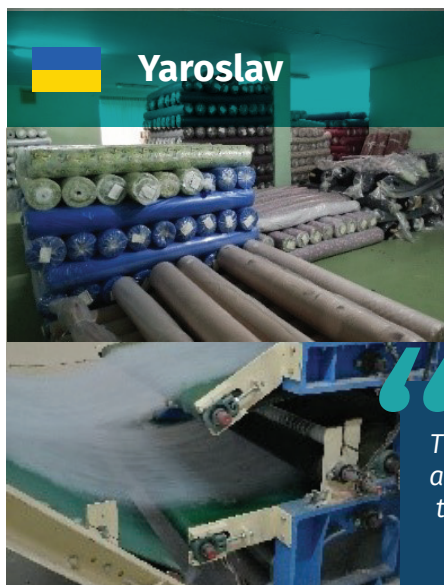
CIRCULARITY IN ACTION

Here are some leading examples on circular economy and resource efficient enterprises.



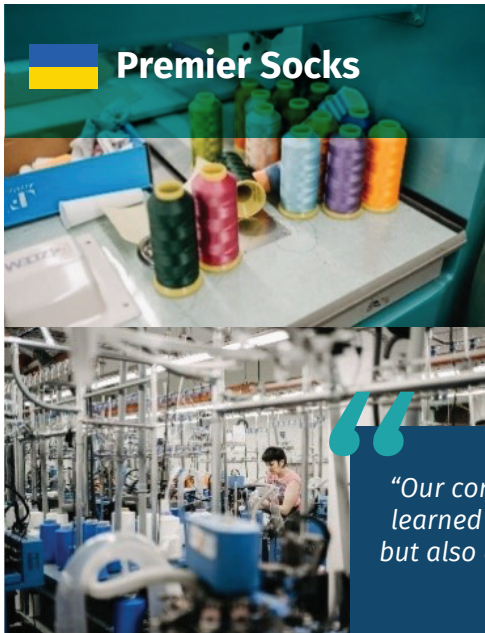
This firm provides clothing as a 'rental service'. It helps customers create a whole image, from shoes to hairstyles, so everyone can try a classic look – comfortable, beautiful and stylish, for weddings, graduations, photo shoots or business meetings. Overall this 'product as service' model points to two big ideas...

- **Smart consumption:** Renting clothes helps the planet because people do not throw away a suit only worn once or twice.
- **Smart money:** Renting is cheaper than buying and provides more variety and style choice.



This firm produces a wide range of goods – bed linen, rugs, blankets, mattresses, and kitchen textiles. Its priority is to use high-quality natural raw materials for quality output. To improve efficiency with international experience, the firm participated in the RECP program, and achieved 72% electricity savings for compressed air, and 45% improvement in boiler output.

Thanks to the RECP Demonstration Project, we learned how to monitor and analyse energy, material, and water balance in our processes. Now we plan to engage the RECP experts at the other production sites within the group
(Director of Yaroslav, PE, Mr. Oleksandr Barsuk)



Premier Socks

Premier Socks is a popular manufacturer of hosiery goods, with a range from designed socks for women, men, and children, all the way to stockings and tights. These are available around Ukraine, and while just 15% of output is for export, the company successfully covers the market needs for the majority of the EU. Major savings were found by recirculating waste heat and a new solar panel installation.

"Our company was keen on resource efficient and cleaner production. We learned about monitoring and analysing, not only at the enterprise level, but also at the point of consumption, with big electricity savings..." (Deputy Director of Premier Socks, PE, Ms. Olena Babenko).



MUD jeans

"All because - circular denims (almost) never die..." Customers from the MUD brand in the Netherlands can lease or buy their jeans, benefit from a free repair service, and return the worn items for recycling into new denim products - so this iconic piece of clothing remains in use many times over. This brand philosophy saves 78% water and 61% CO₂-eq per jean product, compared to industry standards.



UKONO

In a small shop in an old textile factory in Sumy, blankets, kombucha, toys, oil, soap, shoes, are all based on hemp fabrics and fillers. The hemp is grown locally, and every part of the eco-friendly plant is used, requiring few pesticides, and helping with soil regeneration. While reviving Ukraine's rich history of textile craftsmanship, this points towards a greener future.

TEXTILE ARTICLES CIRCULARITY, NEXT STEPS

BUSINESS AND FINANCE

The transition 'from product to service' is the key to circular business models. Forward looking businesses and investments will align with the best EU standards, set up take-back policies, digital passports, and logistics for re-use and recycling. Longer term, the textiles and clothing sector will aim towards full industrial symbiosis for circular economy.

GOVERNMENT AND POLICY

Here the transition from 'regulation to partnership' is the key to bringing together all stakeholders in textile and clothing – entrepreneurs, consumers, technology and innovation, civic society. With sector round tables for product standards and EU alignment, government can take the lead on integrated strategy for product standards, regulation, taxes, subsidies, trade rules, consumer protection, and public behaviour change.

SOCIAL & COMMUNITY

If the 'consumer is king' in the clothing sector, so 'pre-loved' fashion may be key to the circular transition. With the help of education and community projects, social behaviour then creates demand, so the supply-side can build capacity for re-use and recycling. The first priority then is job security in the transition from older high-waste industries, often the key players in regional and local economies.

TECHNOLOGY, DESIGN, INNOVATION

The transition 'from product design to system design' is key to 'C2C' ('cradle to cradle') principles for products and materials. A whole range of innovation clusters, both digital and material, in robotics, AI, IOT, synthetics and bio-materials will be needed. Basic techniques in modular design, dis-assembly, re-manufacturing and bio-recycling, can then contribute to advanced customization and 3D manufacture.

INDUSTRY & INFRASTRUCTURE

With basic standards for resource efficient and cleaner production, the textile and clothing sector can move towards full digitalization & modernization, and the 'Industry 5.0' principles for sustainable low-impact high-value production. New infrastructure is also needed, both digital logistics platforms, and physical hubs for re-use and recycling.

Overall, Ukraine at this critical moment, has huge potential for the transformation towards a more efficient, sustainable, high value circular economy.

WHAT IS A CIRCULAR ECONOMY?

UNIDO defines circular economy as an industrial economy that routes materials, parts and products back into use several times and creates more value and less waste. It is an alternative, in which value is maintained for as long as possible, products are designed to last, and the generation of waste is minimized.

This booklet is one of six publications dedicated to 'Key Product Value Chains' reviewed in the Exploratory Foresight Study: constructions, food products, electronics & ICT, textiles, plastics and packaging, and waste management.

Case studies are based on the National Circular Economy Case Studies and are available at: <http://www.recpc.org/recpc-case-studies-en/>

Examples from other countries are from the <https://circulareconomy.europa.eu/platform/en/good-practices>

For more information about the **UNIDO Green Recovery Programme for Ukraine** please visit:
<https://www.unido.org/green-recovery-vision-ukraine>

Exploratory Strategic Foresight for Circular Economy in Ukraine: Final report | <https://shorturl.at/B1707>
Circular Economy for Industrial Development in Ukraine: Baseline Study | <https://shorturl.at/ceLlu>
UNIDO Online Training on Circular Economy in Ukraine | <https://shorturl.at/qfv4S>

More about Circular Economy in Ukraine is available at the **RECP Centre** page at
<http://www.recpc.org/circular-economy/>

EU4Environment Action (2019-2024) helps the EU's Eastern Partnership countries preserve their natural capital and increase people's environmental well-being by supporting environment-related action, demonstrating and unlocking opportunities for greener growth, and setting mechanisms to better manage environmental risks and impacts.

For more details, visit: www.eu4environment.org

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