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Companies & Technologies
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Bioeconomy Lower Austria Platform

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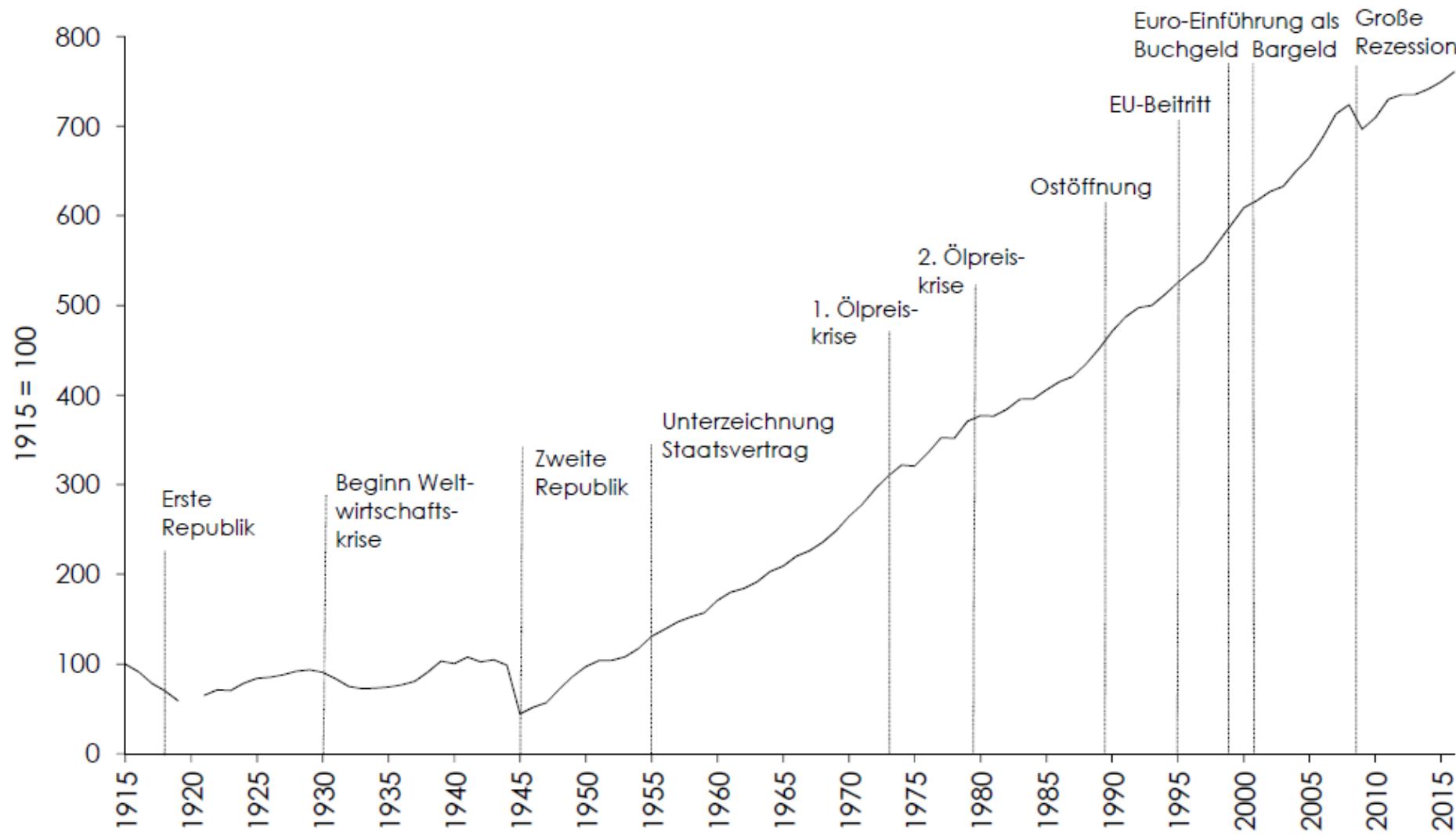
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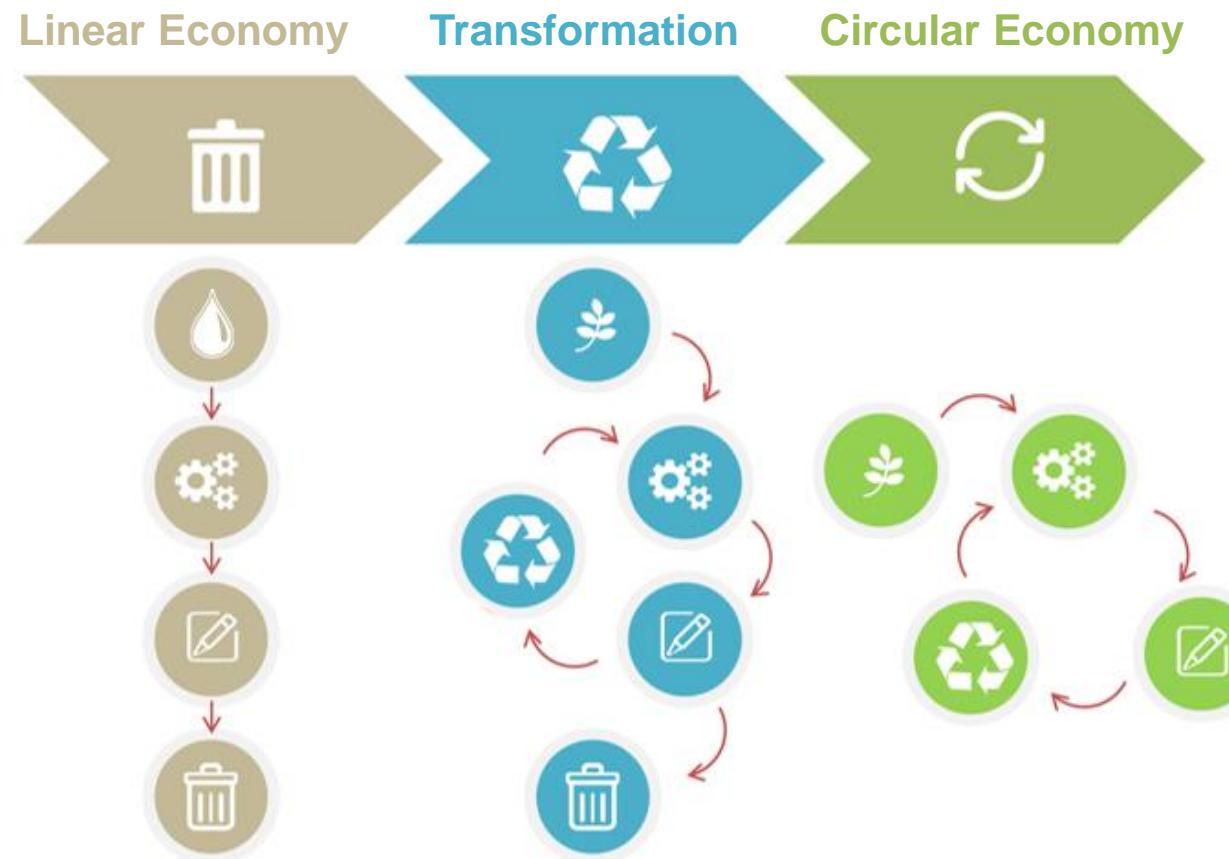
Europäische Union Investitionen in Wachstum & Beschäftigung, Österreich.

Austria's Economy 1915-2015



Q: Butschek, F., Österreichische Wirtschaftsgeschichte. Von der Antike bis zur Gegenwart, Böhlau Verlag Wien-Köln-Weimar, 2011; WDS – WIFO-Daten-System, Macrobond. 1920: keine Werte verfügbar.

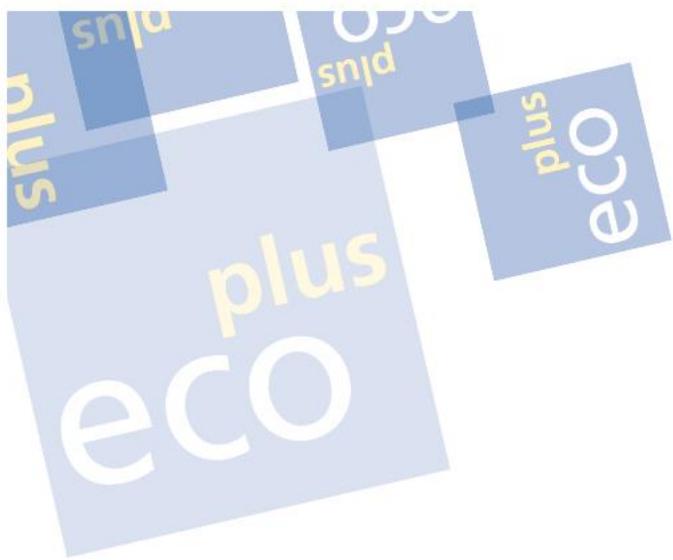
How to create value in the future?





Our strategic aims for the region





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Europäische Union Investitionen in Wachstum & Beschäftigung, Österreich.



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Road to circular economies in textiles: Status Quo in Austria

Global Fiber Congress | 2021



Europäische Union Investitionen in Wachstum & Beschäftigung. Österreich.



Initial Situation

A linear value chain means that a large proportion of textile fibres ends up in thermal recycling.



A circular economy needs to be established, in order to comply with the European Directives.

With the adaption of the Circular Economy Package in 2018, in line with the European Bioeconomy Strategy and the European Green Deal, the European community has decided to become more sustainable and reduce resource consumption.



Circular Economy Package 2018

Commitment to sustainable business and reduced resource consumption



European Green Deal

Climate-neutral economy by 2050, reduced resource requirements and ecological footprint



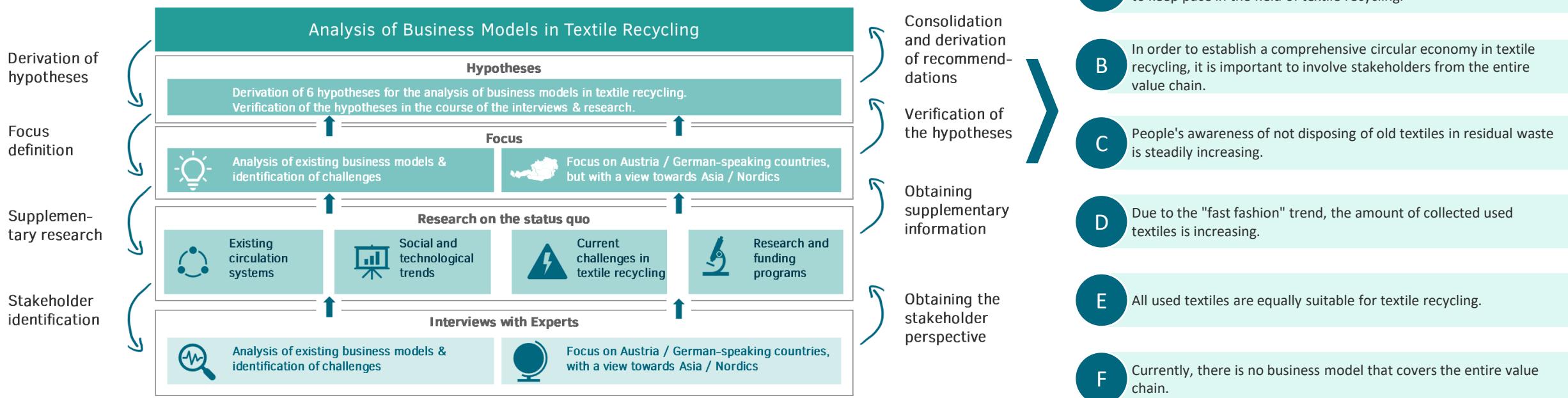
Waste Framework Directive

Increase of share for recycled textiles from 55% to 65% until 2035

Road to circular economies: Analysis of the Status Quo

The conducted study analyses existing business models in textile recycling, current challenges and gives recommendations for action to build a circular economy. The study focused on German-speaking countries, but also considered Asia and the Nordics.

Derivation of 6 hypotheses for the analysis of business models in textile recycling



Research on the Status Quo

“Many of the clothes we discard are no longer useful for anything. What cannot be resold second hand, sorting companies give to recycling companies, but so far, they only produce cleaning rags, insulating material or painter's fleece from it. Instead of really being recycled, old clothes are downcycled.”

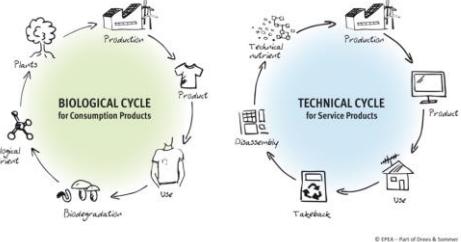
Existing forms of circular economy (selection)



Existing circular systems and their practical implementation can be helpful to guide the development of business models in textile recycling.

Cradle to Cradle

- Establishment of an endless, self-contained cycle across production, use and reuse.
- Focus on degradable, ecological and pollutant-free materials.



PET to PET

- Reduction of raw material/energy requirements during production and of the disposal effort



Textile to Textile

- Raw material recovery for new products from discarded garments and other textiles.
- Application mainly in the Nordic fashion industry.

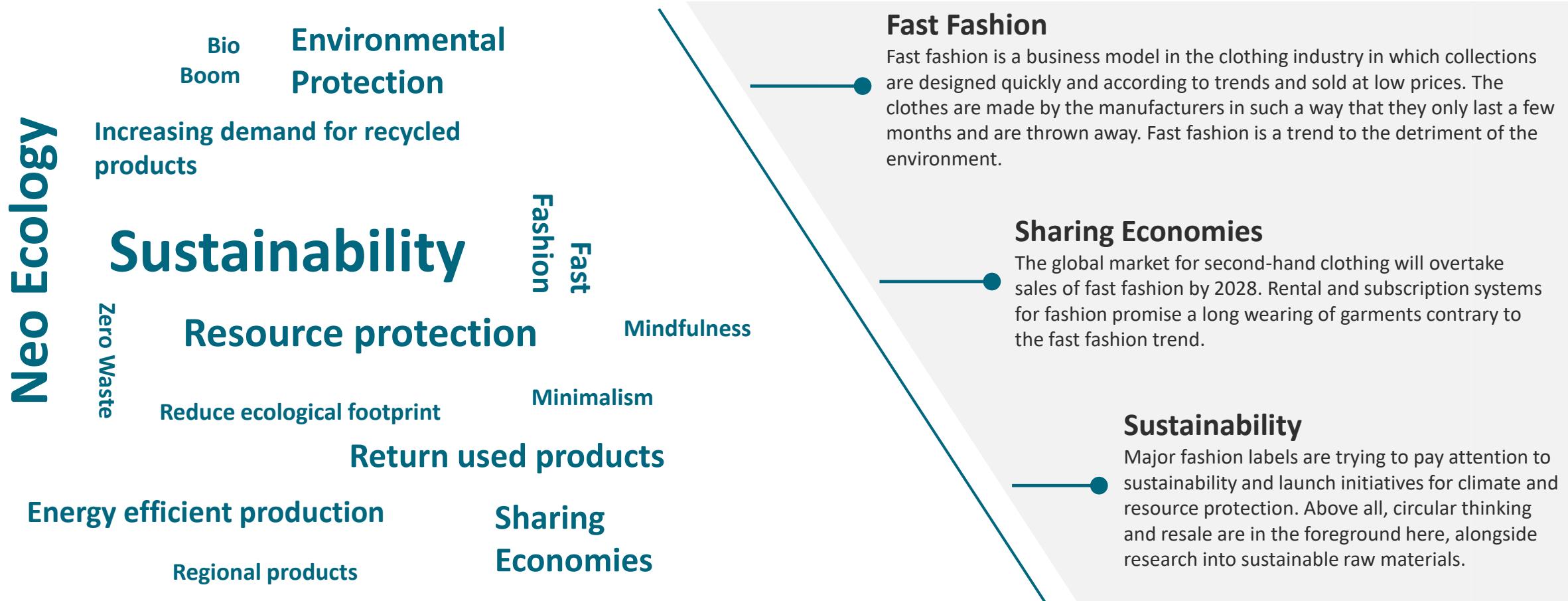


Second Hand

- Reuse of previously used but still wearable clothing through resale. Originally in the C2C environment, increasingly also by corporate actors.
- Aims to extend the life cycle of a product, reduce consumption of natural resources and delay the generation of waste.



Social trends



Technological trends



Fiber Technology:

Finnish company *Infinited Fiber* is known for turning discarded textiles back into a high-quality regenerated textile fiber, which is well-suited for circular economy.

Intelligent Label (Digital Label):

The intelligent label reveals the fiber origin, colour, material composition and other interesting parameters.

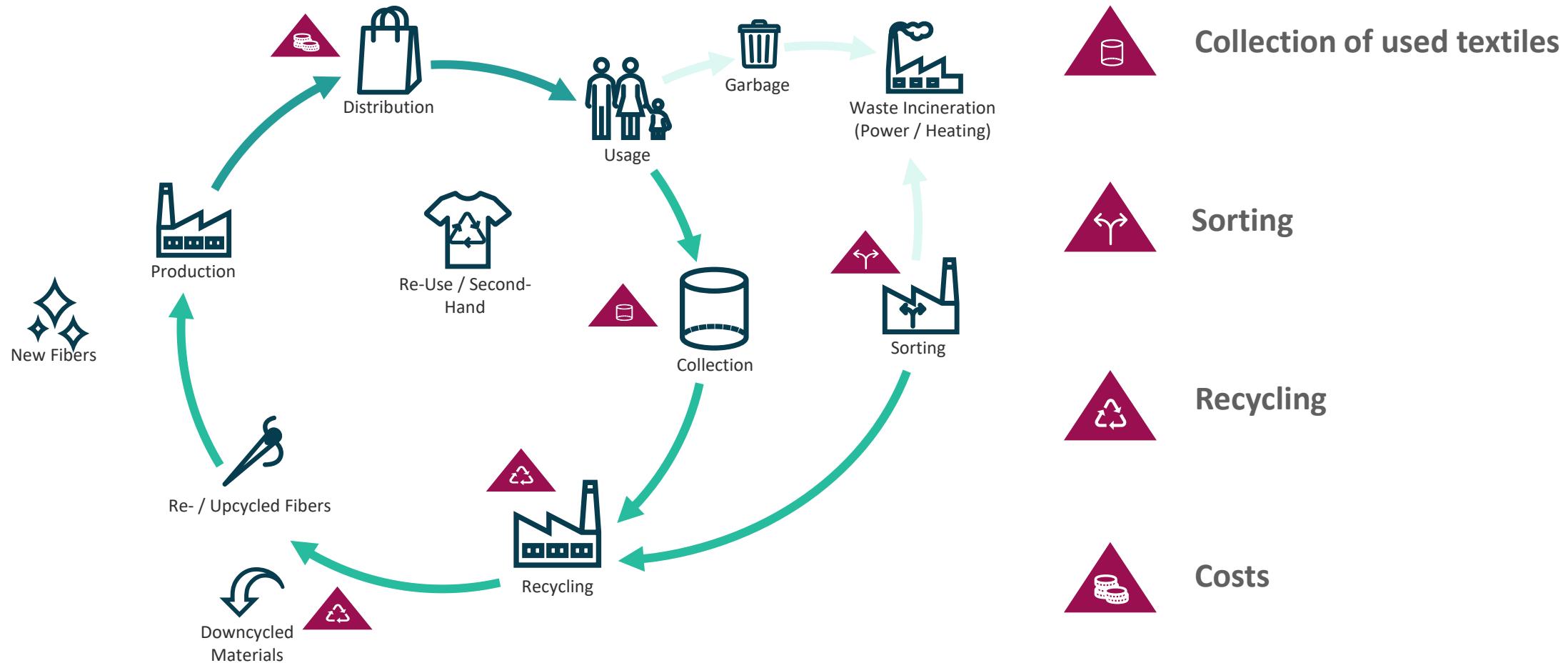
Textile Refining Plants:

Finland is opening the largest textile refining plant, for the processing of post- and pre-consumer textiles.

Intelligent collection & disposal of used clothing collection containers:

A computerized logistics system enables individual emptying based on the fill level.

Challenges in textile recycling along the value chain



Results of the Interviews

“

From my point of view, it is very important to implement a circular economy for the textile industry.

Considering the waste of resources that is simply going on at the moment. We need a solution for goods that can no longer be marketed as second-hand fashion,

Overview of the interviews conducted

15

Conducted interviews with experts from the industry

Timeframe: June - August 2021

Industries	<ul style="list-style-type: none">› Humanitarian institution› Manufacturing industry› Textile company› Politics› Recycling companies› Business associations› Point of Sale
Position of contact Persopn	<ul style="list-style-type: none">› Managing Director› Board of Directors› Member of the European Parliament› Manager› Business Director› Project Management› Quality and environmental management
Position along the value chain	<ul style="list-style-type: none">› Collector› Sorter› Recycler› Re-Use› Second Hand / Re-Sale
Regions	<ul style="list-style-type: none">› Europe: Austria, Germany, Belgium, Finland› Worldwide: Hongkong / China

Derivation of 6 hypotheses for the analysis of business models in textile recycling

- A Compared to other European countries, Austria is currently unable to keep pace in the field of textile recycling.
- B In order to establish a comprehensive circular economy in textile recycling, it is important to involve stakeholders from the entire value chain.
- C People's awareness of not disposing of old textiles in residual waste is steadily increasing.
- D Due to the "fast fashion" trend, the amount of collected used textiles is increasing.
- E All used textiles are equally suitable for textile recycling.
- F Currently, there is no business model that covers the entire value chain.

Summary of the Results

Status Quo

- › In other areas, the topic of circular economy is already established. Initiatives such as PET2PET show that a circular economy in recycling is possible and can also work if the entire value chain is included.
- › Strong-selling fashion brands are under pressure from the social trends towards sustainability, zero waste, as well as resource and climate protection to take initiatives themselves.
- › Technological trends are making it easier to collect and separate textiles. Artificial intelligence and digitalization initiatives are making it easier to build and implement a circular economy. Nevertheless, textile recycling still faces many challenges. Especially in the area of collection, sorting and recycling there are still obstacles, as well as the cost intensity along the value chain is still a major challenge.

Key Results

- › European and international comparisons show that Austria is currently unable to keep pace in the field of textile recycling and in the implementation of EU regulations. Projects in Austrian are kept on a small scale and usually do not go beyond laboratory status. Countries such as Finland or Sweden are one step ahead and have already started nationwide initiatives.
- › The entire value chain is not represented in Austria. Sorting currently takes place abroad. One reason for outsourcing is the lower labour costs in neighbouring countries. Current technological conditions, as well as the composition of the used textiles, make automated sorting difficult and one is dependent on manual work.
- › Nevertheless, there are already first approaches in Austria and some companies have started recycling initiatives. However, there is currently no business model that covers the entire value chain. Existing business models are mainly concerned with the collection and sale of used textiles, downcycling, and second hand / re-use models.

Recommendation



Based on the interview results, it becomes clear that there is currently no business model in Austria that covers the entire value chain. The development of a circular economy in textile recycling requires the involvement of stakeholders from the entire value chain. Based on these findings, recommendations for action can be made.



Recommendation for action 1 | Strategy Workshop with relevant stakeholders from the industry

Objective: Discuss potential ways to implement EU regulations with relevant stakeholders.

Next Steps:

- › Selection of relevant stakeholders from the industry
- › Organization of the workshop
- › Definition of next steps



Recommendation for action 2 | Evaluation Establishment of an Austria-wide textile recycling initiative analogous to PET2PET

Objective: Establishment of a circular economy in textile recycling

Next Steps:

- › Selection of relevant project partners
- › Creation of the political framework and evaluation of funding opportunities / subsidies
- › Conception of a business model
- › Company Building

About us



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ecoplus is the business agency of the province of Lower Austria and offers companies customized services. In addition to target-oriented regional development at our business parks and technology locations, the Lower Austrian Technopoles, we create and support innovative networks in regional areas of strength in our cluster and the new themed platforms. In doing so, we network companies and science, motivate innovation and cooperation and initiate joint product and process developments as well as research projects and qualification activities. In doing so, we act in line with Lower Austria's economic strategy to strengthen the domestic economy and increase regional value creation.

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