



Cleantech Forum **Europe** | Stockholm

Changing Clothes: The Circular Fashion Economy



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**MODERATOR:
DR. AMANDA
PARKES**

Chief Innovation
Officer, Future Tech
Lab



**LAUREN
ZAHRINGER**

Manager Of
Business
Development,
Sustainable
Apparel Coalition



**RICHARD
TÖRNBLOM**

Chief Marketing
Officer, Re:newcell



**EBBA NILSSON-
LEPAGE**

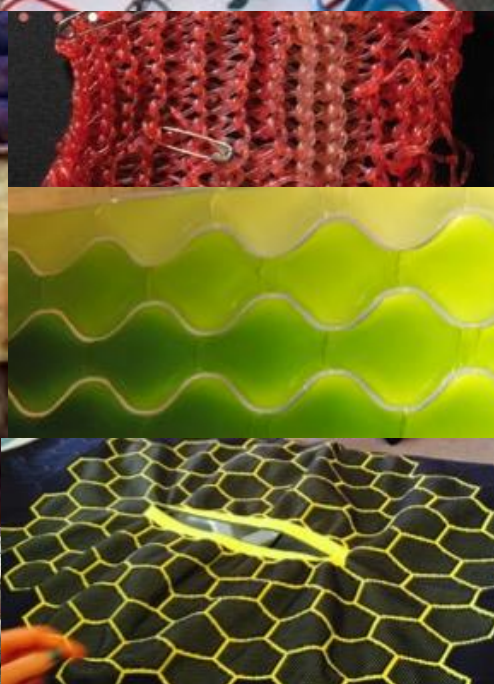
Vice President M&A
And Corporate
Finance, Stora Enso

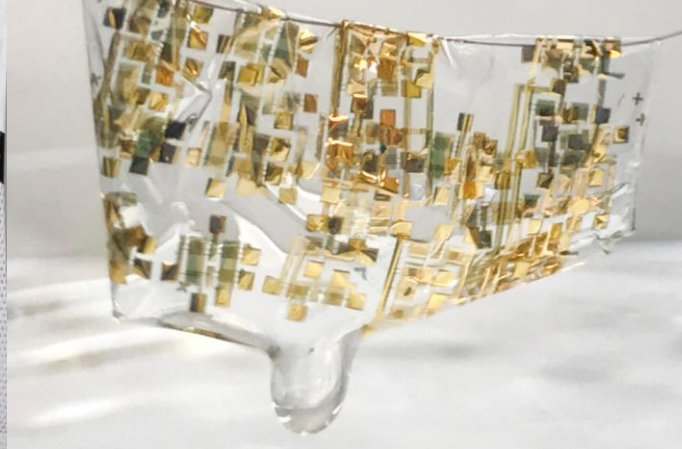
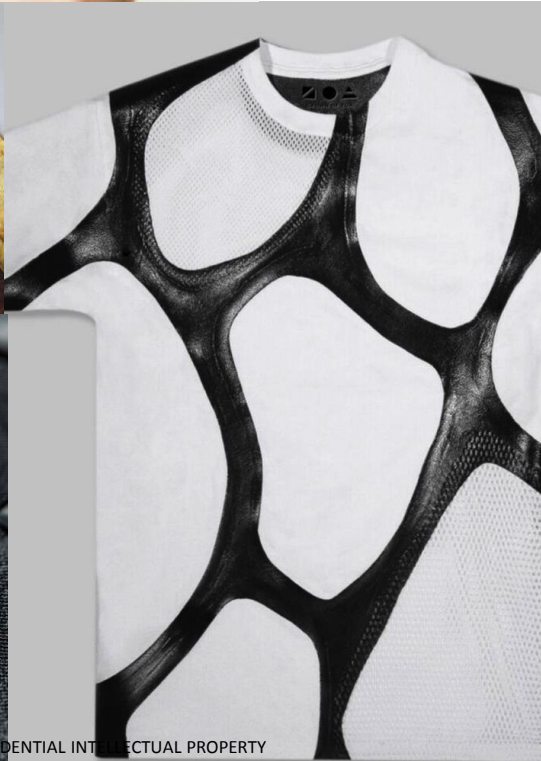
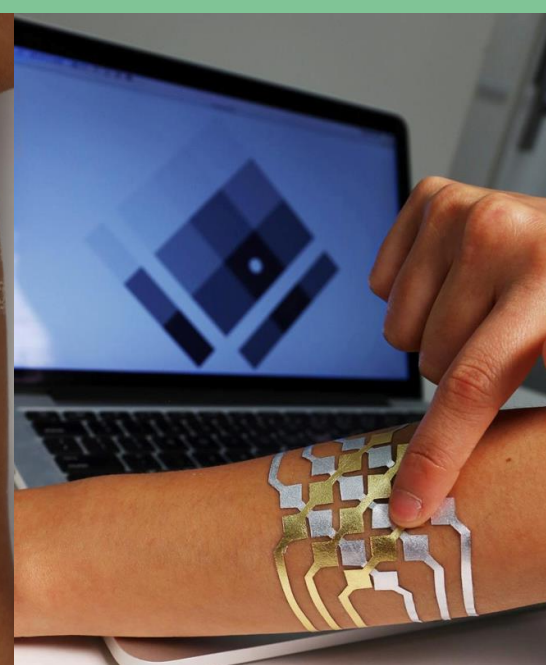
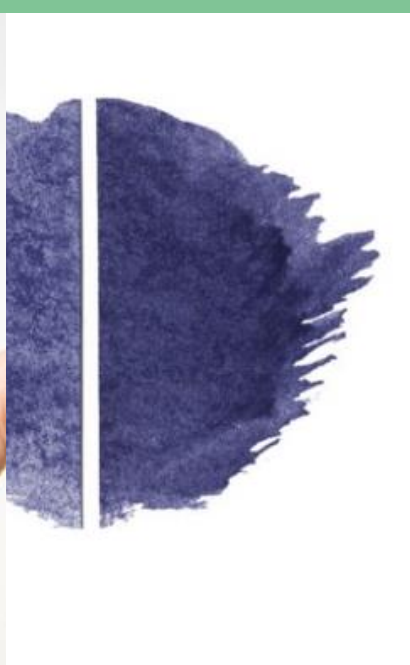
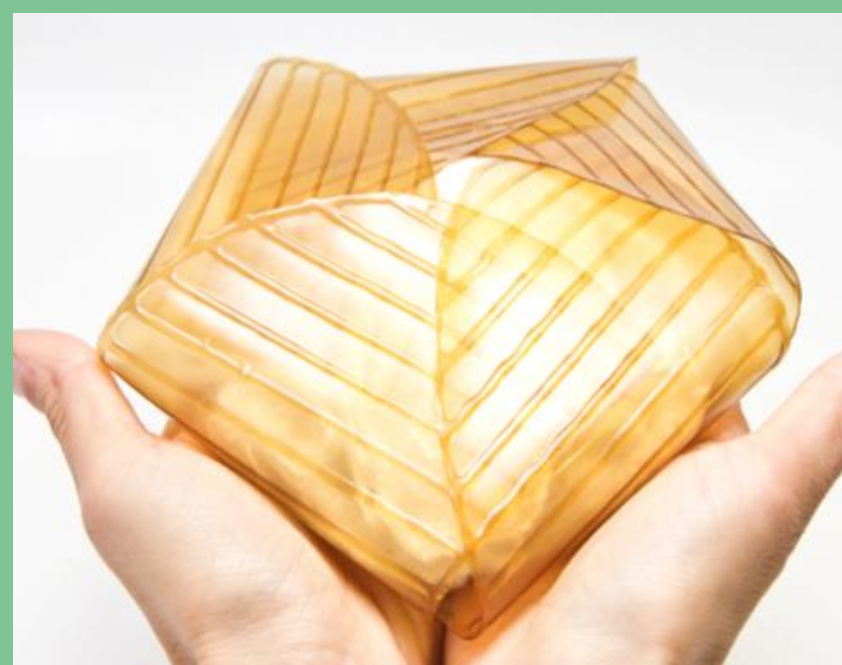


ELIN LARSSON
Founder, Elco

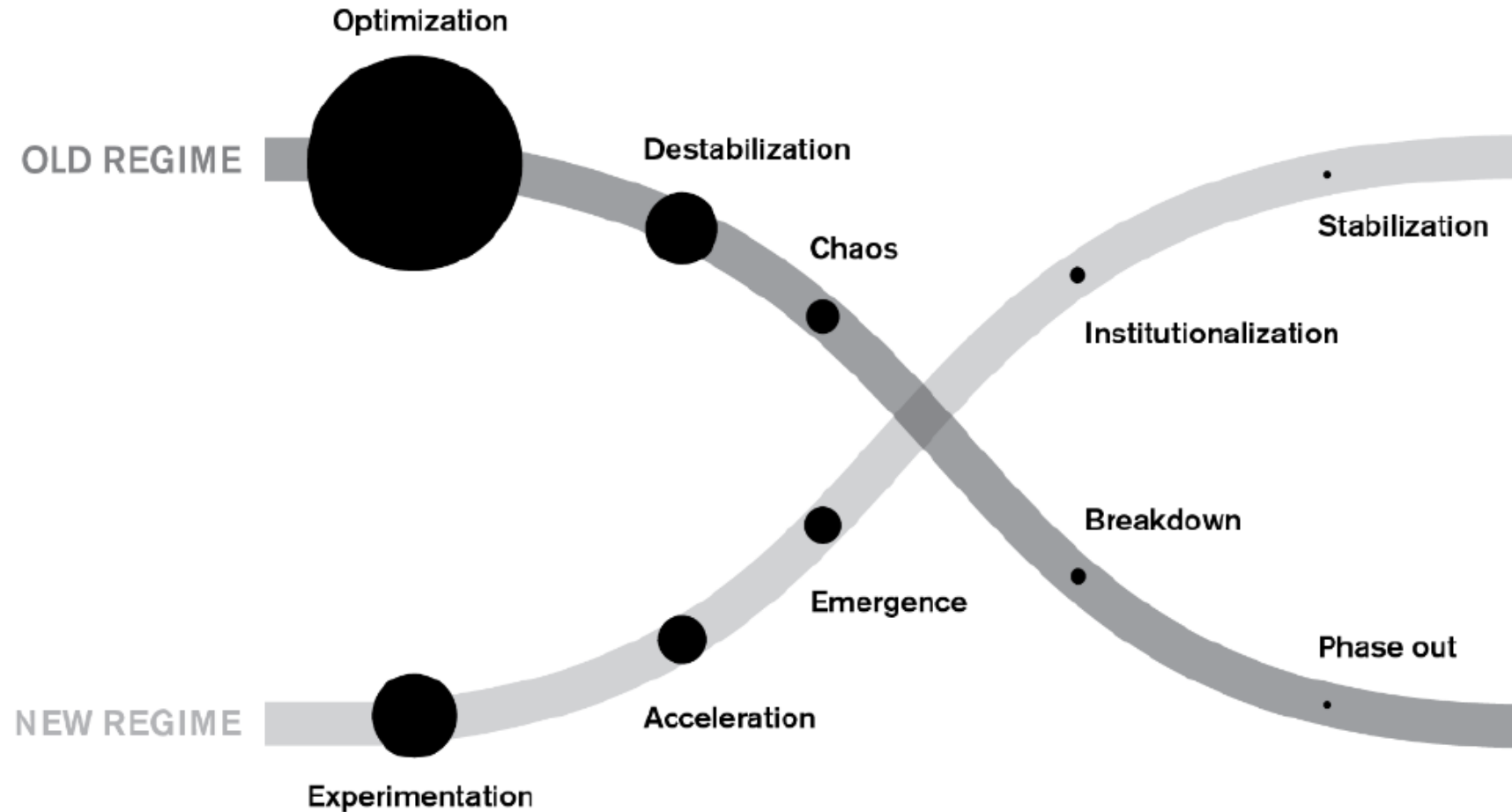


**HRISHIKESH
RAJAN**
Founder and CEO,
Trustrace



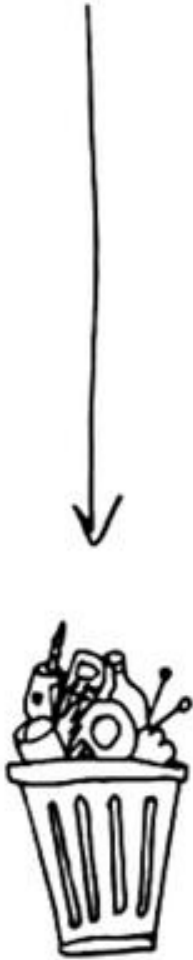


FASHION IS AN INDUSTRY IN TRANSITION



Source: Drift, C&A, FFG

LINEAR ECONOMY

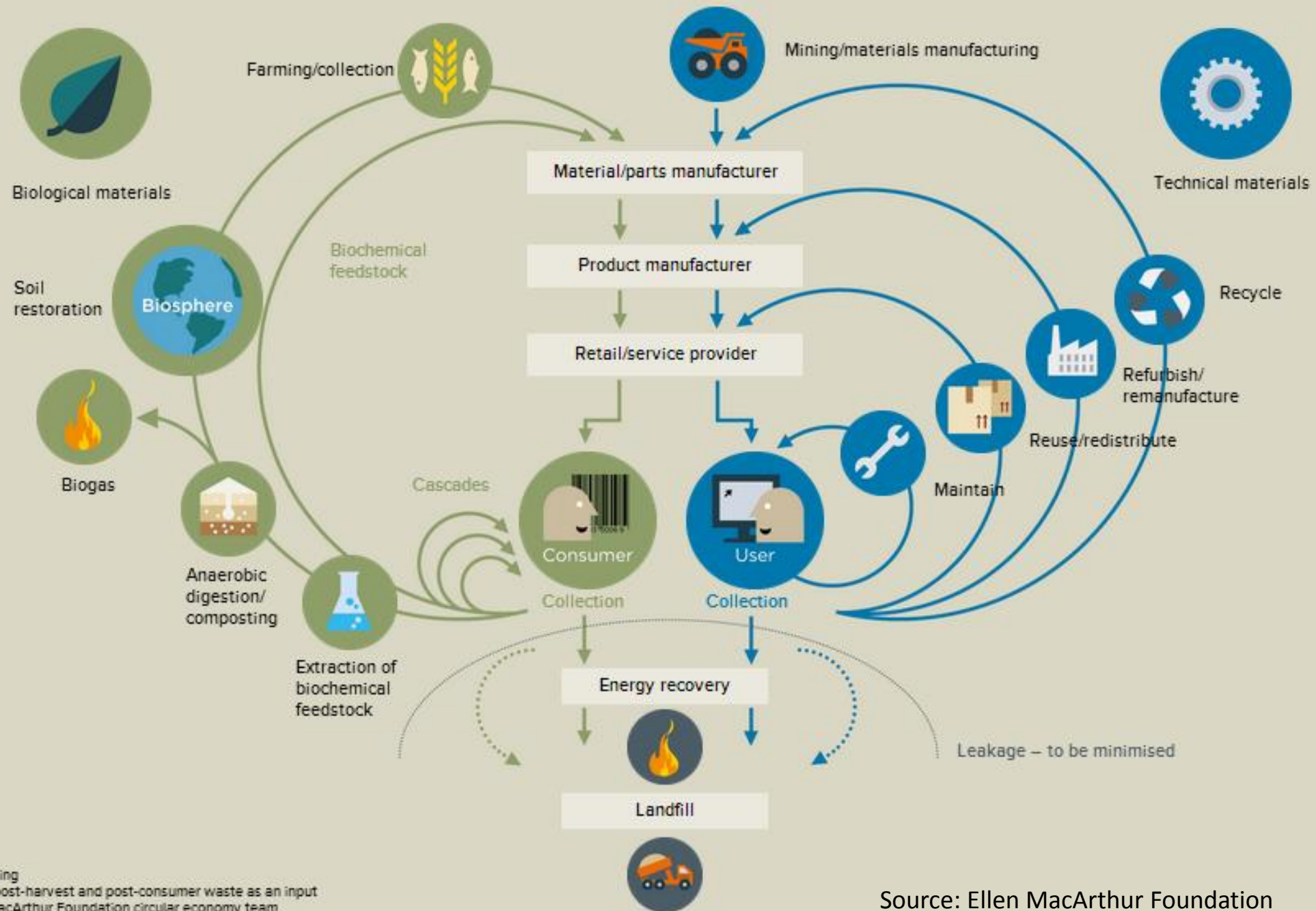


RECYCLING ECONOMY



CIRCULAR ECONOMY





1 Hunting and fishing
 2 Can take both post-harvest and post-consumer waste as an input
 SOURCE: Ellen MacArthur Foundation circular economy team

Source: Ellen MacArthur Foundation

FUTURE TECH LAB

A UNIQUE HYBRID STRUCTURE ENABLING A FUTURE OF SUSTAINABLE & TECHNICAL FASHION
CONNECTING, COLLABORATING & CREATING PRODUCTS TO EVOLVE THE \$2.4T FASHION INDUSTRY

INVESTMENTS

Strategic & socially responsible investments - give startups access to brands, designers, influencers. Focus on Seed/Series A, or established research converting to a business entity

AGENCY

Provide solutions and large international fashion brands wishing to implement technologies and sustainability

EXPERIMENTAL LAB

Facilitate commercialization and scale up of groundbreaking research technologies, creating future perfect products

INCUBATOR

“FTL Innovation Challenge” to attract the most promising fashion tech start-ups and technologies

A SUSTAINABLE MATERIAL CULTURE

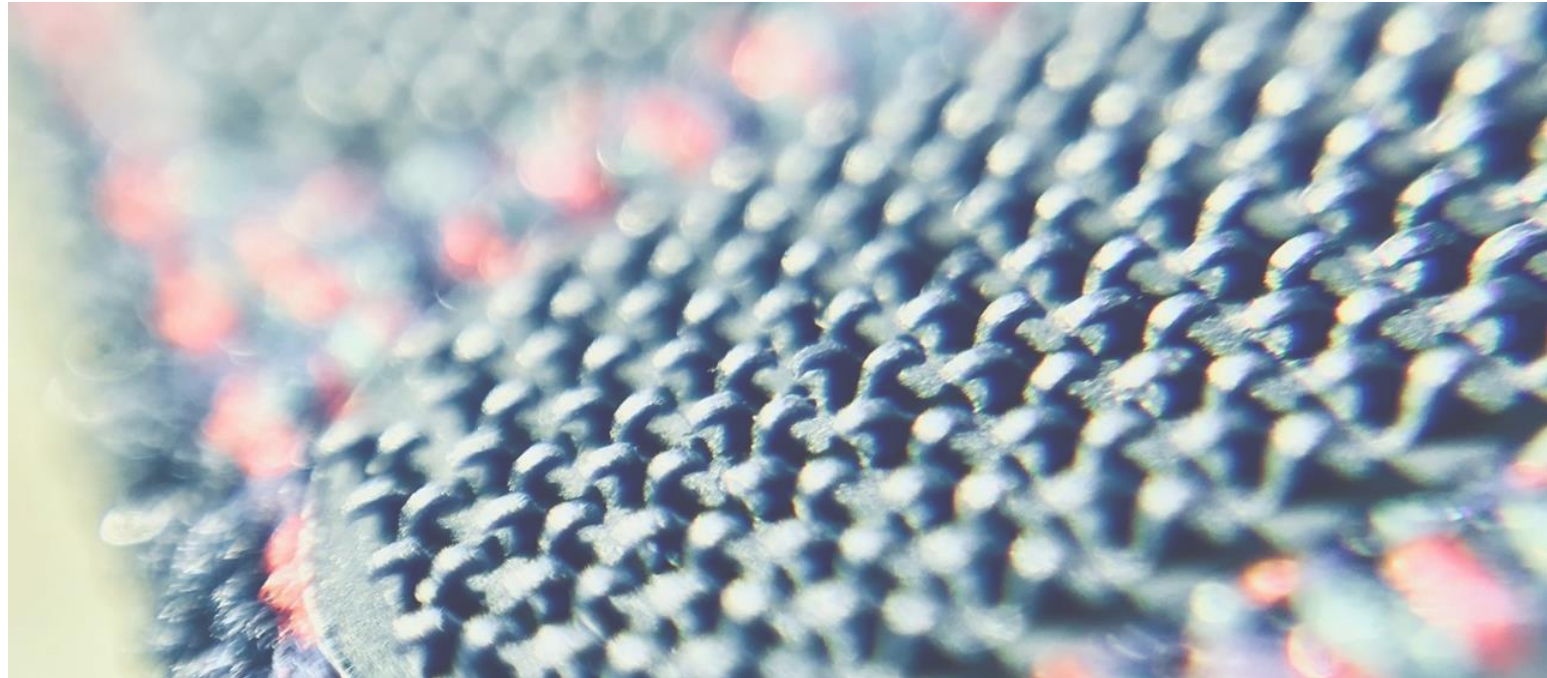
Recycled & Reclaimed Materials

Biomaterials

Advanced & Active Materials

Interaction across the physical, digital
and biological domains make the
fourth industrial revolution
fundamentally different from
previous revolutions.

- Klaus
Schwab





Flower down



Seaweed
fiber



Compostable
packaging



Materials
recycling



Peppermint oil
treatment

And
more...

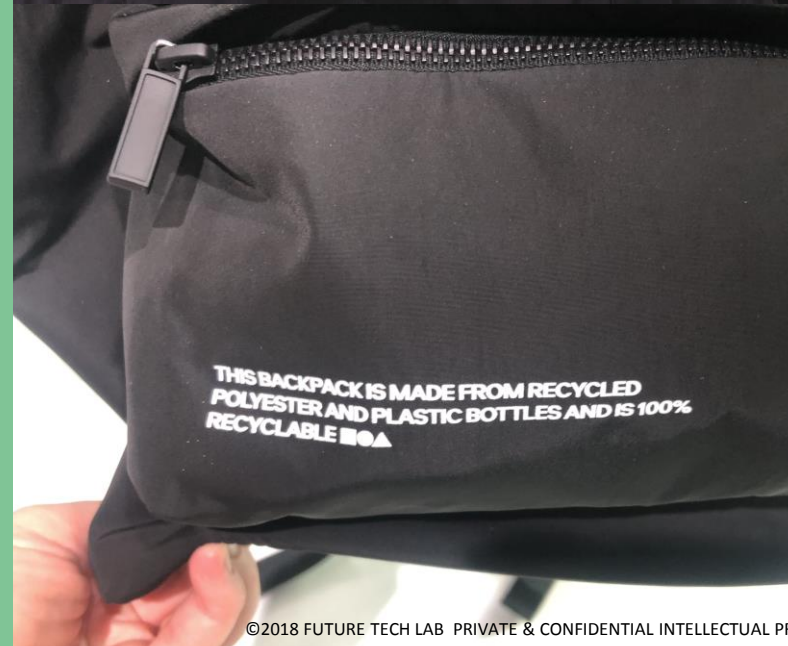
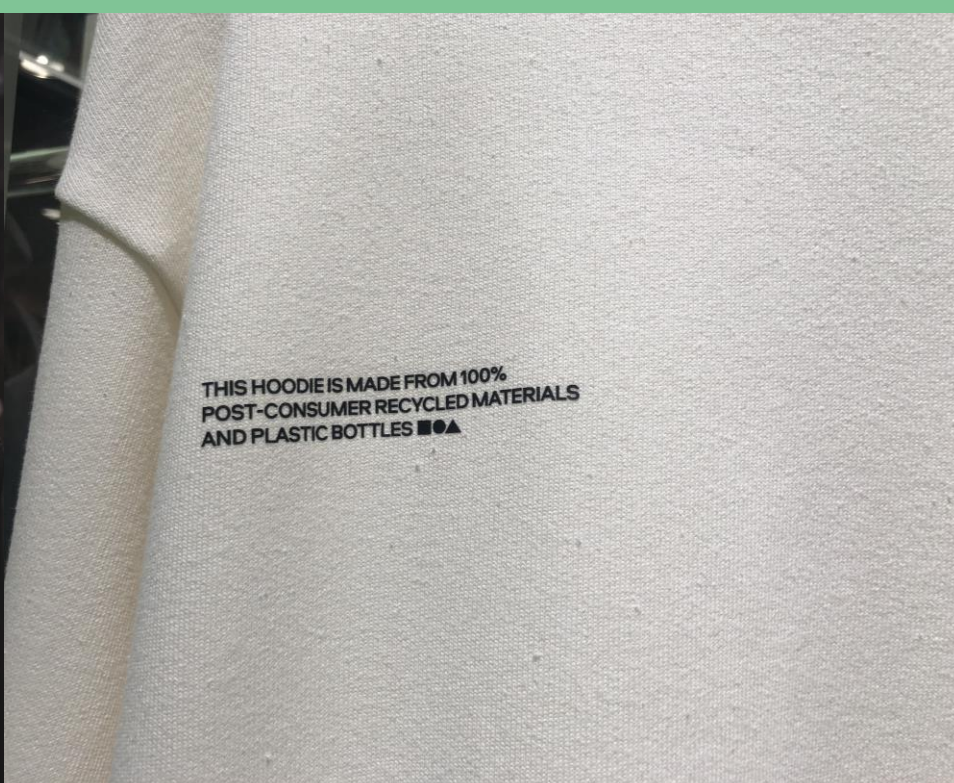
We are PANGAIA—a global collective of one heart and many hands: scientists, technologists, designers—who all believe that we can do better.

We create from renewable and alternative resources, bio and lab grown materials, recycled, sustainable and as natural as possible.

We are starting a movement.

For a better now, for a better future.







Flower down

Breakthrough vegan technology combining an innovative flower based blend with the patented Aerogel system to provide extraordinary thermal insulation properties



Lauren Zahringer

Business Development Manager, Sustainable Apparel Coalition



Sustainable
Apparel Coalition



Sustainable Apparel Coalition

#HiggIndex

@apprlcoalition

The Patagonia logo, featuring the word "patagonia" in a bold, lowercase, sans-serif font with a registered trademark symbol (®) to the upper right of the "a".

patagonia®

The Walmart logo, featuring the word "Walmart" in a blue, sans-serif font, followed by a yellow six-pointed starburst icon.

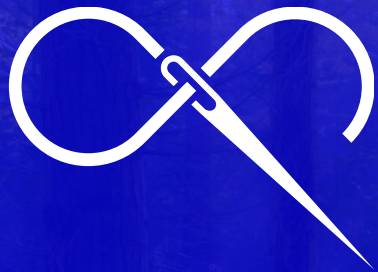
Walmart

In 2009, Patagonia & Walmart Had a Radical Mission:

Collect peers and competitors from across the apparel, footwear, and textile sector, and together, develop a universal approach to measuring sustainability performance.



Sustainable Apparel Coalition



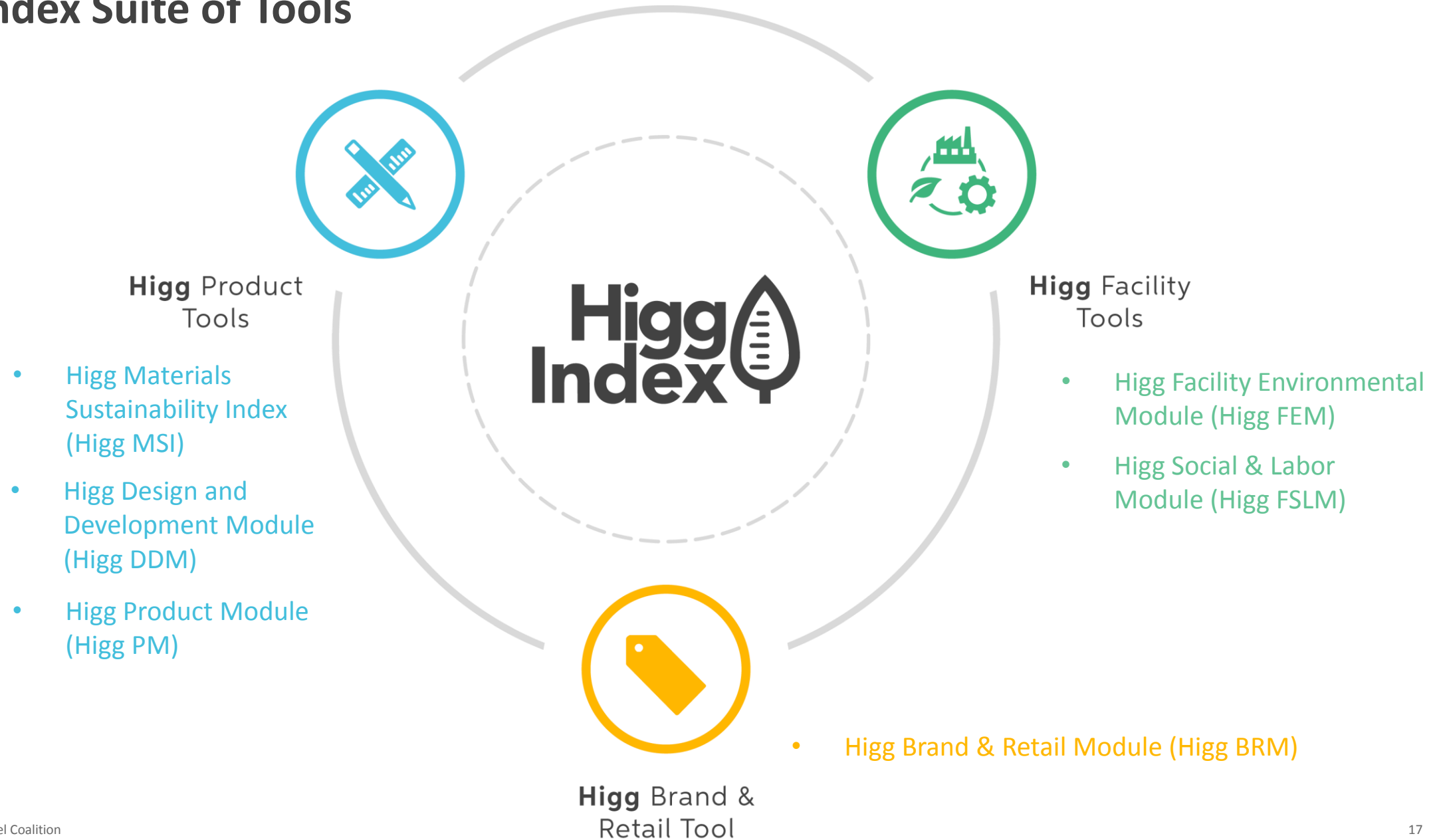
The Sustainable Apparel Coalition's vision is of an apparel, footwear, and textile industry that produces no unnecessary environmental harm and has a positive impact on the people and communities associated with its activities.



250+ Global Members



Higg Index Suite of Tools





Cleantech Forum **Europe** | Stockholm





storaenso

THE RENEWABLE MATERIALS COMPANY

Everything that's made with fossil-based materials today can be made from a tree tomorrow



Consumer Board



Packaging Solutions



Biomaterials



Wood Products



Paper

Ending the era of fossil-based materials

Innovation projects with high potential impact to transformation



**Bio-barriers,
MFC films**



**Liquid and food
packaging**

**Native and
modified MFC**



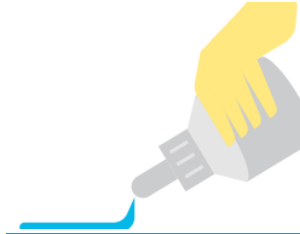
**Specialty papers, non-
wovens, personal and home
care, barrier materials**

**Intelligent
packaging**



**Sophisticated applications
to brand owners and supply
chains**

**Lignin for phenol
replacement**



**Reduction of fossil raw
materials in adhesives**

**Dissolving pulp to novel
cellulose materials**



**Textiles and
nonwovens**

**Bio-based carbons for
energy storage**



**Anode material for batteries,
activated carbon for double
layer capacitors**

**Bio-based
plastics**



**Chemical
intermediates**

Biocomposites



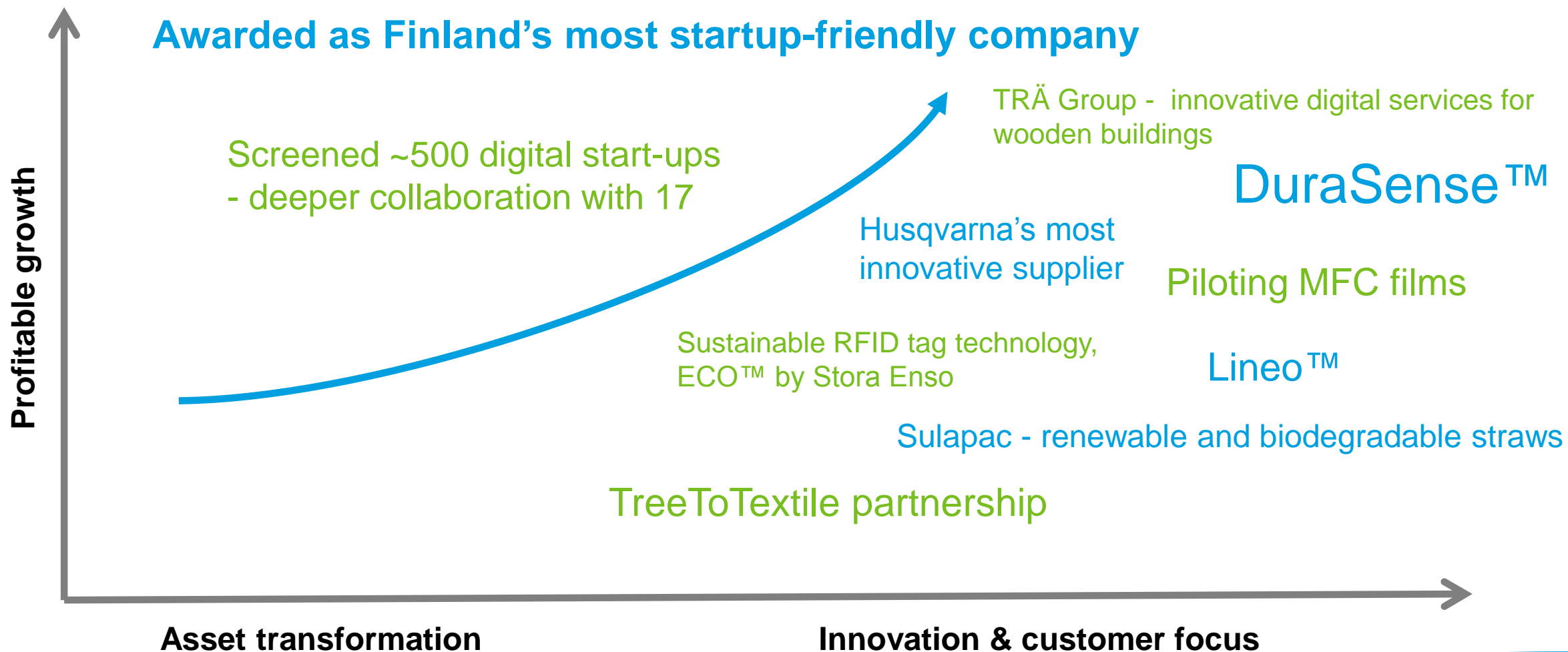
**Replacing fossil-based
plastics in composites**

**Carbon
fibre**



**Sports and leisure, wind
energy, automotive, aviation**

Innovation never happens in isolation





EUR 52 million

**investment to increase
dissolving pulp
production**

TreeToTextile

**partnership to develop
woodfibre-based
textiles**

Filippa K

A JOURNEY TO SUSTAINABILITY & OUR COMMITMENTS FOR 2030

TO INSPIRE A MOVEMENT OF
MINDFUL CONSUMPTION

BY SHOWING THAT SIMPLICITY
IS THE PUREST FORM OF
LUXURY

OUR COMMITMENTS 2030

Conscious design for a better future

- Only sustainable materials
- Only recyclable styles

Sustainable sourcing & manufacture

- Full transparency in our supply chain
- Only sustainable production processes

Resource efficient business

- Accurate purchase precision in number of pieces produced
- Minimal footprint through out our business

People in our value chain are respected

- Total compliance to Filippa K Code of Conduct based on Filippa K's values

Long-term sustainable success

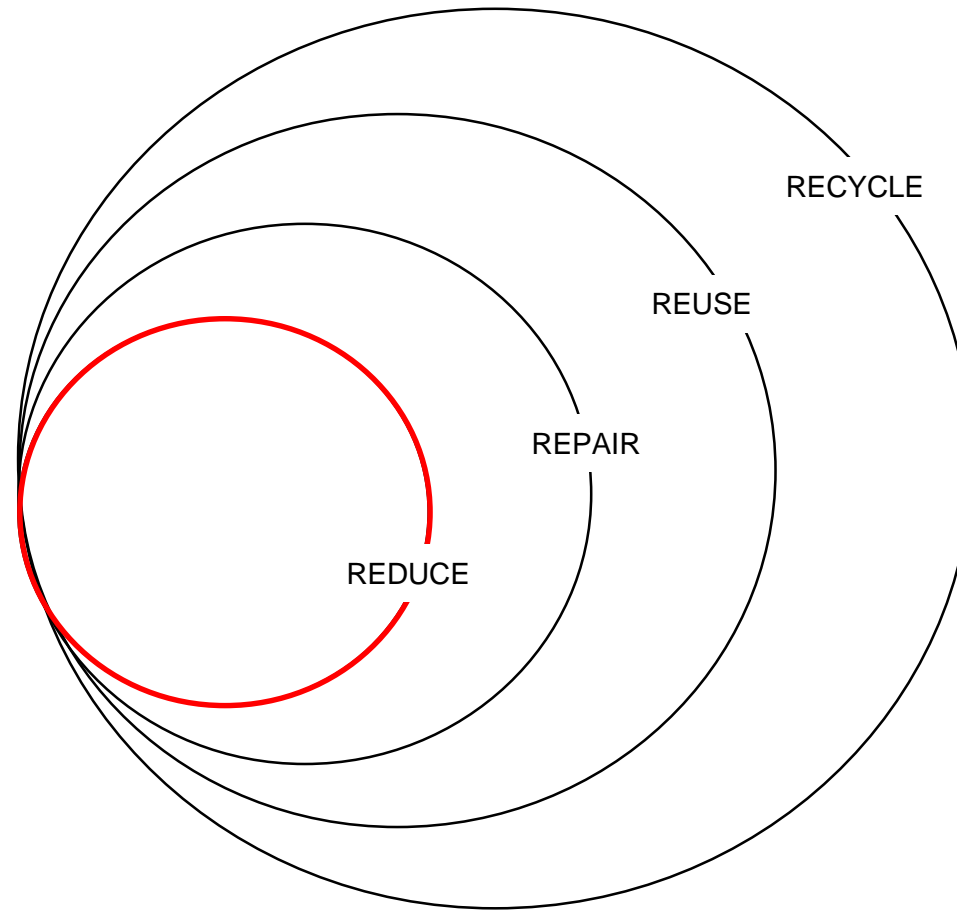
- Professional long-term partnerships
- Sustain a profit level of more then 10% EBT
- Sustain a growth in comparable units



CIRCULAR FASHION

Filippa K

CIRCULAR FASHION





Since our clothes are made to last, please pass it on to some one else if no longer in use, or return it to us for reuse.

#NotThatComplicated

7 Pieces Is All You Need

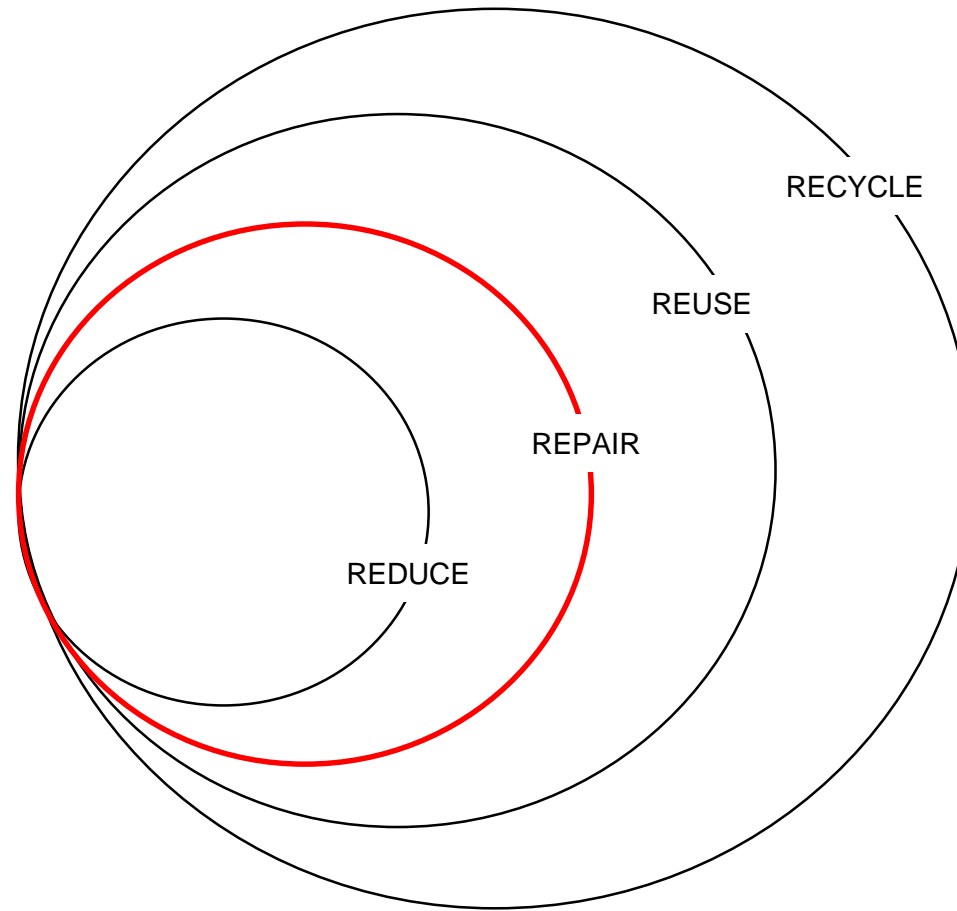


FRONT RUNNERS

1. Minimal waste
2. Recyclable
3. Sustainable materials
4. Minimal use of resources
5. Less chemicals
6. Minimal emissions
7. Transparent supply chain
8. Respect for people
9. Respect for animals
10. Long-lasting in design and quality
11. Perfect fit and comfort
12. Financially sound



CIRCULAR FASHION

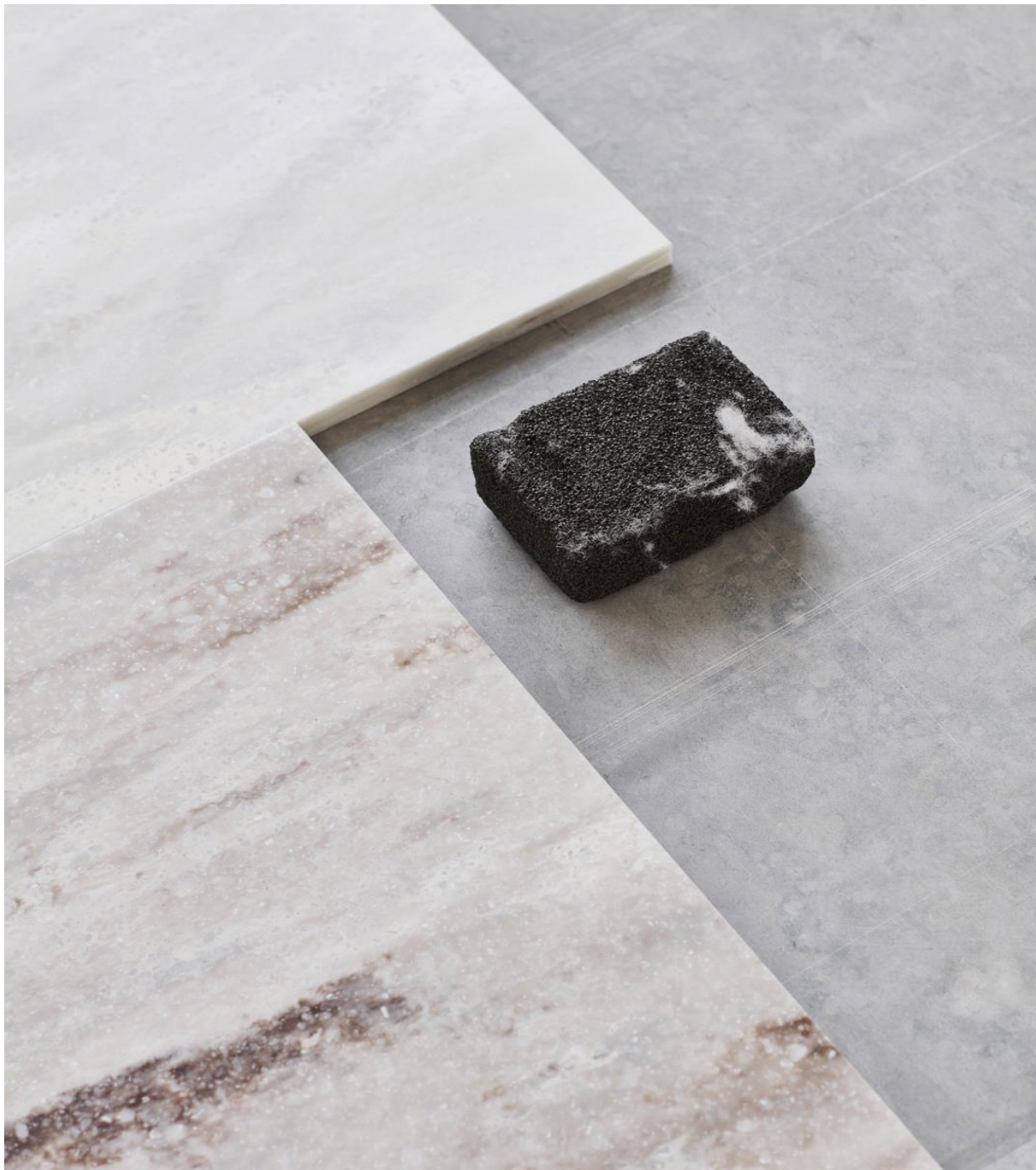


The image is a minimalist, high-quality photograph of a clothing care area. On the left, a light-colored wooden drying rack with multiple horizontal bars holds several items of clothing: a white long-sleeved shirt, a white t-shirt, and a grey long-sleeved shirt. In the center, a small, white, square-topped table stands on a light-colored floor. Next to the table, a pair of white sneakers is placed. On the right, a white metal hanging rack holds three items: two white long-sleeved shirts and a brown leather bag. The background is a plain, light-colored wall, and the overall aesthetic is clean and modern.

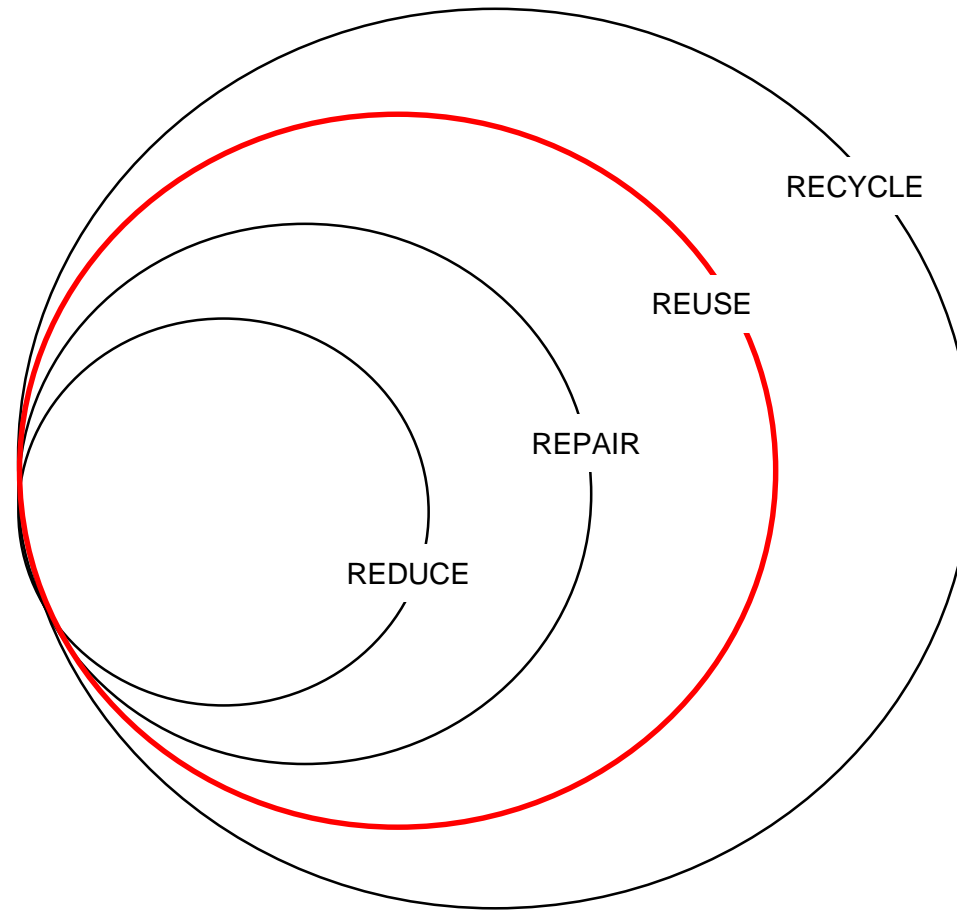
Filippa K Care

How to Wash, Mend & Care





CIRCULAR FASHION



Filippa K Collect

Give your garment a second life



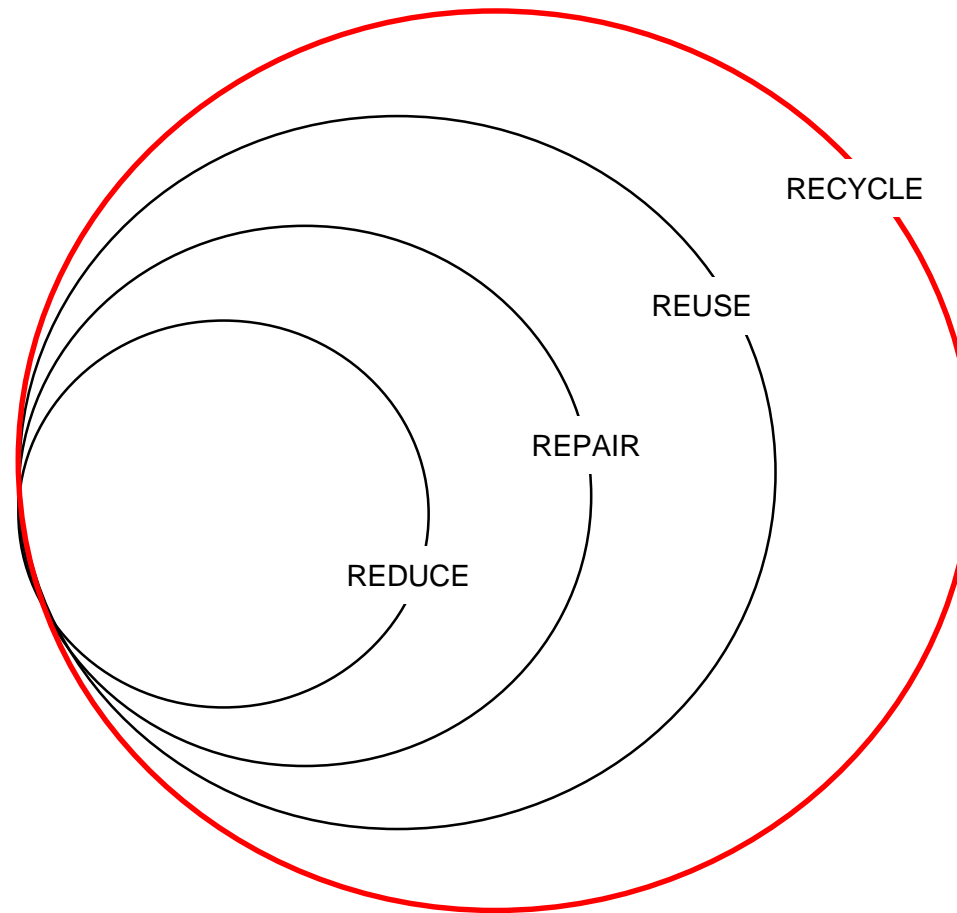


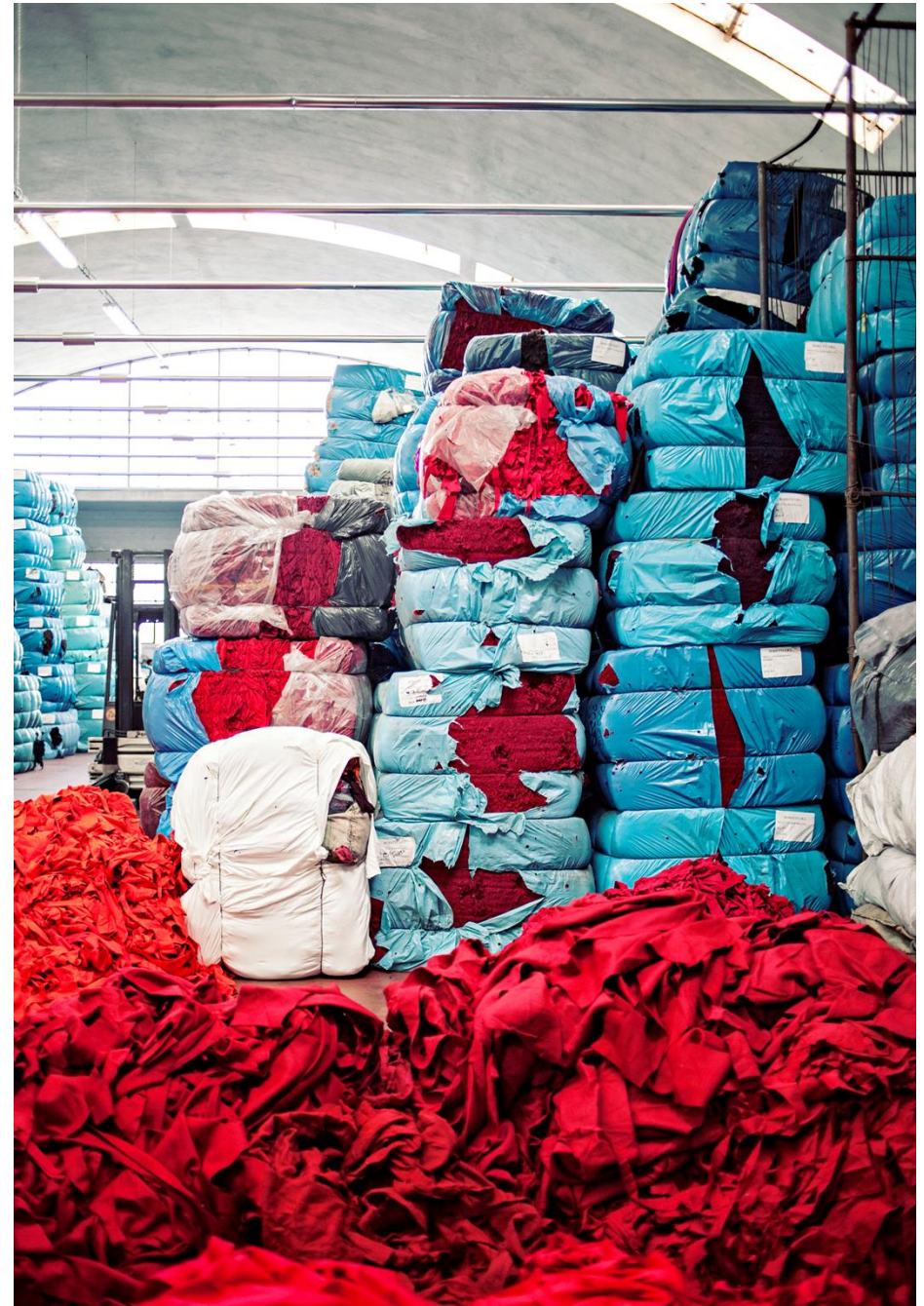
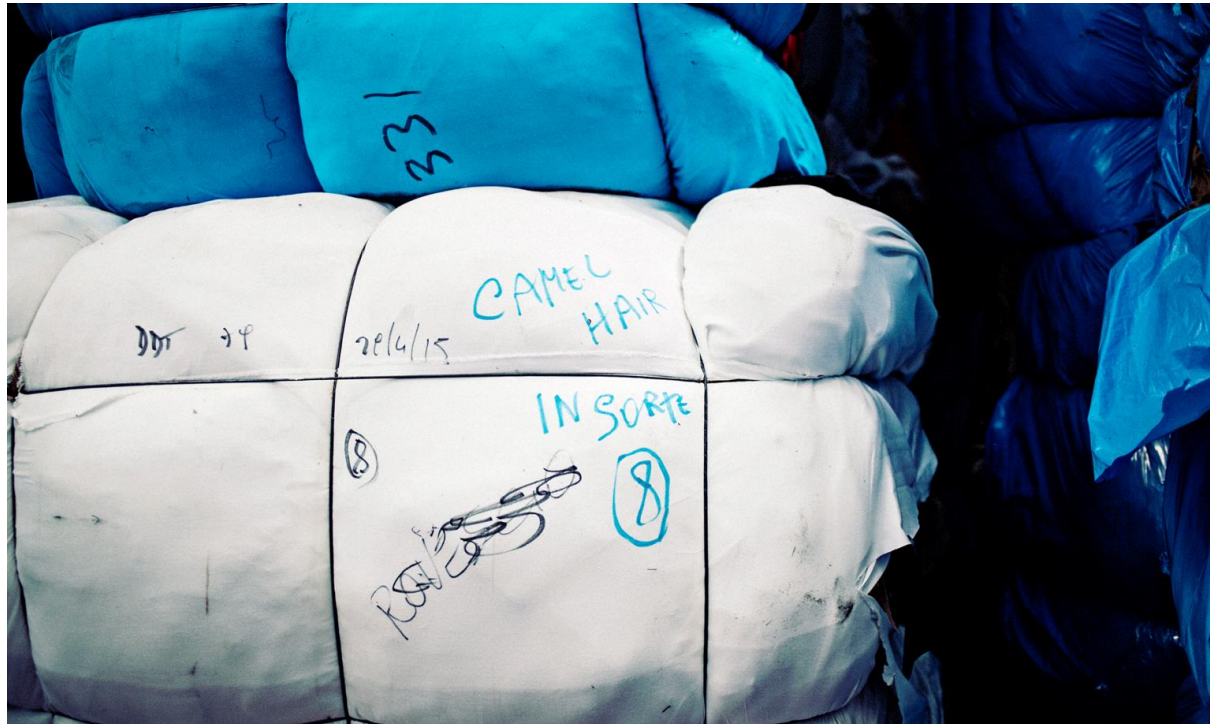
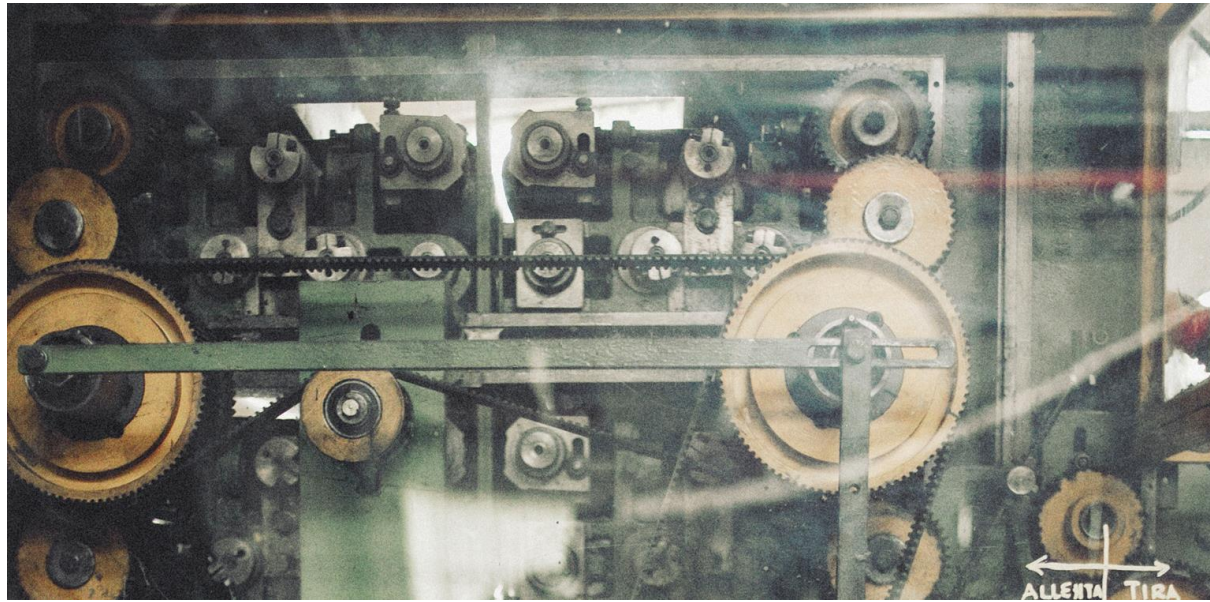
Filippa K Lease

A way to sustainable consumption



CIRCULAR FASHION







CIRCULAR FASHION

Filippa K

WHY SO HARD?

OPTIMIZED

MINDSETS

SILOS

TIME

FRONT RUNNERS

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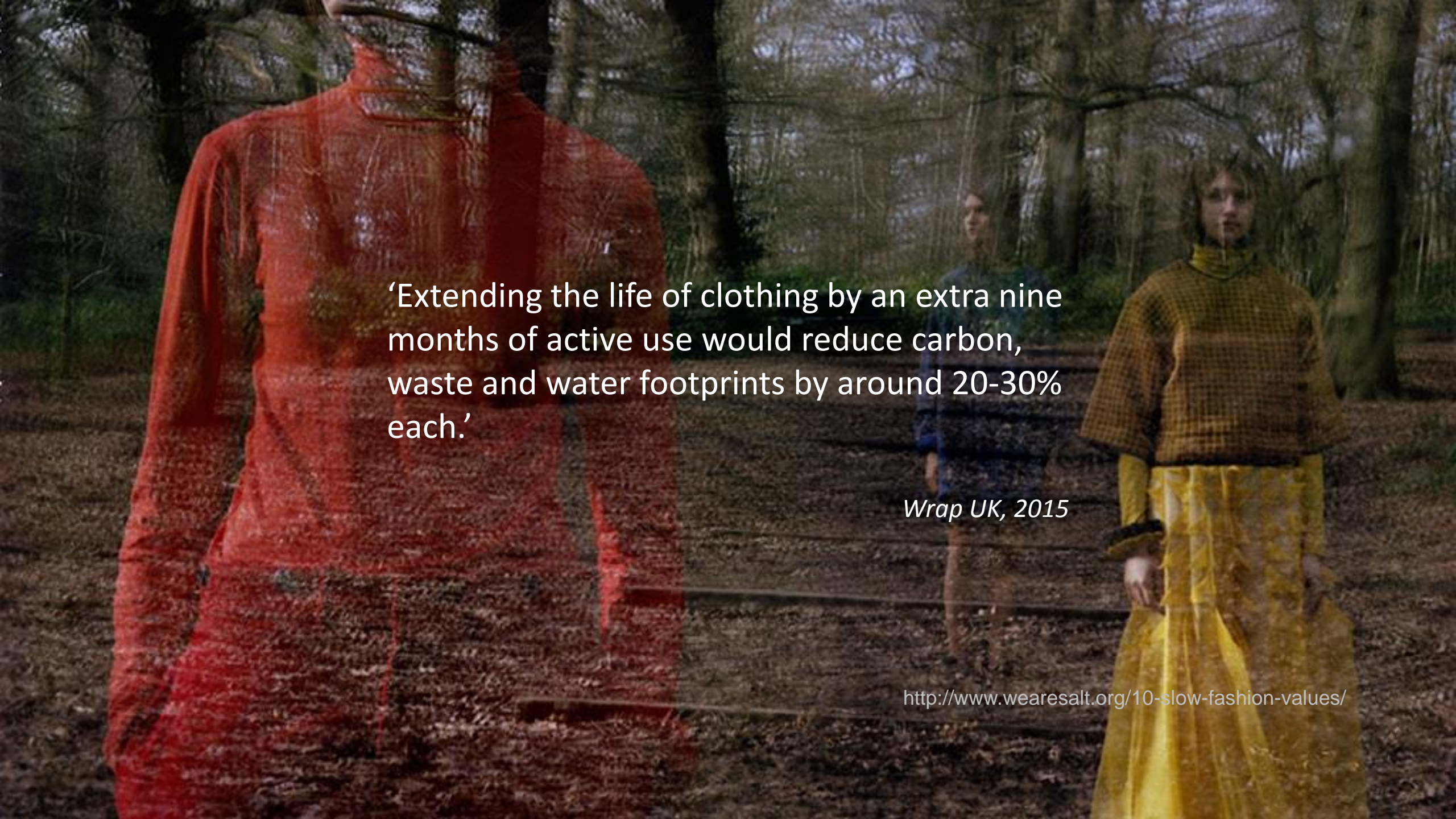
Circular design speeds

We aim to **develop the first verified circular garments** where all environmental impacts and aspects during a full life cycle are taken into account and optimized based on a pre-determined life length.

Design Researchers in Residence at Filippa K
to test and develop the principles of the
Mistra Future Fashion Design Theme

Nov 2016 – Nov 2018





‘Extending the life of clothing by an extra nine months of active use would reduce carbon, waste and water footprints by around 20-30% each.’

Wrap UK, 2015

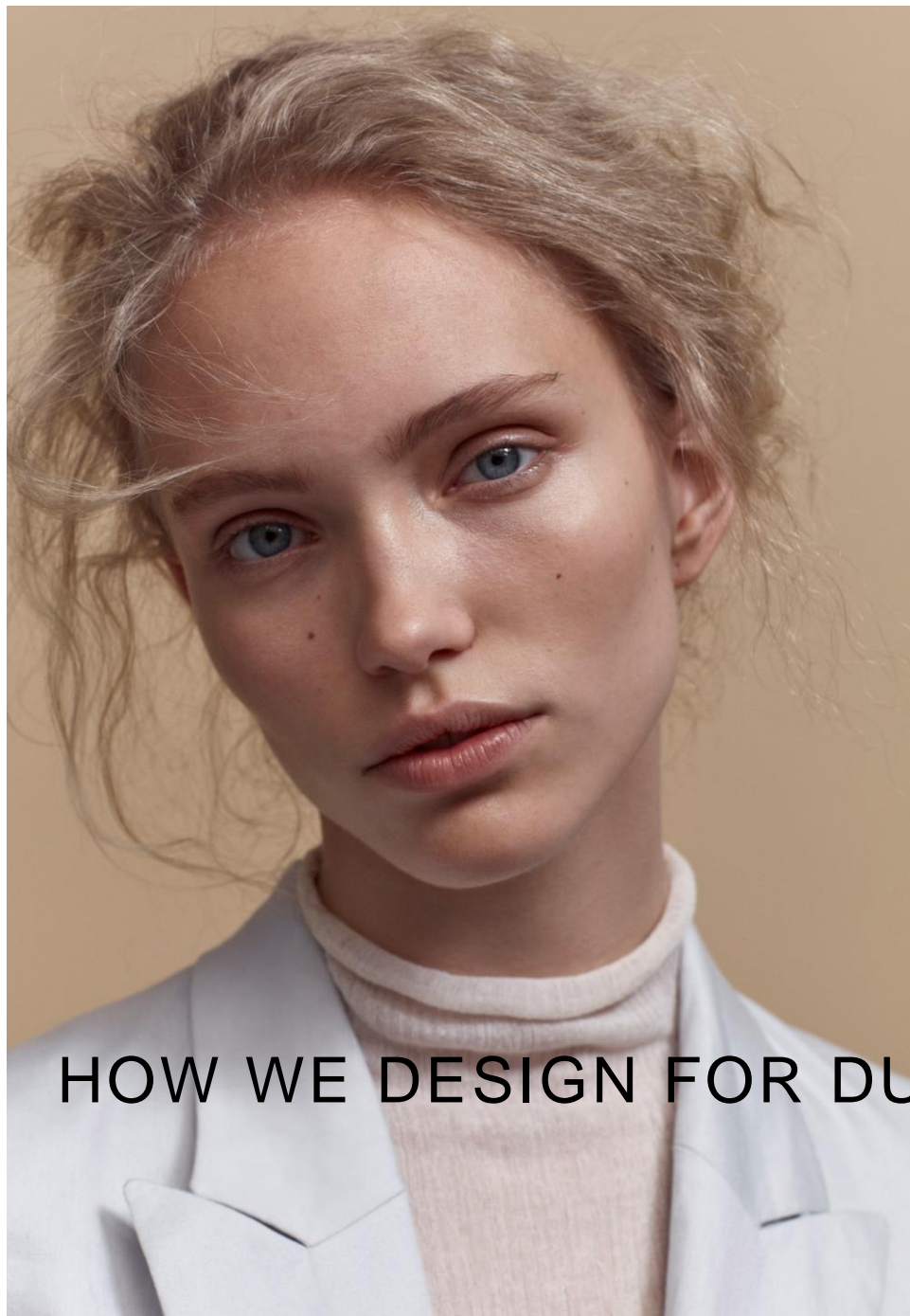
<http://www.wearesalt.org/10-slow-fashion-values/>

mono no aware

An appreciation of short lived product lifespans as part of the long and short cycles in nature.

Natural cycles contribute nutrients to provide sustenance for regeneration.





HOW WE DESIGN FOR DURABILITY & LONG LIFE?

HOW WE DESIGN FOR SHORT LIFE? WE DON'T...

FILIPPA K LEASE
A WAY TO
SUSTAINABLE
CONSUMPTION



LEASE THE LOOK
Unique SS16 runway pieces straight of the catwalk

WARDROBE BEHAVIORS & NEEDS

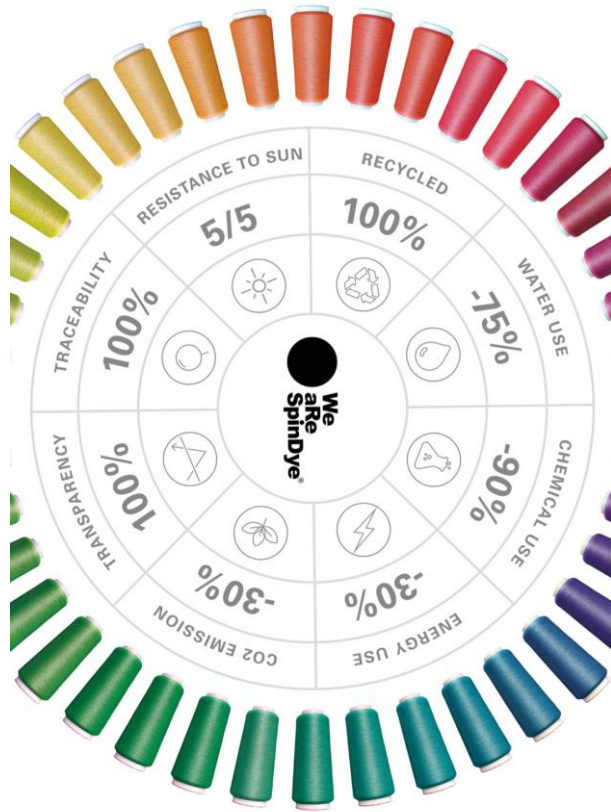


LONG LIFE – TECHNICAL CYCLE

100% Recycled material

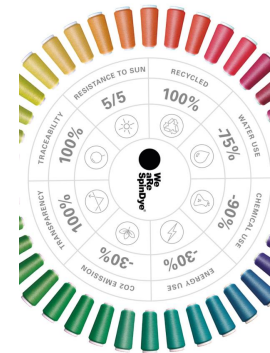
100% Recyclable

THE ETERNAL TRENCH COAT - SS19 COLLECTION



LONG LIFE – TECHNICAL CYCLE

Only recycled materials and fully recyclable

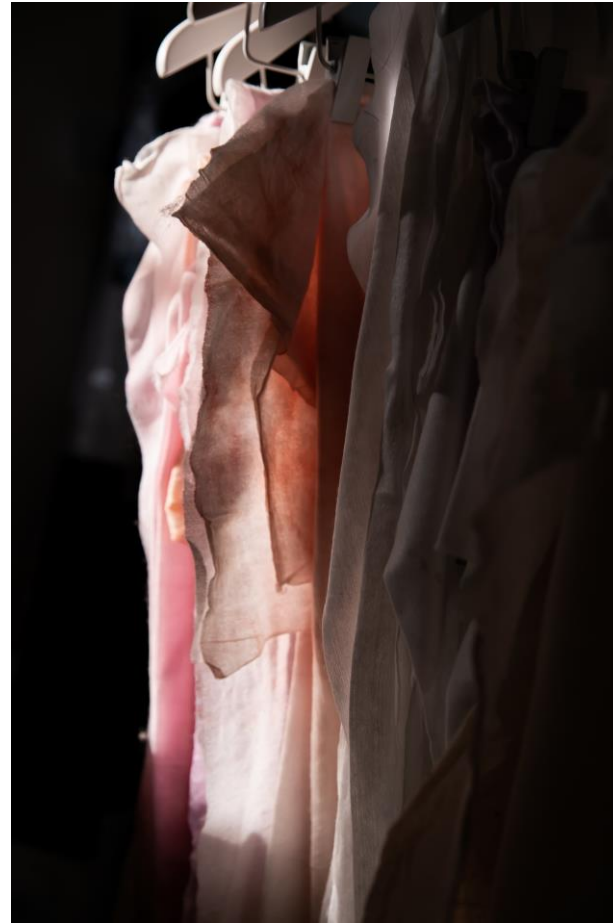


SHORT LIFE – BIOLOGICAL CYCLE

100% Bio based material

100% Compostable

THE THROW AWAY DRESS – CONCEPT DRESSES



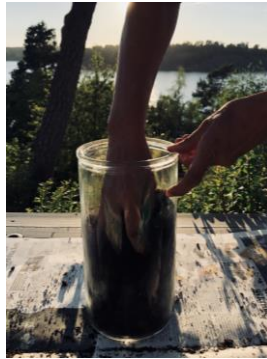
THREE STYLES – WOMAN

"The throw away dress"



SHORT LIFE – BIOLOGICAL CYCLE

Bio-based and fully biodegradable



CREATING NEW ECO SYSTEMS

From heavy industry to the world of fashion



CREATING NEW ECO SYSTEMS

From heavy industry to the world of fashion



INSIGHTS

BEGIN WITH THE END IN MIND

AGE OF PARTNERSHIPS

LOOK OUTSIDE YOUR ECOSYSTEM

TRANSPARENCY AND OPENNESS TO CREATE A WIN-WIN

A black and white photograph of two women on a train. The woman on the left is sleeping with her head resting on the window frame, her hand near her face. The woman on the right is looking out the window with a thoughtful expression, her hair blowing in the wind. The background shows a blurred landscape from the train's perspective.

THANK YOU!
elin@elco.nu



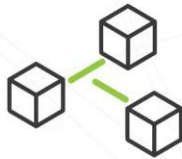
Trust Through Traceability



Scan Here To
Schedule a Demo



Digital Traceability Platform



**Peer Collaboration
Powered By
Blockchain**



**Integrated Sustainability
and Production
Execution**



**Supply Chain
Transparency**

Manage Product Claims & Certificates



ABC Exporters
Garment

- Stitching - Green Exporters Facility 1
- Trimming - Green Exporters Facility 2
- Cutting - Green Exporters Facility 3

Brand Level Material Risk, Supplier Exposure

HR Threads
Thread



PolyOrg
Bags



GB Trims
Label



BIS Mills
Fabric



- Knitting - Yi Li Factory
- Dyeing - Xi Zhi Factory

CNP Spinners
Yarn (Wool)



Embroidary - AarBe Factory

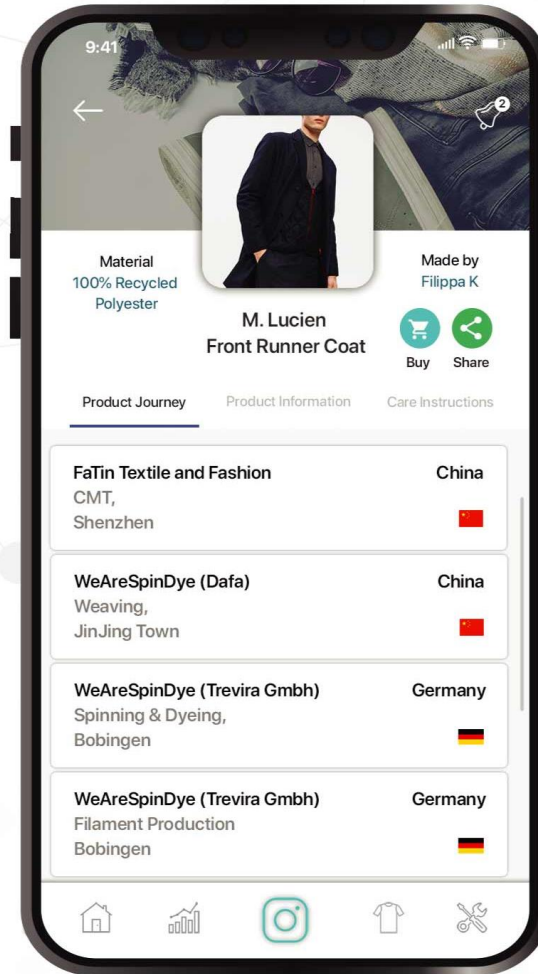
Good Wool Farms
Fiber (Wool)



Wool fiber production - Good Wool Farms

Prove Material Integrity

Identify Risk/ Non-Compliance in Supply Chain



Retailer/ E-Commerce Engagement



www. trustrace.com



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