Inspirational study tour to the Netherlands

19 April 2018

ECAP
european clothing action plan

Life
Project supported by LIFE funding

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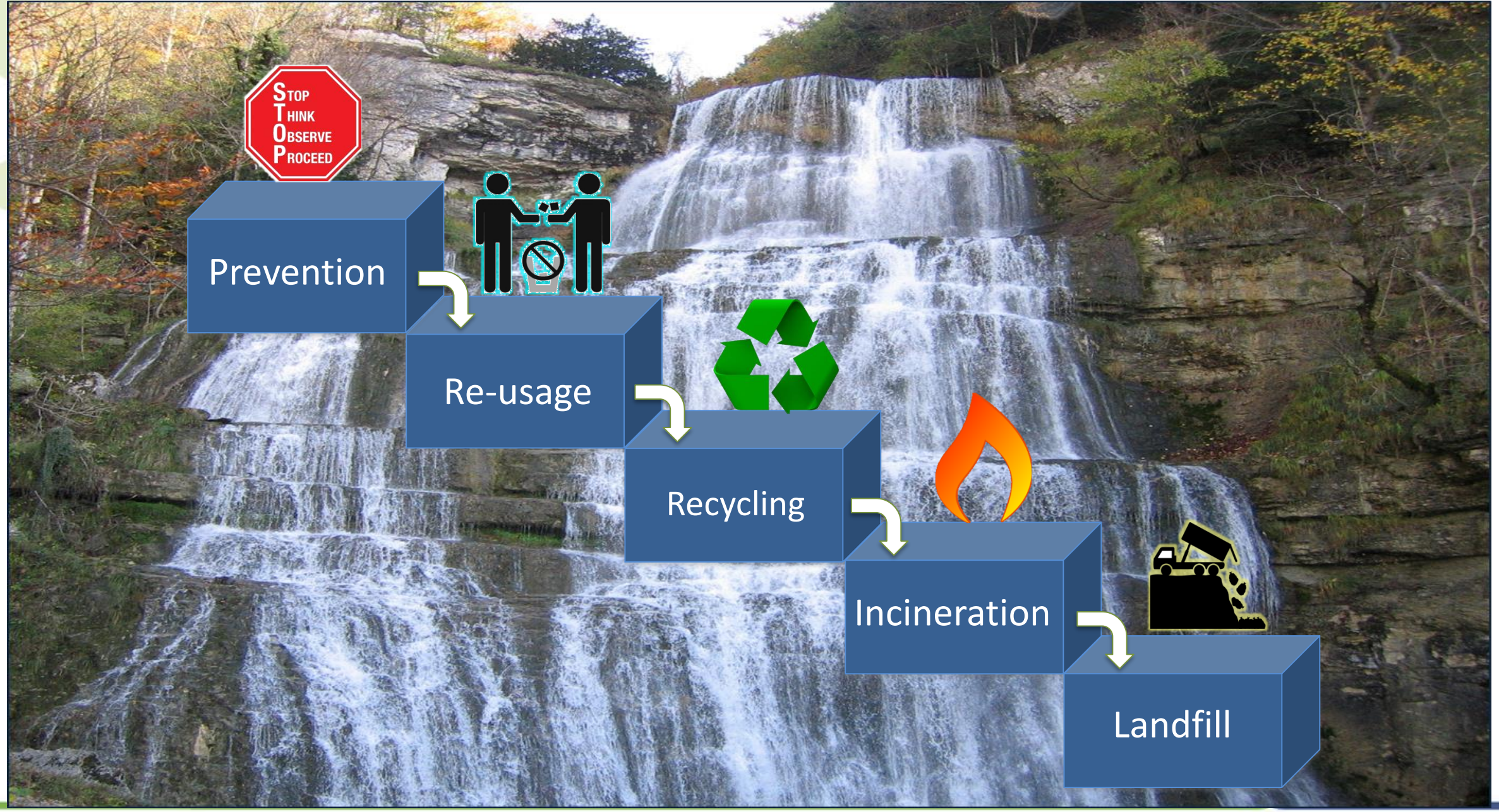

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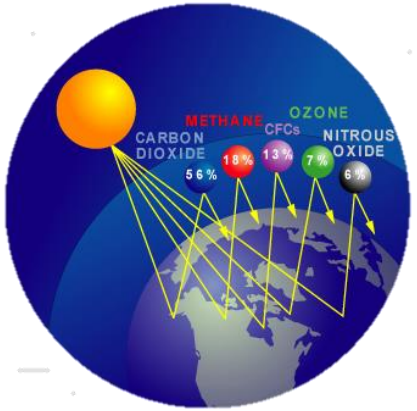
Textiles



Made-By's Environmental Benchmarck for fibres

Class A	Class B	Class C	Class D	Class E	Unclassified
Recycled cotton	Tencel	Hemp	PES	Cotton	Silk
Mech Rec PA	OrganicCotton	Ramie	Poly acryl	Polyamide	Org Wool
Mech Rec PES	Chem Rec PES	PLA	Modal	Cupro Viscose	Leather
Recycled wool	In conv Cotton	Linen		Bamboo Viscose	Elasthane
Organic Hemp				Wool	Acetate
Organic Linen				Viscose	Cashmere Alpaca Mohair Bamboo Linen

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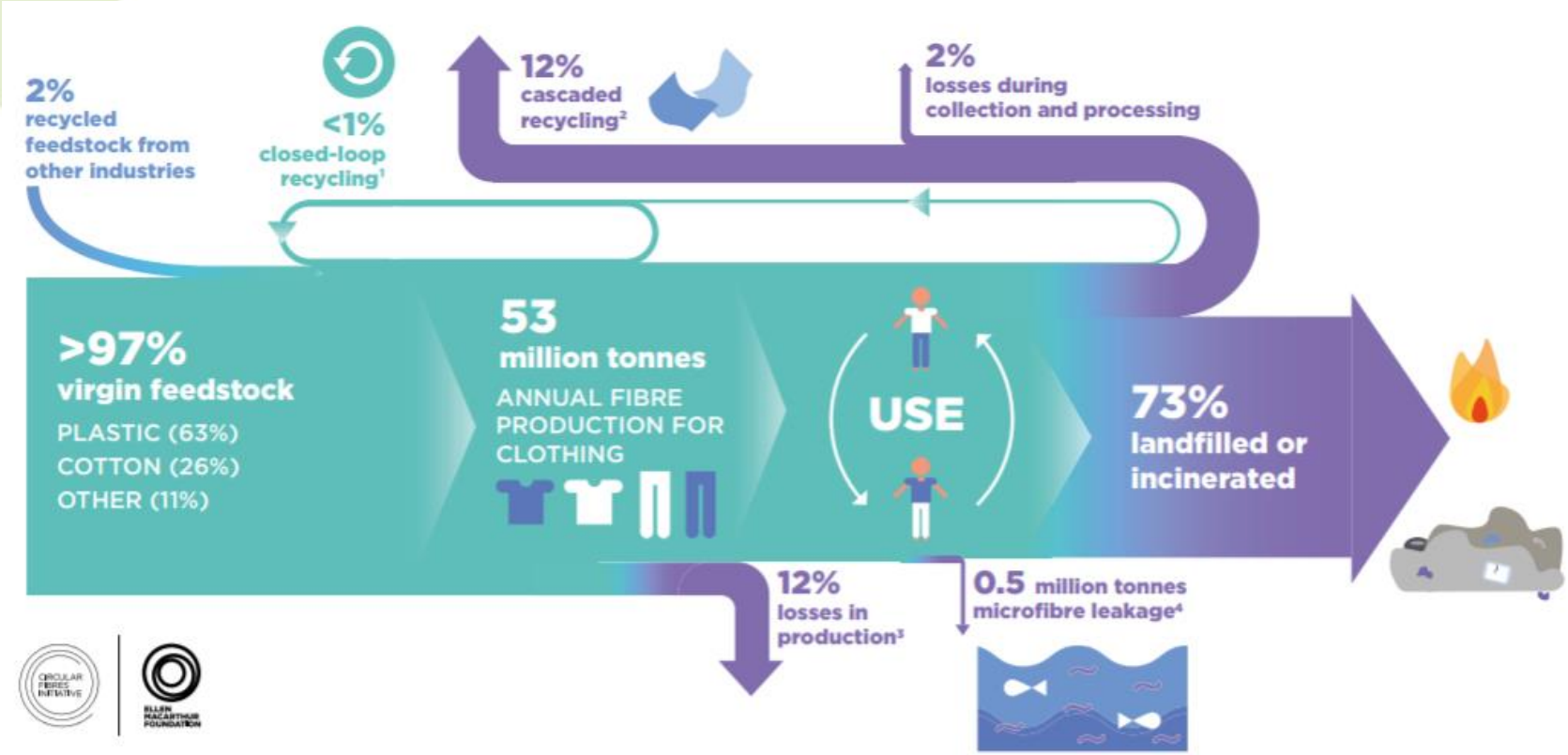
According to the Ellen Mc Arthur Foundation 2017



1 Recycling of clothing into the same or similar quality applications
2 Recycling of clothing into other, lower-value applications such as insulation material, wiping cloths, or mattress stuffing
3 Includes factory offcuts and overstock liquidation
4 Plastic microfibres shed through the washing of all textiles released into the ocean

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Figures and facts

- - The textile industry is the 2.th largest industry in the world
- - 60% of the textiles are produced by the fashion industry
- - The last 15 years the purchase of clothes has doubled, most of all because of the fast fashion industry

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Facts and figures

- - Estimation; in 2030 the selling of clothes will have increased by 63%
  The overstock percentage will rise

- - Worldwide less than 1% of all produced textiles is beiïng high end recycled

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Chances for circular economy in The Netherlands

The report “Opportunities for circular economy in The Netherlands”, research agency TNO, concludes that a more circular economy could;

- result in7.3 billion euros economic savings and benefits for The Netherlands;
- A reduction of 1,7mln. tons of CO2 per year (about 8% of the total Dutch emissions)
- reduction of raw material use by approximately 100,000 tons (a quarter of the total Dutch annual imports);
- The footprint for land and water use in the Netherlands reduces elsewhere in the world

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Why do we need recycling in The Netherlands?

In the Netherlands we have

- an Annual consumption of 400,000 tons of textiles
- <80,000 tonnes (<20%) is collected.
- 40,000 tons recycled and re-wearable clothing.
- 40,000 tons is recycled, mostly abroad, to cloths, blankets, carpet underlay, insulation.
- 320,000 tonnes landfilled or incinerated.

New technologies make more reusability possible.

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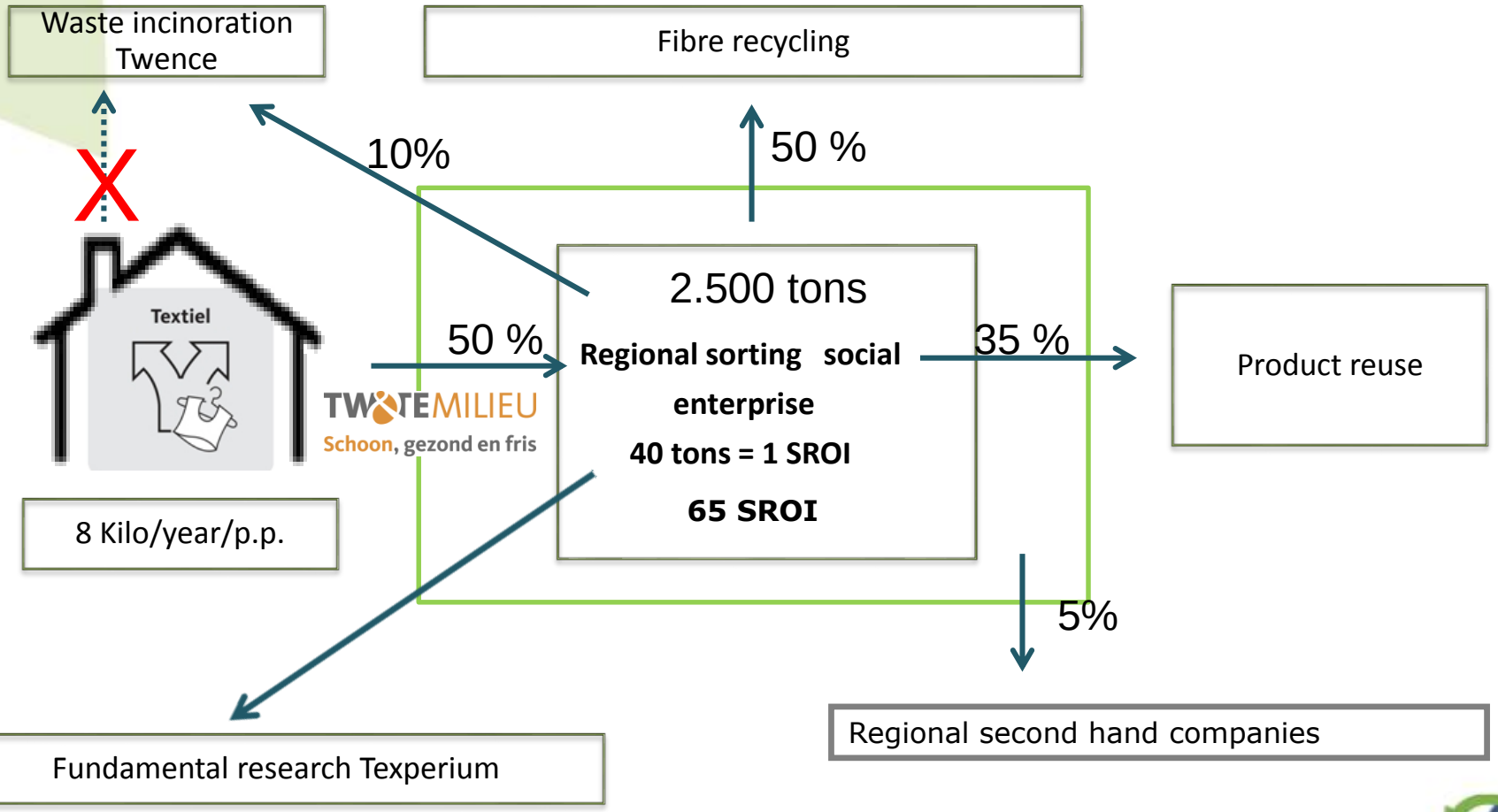
Targets 2020
improved textile collecting in Twente

Twente: 650.000 inhabitants produce abt. 8 kg textile waste /year, = 5.200 tons of textile waste/year



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Transparency, good working conditions, transition towards a circular economy

- Knowledge Center of high-end textile recycling , product development and implementation
- Bringing together stakeholders in the textile chain and thus increasing capacity
- By joining forces, product development, procurement and possibly valorization of textile waste, extra employment can be created
- Textile Recycling is within the next 5 years " business as usual"
- Quality and price should mostly correspond to a product, consisting of new raw materials

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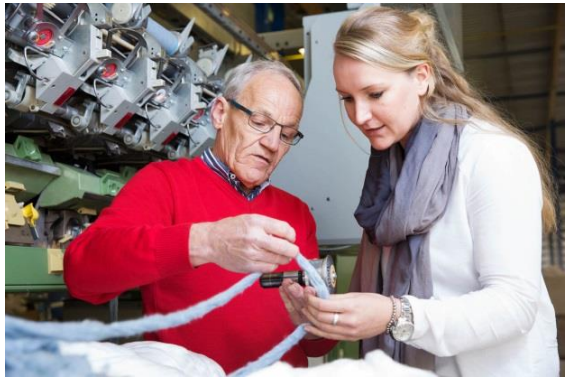
Our Texperium Technicum in Haaksbergen (NL)







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The pilot plant for high-end textile recycling is using

2100 PV Solar panels - delivery of 550.000 kWh/year

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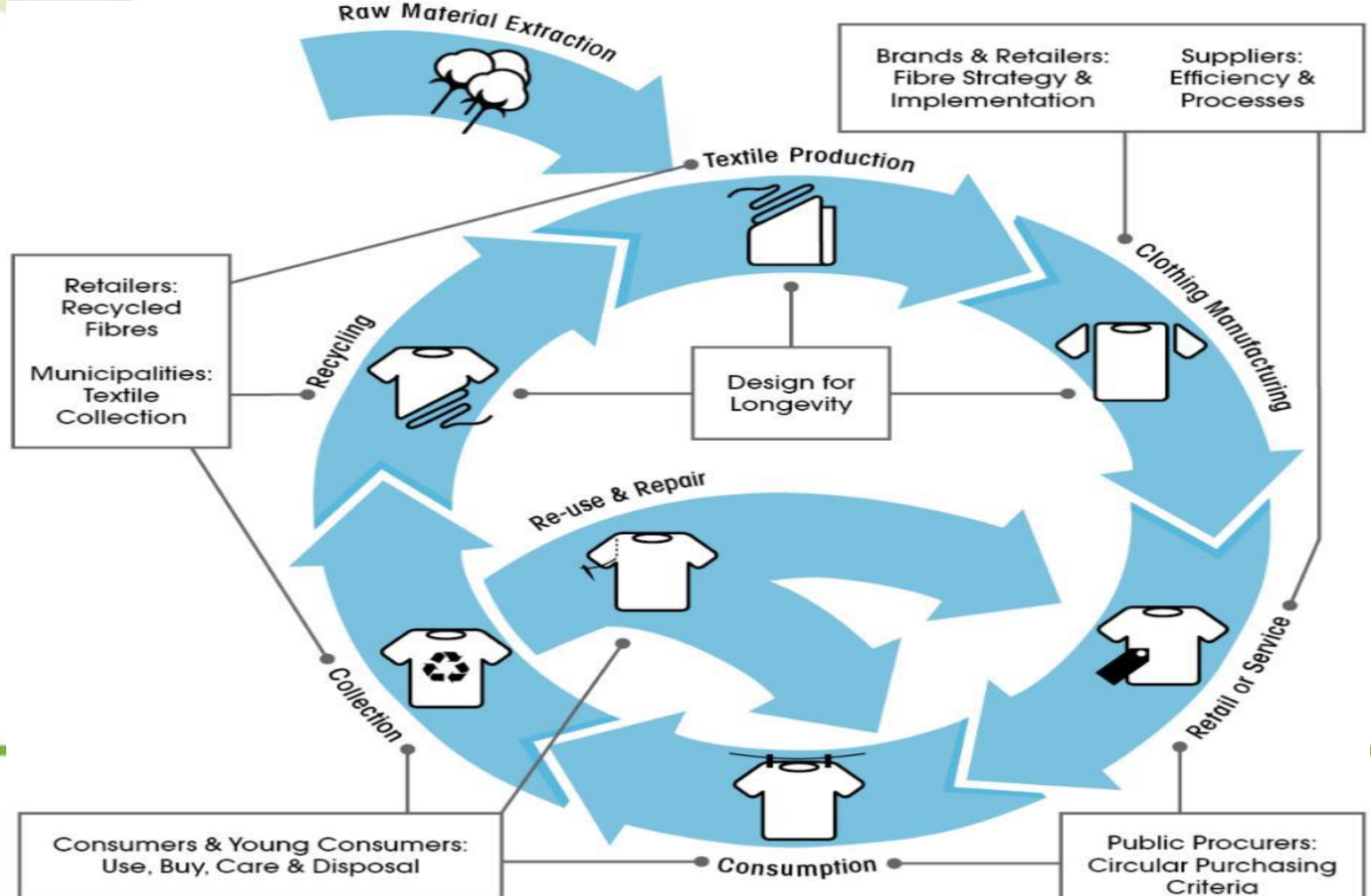
Where ECAP meets Texperium

- Cutting the environmental impact of clothing across the supply chain.
- Generating value for business through collaboration, measuring and sharing best practice.



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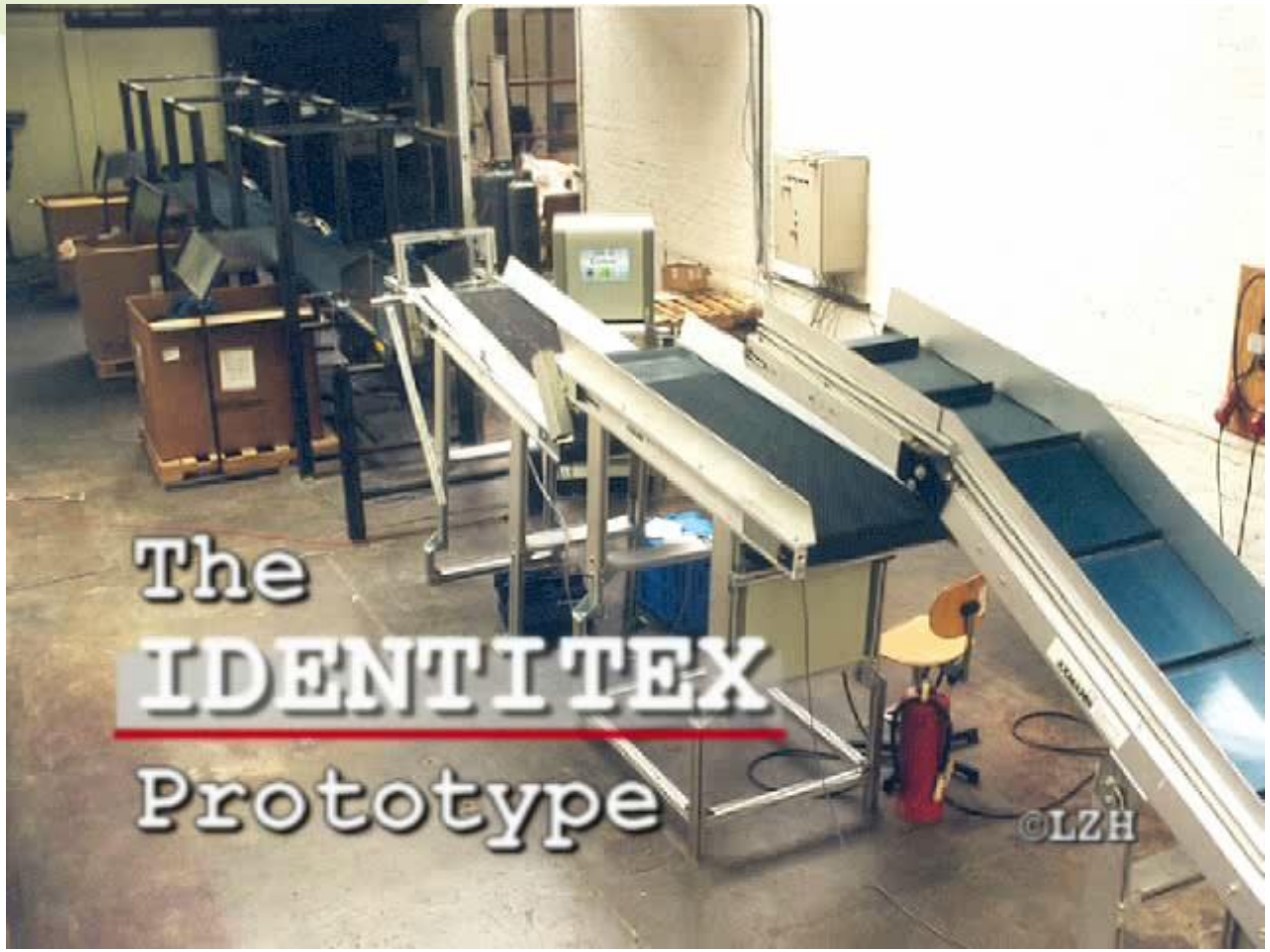
Identitex sorting as a first step into Textille recycling.



- The first pilot line developed in 2001
- In association with :
  LZH, TNO, MuT and Klifman.

Goals :

1. Automatic sorting on fiber composition and color
2. At high speed of about 10 m/s
3. Using Near Infra Red technic
4. Modular construction on request

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Dutch KPU winns international price

Newsitem| 18-10-2017 | 11:26

Ministerie van Defensie

The KPU company got the award for the ecological footprint, not the best price

Last night The Dutch KPU (buying department of the Dutch Defence), has won the Procura Award in Tallinn Estland. The Dutch KPU company bought towels (100.000 pieces), small washing towels (25.000 pieces) and workwear (53.000 color green pieces).

Savings

Estimated savings for the buying of the towels:

•167 milion liters of water during the production proces (comparable with the water usage of 1600 households on a yearly base.

•49.200 kg CO2; (comparable with 25 roundtrips from Amsterdam to Singapore);

•16.800 MJ energie.

Consortium partners for the development of the towels :

van scherpenzeel • zeker van waarde

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ESG EUROPEAN SPINNING GROUP

Clarysse Bath & Kitchen

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Pilot ROVK gerecycled content in workwear and towels

Organisation Ministy of Defence

40 % post-consumer jeans

PRODUCT:	Towels and Face towels	FOR:	KPU-BEDRIJF / AFDELING KETENMANAGEMENT		27-1-2016
ENVIRONMENTAL SAVING		CO2 (kg/kg)	ENERGY (MJ/kg)	WATER (L/kg)	REFERENCE PRODUCT
Per 1 kg		1,6372 (46,51 %)	-0,56 (-1,09%)	5559,2 (79,76 %)	100 % katoen (China)
Per 1 kg	bij vervezeling zonne-Energie	1,7452 (49,58 %)	1,12 (2,19 %)	5559,2 (79,76 %)	100 % katoen (China)

19 % post-consumer jeans

PRODUCT:	OVERALL	FOR:	KPU-BEDRIJF / AFDELING KETENMANAGEMENT		27-1-2016
ENVIRONMENTAL SAVING		CO2 (kg/kg)	ENERGY (MJ/kg)	WATER (L/kg)	REFERENCE PRODUCT
Per 1 kg		0,65012 (19,10%)	4,818 (7,44%)	2091,5 (46,16%)	65 % Cotton (China) 35 % Polyester
Per 1 kg	vervezeling zonne-Energie	0,66875 (19,58%)	9,785 (15,11%)	2091,5 (46,16%)	65 % Cotton (China) 35 % Polyester

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van scherpenzeel • zeker van waarde

ESG EUROPEAN SPINNING GROUP

Clarysse Bath & Kitchen

TENCATE materials that make a difference

Van Puijenbroek Textiel

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Discarded KLM cabin crewmembers uniform

Air France-KLM demonstrated in guidance of Texperium, a range of high-quality products, created out of the old KLM cabin crewmembers uniforms.

Old KLM lady's **uniforms are recycled into fibres, new ideas, product developement** into new designs.

- 90 ton uniforms
- 4700 ton CO2 savings
- 1 mln. m³ natural gas eq.

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HNST.be the most sustainable jeans

- “For the past 15 years innovation in the fashion industry could be summarized in three words: faster, cheaper and more. We believe that real innovation is all about a positive impact and a completely different way of thinking. It all starts with: the resources. Why don’t we use what we already have in our closet?”—Tom Duhoux

56 percent gerecycled denim (coming from over 6.000 collected jeans), 23 percent cotton and 21 percent of Tencel,

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BIO2HIGHTEX

The name of our project “Bio2HighTex” tells something about the usage of biobased raw materials, used to develop hightec components and products.
In combination with reused fibers, it decreases CO2 polution, water, and keeps focus to durable production of innovative textiles.

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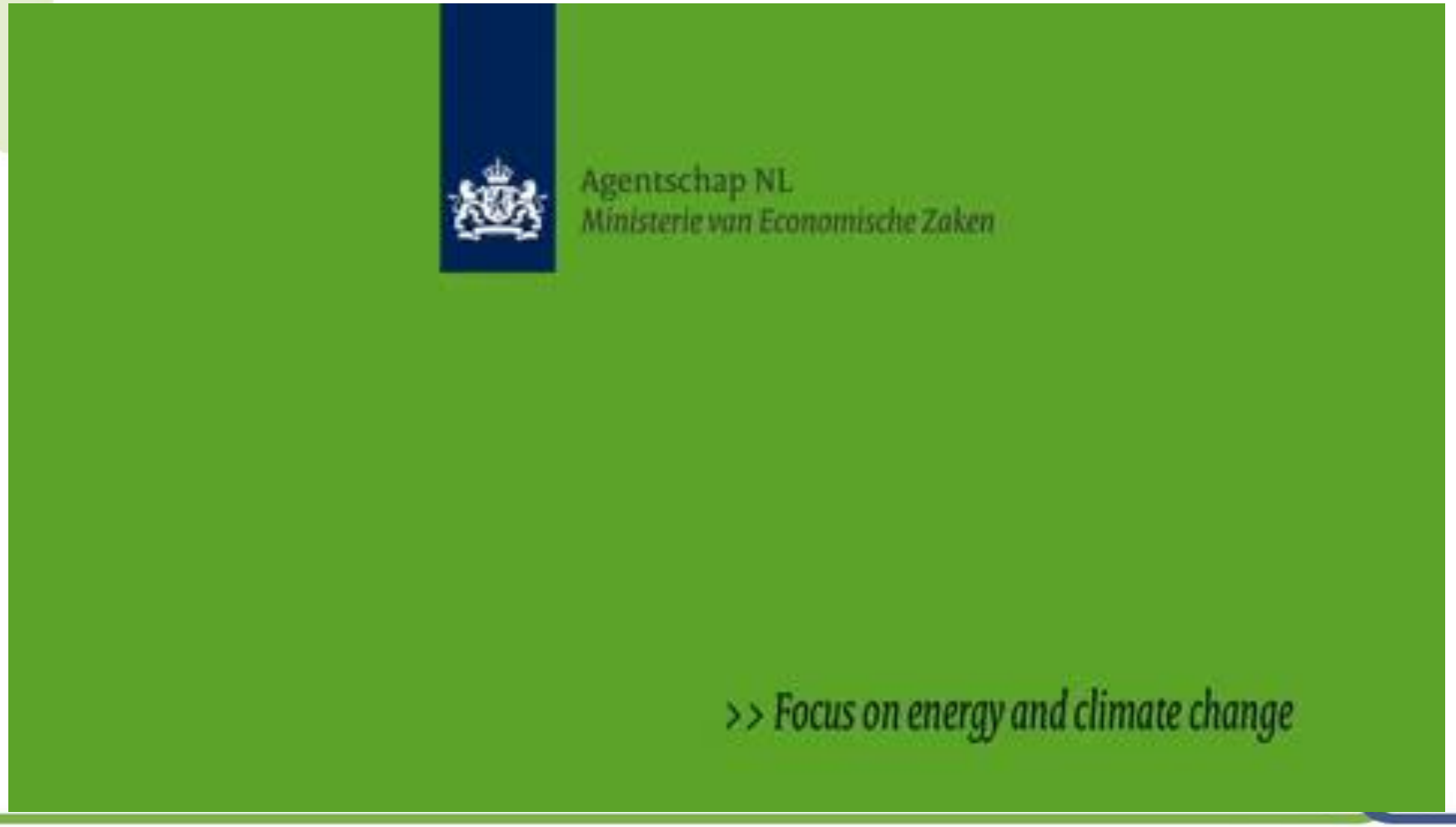
Case Air France - KLM



http://www.youtube.com/watch?v=r4RZwQxNz8E

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Innovation is our strategy towards 2020

ROC van Twente

Homefashion GROUP
Nederlandse holding voor internationale woonretailformats
KWANTUM woon DECOWIZE

SAXION Hogescholen

Gemeente Almelo

Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

oost nv

de berkel
finest professional clothing

innovatieplatform twente

beddinghouse
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Van Puijenbroek Textiel
Dutch textile solutions since 1865

Universiteit Twente
de ondernemende universiteit

REMO
THE RECYCLE MOVEMENT

WAGENINGEN
UNIVERSITY & RESEARCH

Clarysse
Bath & Kitchen

van scherpenzeel • zeker van waarde

TENCATE
materials that make a difference

Kennispark Twente
Innovate & Accelerate

Greenhouse
Incubator for cleantech startups

INSIDE STEXFIBERS

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PANTANOVA
Licenced to Grow

TPRC
developing a world of composites

Hochschule Niederrhein
University of Applied Sciences

European Union
OPoost
operationeel programma oost
European Regional Development Fund

NUON

SUZLON
POWERING A GREENER TOMORROW

ALTEX
Qualität aus jeder Faser

ArtEZ & Innovatie

OPEN INNOVATION CENTER
ADVANCED MATERIALS

KLM
Royal Dutch Airlines

Frankenhuis
creatief & verrassend helder

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Links :

- www.texperium.eu
- www.youtube.com/watch?v=r4RZwQxNz8E&feature=related (Textiel opnieuw.)
- www.duurzaambedrijfsleven.nl/recycling/15471/duurzaam-inkopen-100000-gerecyclede-handdoeken-voor-defensie
- www.hrvst.be en http://m.weekend.knack.be/lifestyle/mode/antwerpenaar-gaat-uitdaging-aan-om-meest-duurzame-jeans-ter-wereld-te-maken/article-normal-897863.html
- www.google.nl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwjrgZWirbjWAhVPIlAKHU-IDJ0QFggsMAE&url=http%3A%2F%2Ffuturemakers.artez.nl%2Fproject%2Fgoing-eco-going-dutch%2F&usg=AFQjCNEYB0bNEjldkNVO9Y41b5tqelEDAQ
  (Going Eco Going Dutch)

Vragen :

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