



GROENENDIJK

bedrijfskleding | *werkt beter*

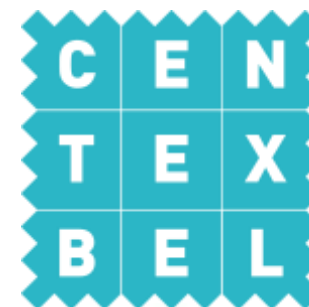


Interreg NWE CircTex - Design for Recycling

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05-06-2023

PARTNERS CIRCTEX





CIRCTEX PRODUCTION PROCES



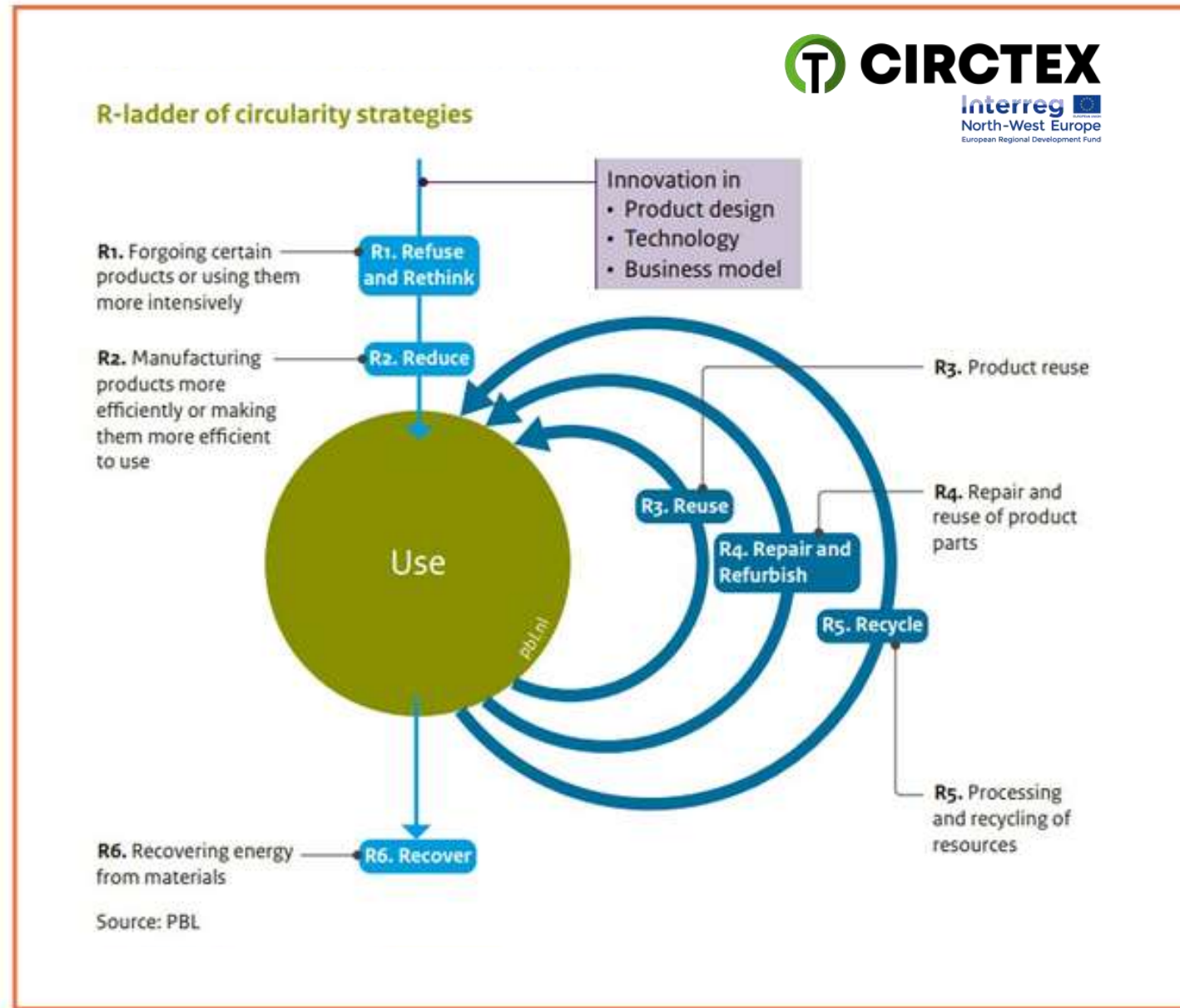
CIRCULAR STRATEGIES

Circular Economy

Upcoming circularity

Rule: More circularity = less raw materials & pressure on the environment

Linear Economy



ECODESIGN

Why?

= Essential for Ecodesign

Life cycle thinking definition

= Consideration of environmental aspects relevant to a product during its entire life cycle.

Life cycle thinking implies:

1. Material acquisition
2. Design and development
3. Manufacturing
4. Delivery and installation
5. Use (including reuse, maintenance, repair, remanufacturing, refurbishing and upgrading)
6. End-of-life treatment
7. Disposals

Design for longevity

- Quality
- Maintenance
- Repairability

Design for efficient material usage

1. Recycled content
2. Sustainable fibres & materials
3. Sustainable production
4. Usage of chemicals

Design for recycling & reuse

- Possibility to recycle according to technologies
- Facilitate dismantling and reuse of certain parts

What?

1. Evaluate product and recycling technique
2. Talk to a recycler for the requirements of recycling
3. Design the product for longevity and recycling
4. Evaluate the design technical, economically and environmentally
5. Return of materials

1. Evaluate product and recycling technique

- (Bio) Chemical recycling
- Thermal mechanical recycling
- Thermal chemical recycling
- Mechanical recycling

- Downcycling or upcycling

Decision for thermal mechanical recycling at Antex. Upcycling, creating a new product.

2. Talk to a recycler for the requirements of recycling

Desired output upcycling from product to product.

Decision for 100% polyester.

- Problem: thermal mechanical recycling
- Solution: chemical recycling

CIRCTEX RECYCLING AT ANTEX



3. Design the product for longevity and recycling

Design proces at Groenendijk Bedrijfskleding

- Hardware -> Zipper
- Wear2go yarn -> disassembly
- Membrane
- Reflection striping
- Sealtapes -> Eco-design



CIRCTEX KLEDING



CIRCTEX PRODUCTION PROCESS



4. Reuse & Disassembly the product for recycling

- Can the product have a second life? = Reuse
 - Disassembly parts to optimize recycling product
- Textile to textile recycling

CIRCTEX DISASSEMBLY AT WEAR2GO



CIRCTEX DEASSEMBLAGE BIJ WEAR2GO



5. Evaluate the design technical, economically and environmentally

- Cost of recycled material compared to virgin material
- Is consumer willing to pay for it?

LCA calculations virgin vs recycled

Wearer test in different companies and pollution areas

PPE and Öko-Tex certification.

Legislation & funding

6 . Return of materials

How? Awareness towards industry and consumers

- QR-code
- RFID code
- Digital product passport

A RFID tag is embedded in the clothing. The disassembler and recycler can read out the product composition for recycling. A consumer has access to the product journey of a garment.

Is it possible to produce 100% circular workwear?

YES!



CIRCTEX TALK



THANK YOU, ON BEHALF OF ALL PARTNERS!



Interreg 
North-West Europe
European Regional Development Fund



MODINT.



DE NOVO
fabrics

