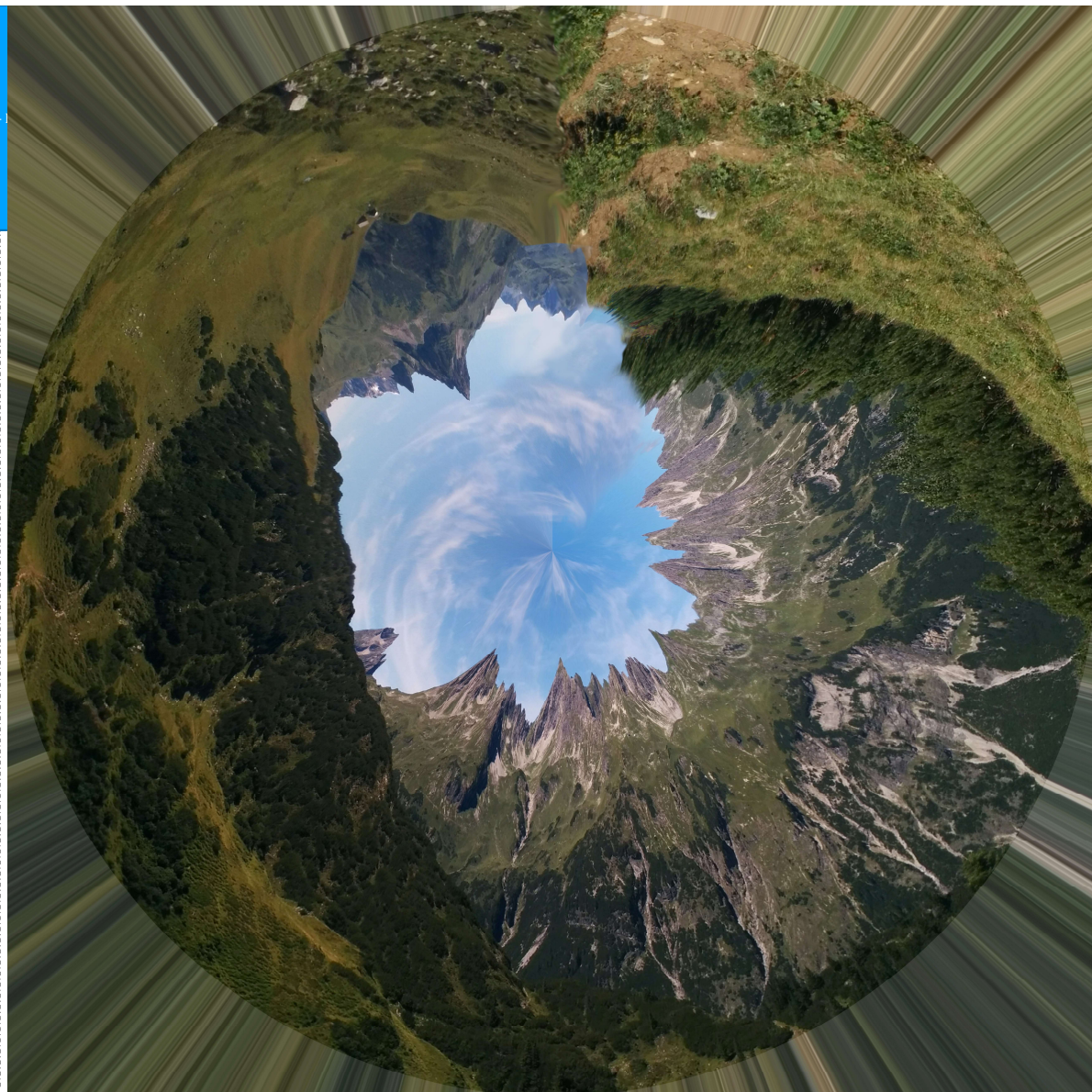


NO TEXT -

ACP 2021



ACCELERATING  
CIRCULARITY



# Accelerating Chemical & Mechanical Circularity

NO TEXT - Picture In Picture

ACP 2021



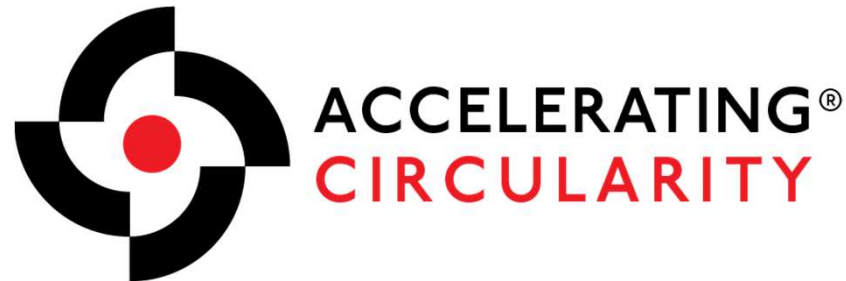
## Agenda

- Accelerating Circularity
- Circularity = Connectedness
- Knowledge/Data Requirements
- Feedstocks
- Systems
- Business case

TEXTILES ARE TOO GOOD TO WASTE



NO TEXT - Picture In Picture



ACP 2021

## **Mission**

To establish systems that will use the embedded value and resources in existing textiles for new products, reducing the millions of tons of textile waste annually going into landfills and thereby supporting the reduction of the industry's environmental impacts.

## **Theory of Change**

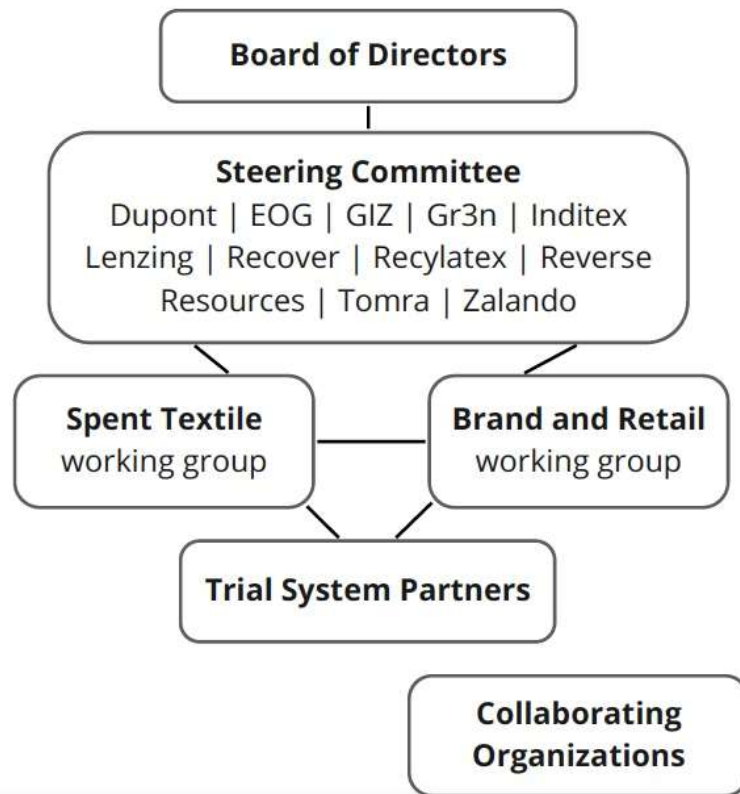
The development of knowledge on missing or under-utilized supply chain links and the identification of requirements necessary to connect those links, maps can be developed that will allow the industry to choose among a multitude of paths the right direction for their individual businesses to quickly and efficiently adopt truly circular supply chains. By outlining these roadmaps to include multiple waste streams as raw material sources through waste handlers, sorters and recycling technologies that can link to the traditional textile supply chain the use of virgin resources will be displaced and textile waste will be reduced.





# Circularity = Connections

## Organisation





# System Trial Elements

## TRIAL INPUTS

### COLLECTION TYPES

Commercial Bin  
Contract Commercial/  
Industrial  
Curbside  
Drop-off  
Event-based  
Mail-in  
Residential Bin  
Take-back

### SORTING RANGES

Whole garments  
Mixed color  
Mixed construction  
Mixed fibers  
Knit constructions  
Rolled goods  
Sorted colors  
Yarn waste

### SORTING REQUIREMENTS

Sort to grade  
Sort to rFeedstocks  
Feedstock aggregation

### COLOR SORTING GRADES

Mixed color  
Dark colors  
Light color  
White  
PC by color group  
PI by color group

### PREPROCESSING REQUIREMENTS

Trim removal  
Right sizing  
Shredding  
Disassembly  
Sanitation  
Testing  
Feedstock aggregation

### FEEDSTOCK TYPES

**Post-consumer**  
Cotton  
Polyester  
Polyester/Cotton Blends  
Polyester/Cotton Blends  
with <10% other fibers  
PET Bottles  
**Post Industrial**  
Cotton  
Polyester  
Polyester/Cotton Blends  
**Virgin**  
Cotton  
Wood Pulp

### RECYCLER TYPES

Chemical Cellulosic  
Chemical PET  
Mechanical Cotton  
Mechanical Poly  
Mechanical PET  
Semi-Chemical Cellulose

## TRIAL OUTPUTS

### RECYCLED OUTPUTS

Refibra™  
Cellulose Pulp  
Staple Fiber  
Filament Fiber  
PET Monomer  
PET Chip  
Yarn  
Fabric

### TEXTILE TYPES

**Knits**  
Jersey  
Fleece  
Pique  
**Wovens**  
Denim  
Canvas  
Terry

### PRODUCT TYPES

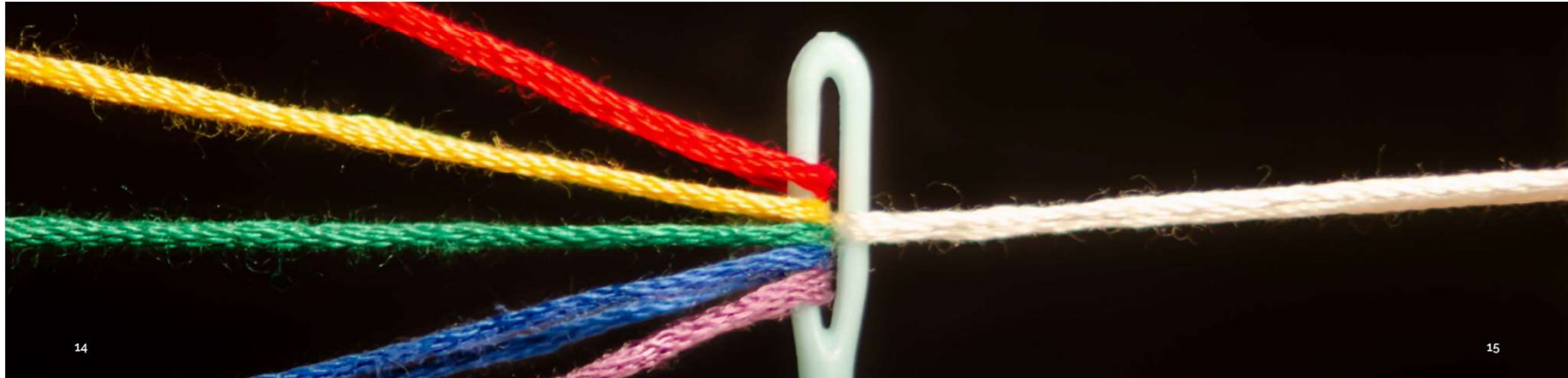
T-shirts  
Jeans  
Fleece  
Home Textiles

### FIBER TYPES

**Recycled**  
rCotton  
rPolyester  
rPET Chip  
Refibra™  
**Virgin**  
Cotton  
Polyester  
Elastane  
Dupont Sorona®  
Tencel™  
Naia Renew™

### YARNS

**Knitting**  
Naia Renew™/Polyester  
20/1 Cotton  
20/1 Cotton/Polyester  
20/1 Cotton/Polyester/Refibra™  
150D/78F Polyester  
**Weaving**  
8/1 Cotton  
10/1 Cotton  
10/1 Cotton/Polyester  
10/1 Cotton/Polyester/Refibra™



NO TEXT - Picture In Picture

# Recycler Matrices

## Mechanical Recycling Matrix

Feedstock Fibers	Acceptable for:		Can include:						Must Consider:				
	Textile-to-Textile	Wipers, Shoddy & Insulation	Elastane	Trims		Pigments/ Prints	Coatings/ Films		Chemistry/ Dyes	Fabric Construction	Color	Full Garments v. Parts	Fabric Scraps
				Plastic	Metal		PET	Other					
100% Cotton	Y	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y
98% Cotton/ 2% Elastane	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y	Y
90% Cotton/ 10% Other	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y	Y
60% Cotton/ 40% Polyester	N	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y
60% Cotton/ 40% Other	N	Y	Y	N	N	N	N	N	Y	Y	Y	Y	Y
100% Polyester	Y	Y	N	N	N	N	Y	N	Y	Y	Y	Y	Y
98% Polyester/ 2% Elastane	Y	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	Y
80% Polyester/ 20% Other	N	Y	N	N	N	N	N	N	N	N	N	N	N
60% Polyester/ 40% Cotton	N	Y	N	N	N	N	N	N	N	N	N	N	N
60% Polyester/ 40% Other	N	Y	N	N	N	N	N	N	N	N	N	N	N
100% Viscose	?	?	?	?	?	?	?	?	?	?	?	?	?
60% Viscose/ 40% Other	?	?	?	?	?	?	?	?	?	?	?	?	?

Textile to Textile Recycling Wiper/Shoddy

## Chemical Recycling Matrix

Feedstock Fibers	Can Include:						Must Consider:					
	Elastane	Trim		Pigment/ Prints	Coatings/Films		Chemistry/ Dyes	Fabric Construction	Color	White	Full Garments v. Parts	Fabric Scraps
		Plastic	Metal		PET	Other	Y	Y				
100% Cotton	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y
98% Cotton/ 2% Elastane	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y
90% Cotton/ 10% Other	Y	N	N	N	N	N	Y	N	N	N	Y	Y
60% Cotton/ 40% Polyester	N	Y	N	N	Y	N	Y	N	N	N	Y	Y
60% Cotton/ 40% Other	Y	Y	N	N	Y	N	Y	N	N	N	Y	Y
100% Polyester	N	N	N	N	Y	N	Y	N	N	N	Y	Y
98% Polyester/ 2% Elastane	Y	N	N	N	Y	N	Y	N	N	N	Y	Y
80% Polyester/ 20% Other	Y	N	N	N	Y	N	Y	N	N	N	Y	Y
60% Polyester/ 40% Cotton	N	Y	N	N	Y	N	Y	N	N	N	Y	Y
60% Polyester/ 40% Other	Y	Y	N	N	Y	N	Y	N	N	N	Y	Y
100% Viscose	?	?	?	?	?	?	?	?	?	?	?	?
60% Viscose/ 40% Other	?	?	?	?	?	?	?	?	?	?	?	?
Other												

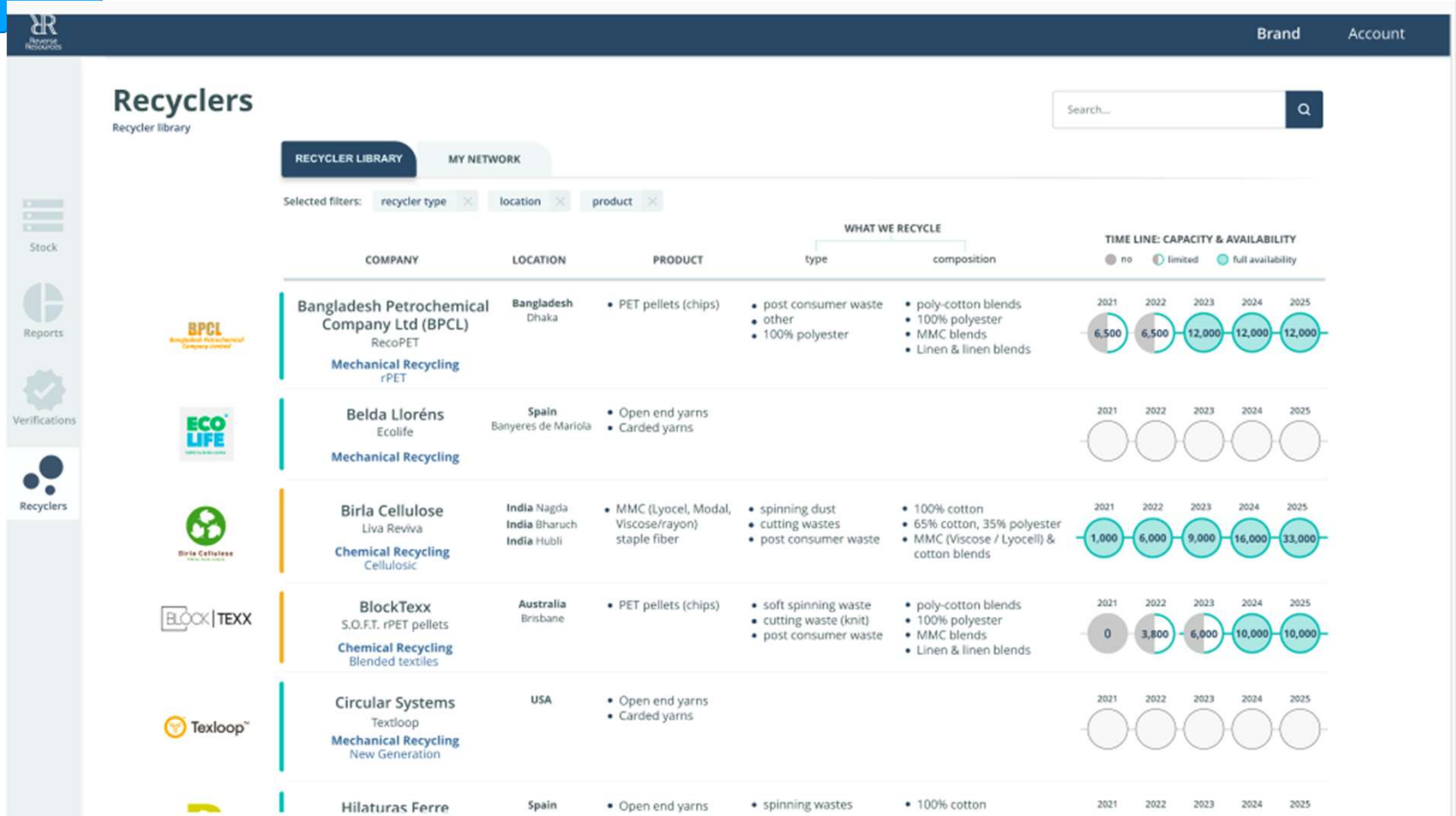
ACP 2021



NO TEXT - Picture In Picture

# Reverse Resources

ACP 2021

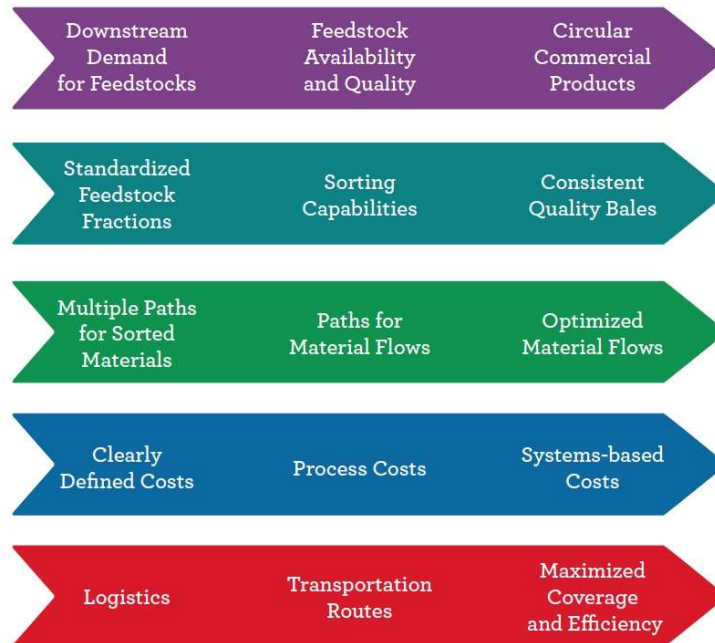




NO TEXT - Picture In Picture

## Envisioning Circular Systems

NEEDS  TRIAL DEMONSTRATES  FUTURE

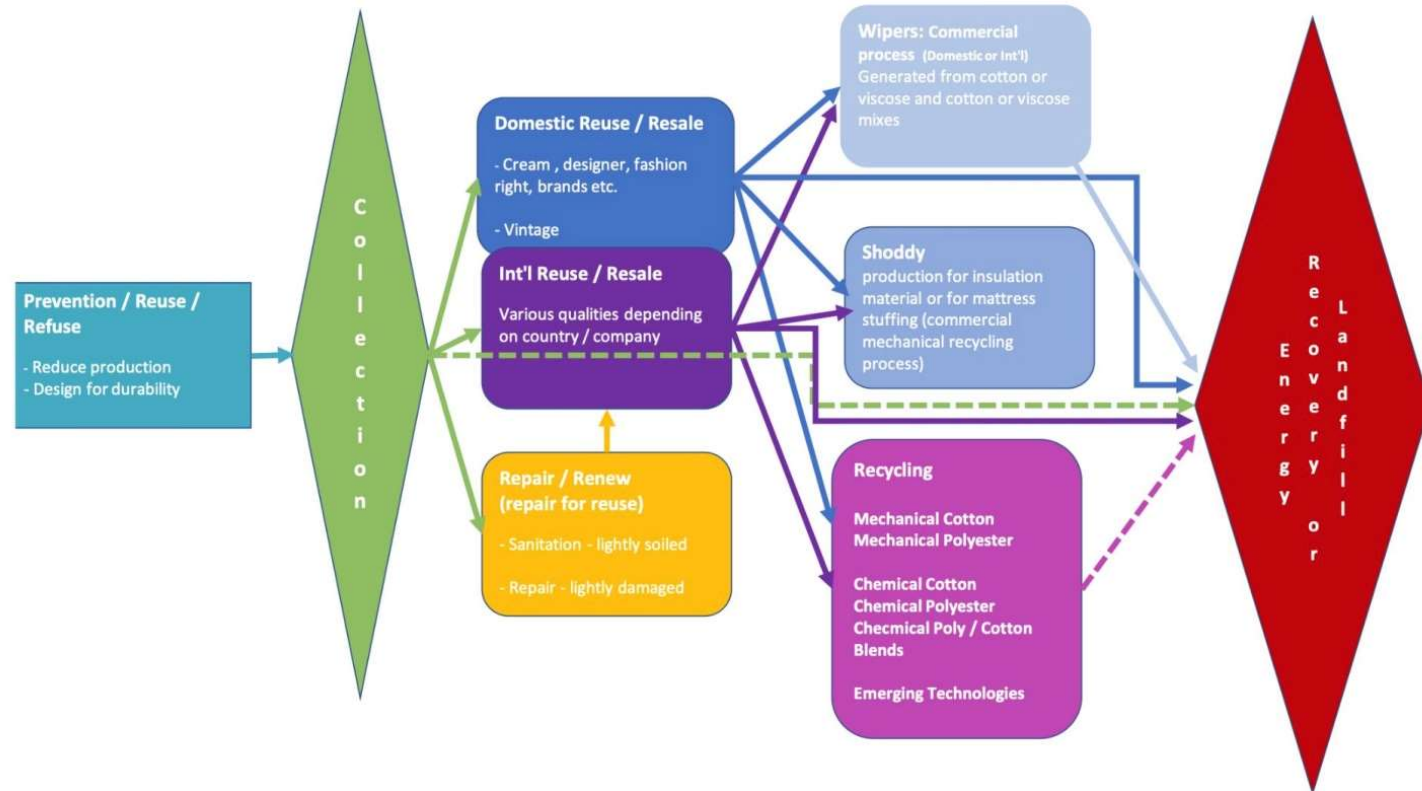


ACP 2021



ACCELERATING  
CIRCULARITY

# Spent Textile Use Case Hierarchy



[www.acceleratingcircularity.org](http://www.acceleratingcircularity.org)

# Business Models

ACP 2021

## Economics

- What.....
  - are current business models?
  - needs to change?
  - are the considerations?
- Who will participate?

## Environmental

- What's included.....
  - GHG?
  - Water?
  - Chemicals?
- How to measure?

## Policy

- What required.....
  - legislation?
  - local/global alliances?
  - social compliance?
- Who will advocate?



NO TEXT - Picture In Picture

## Collaboration = Action

ACP has done an incredible job bringing key stakeholders in the global fashion landscape together for the first time. These conversations have resulted in the joining, in a very real and practical sense, the chains that will make the circular economy. We can see fantastic examples for scalability in circularity in fashion already being put in motion....action is what our industry needs and action is what ACP is doing.

.....Steven Bethel,  
President & Partner Bank & Vogue



ACP 2021





# PUTTING TEXTILES TO GOOD USE



## JOIN US

<https://www.acceleratingcircularity.org/stakeholder-registry>