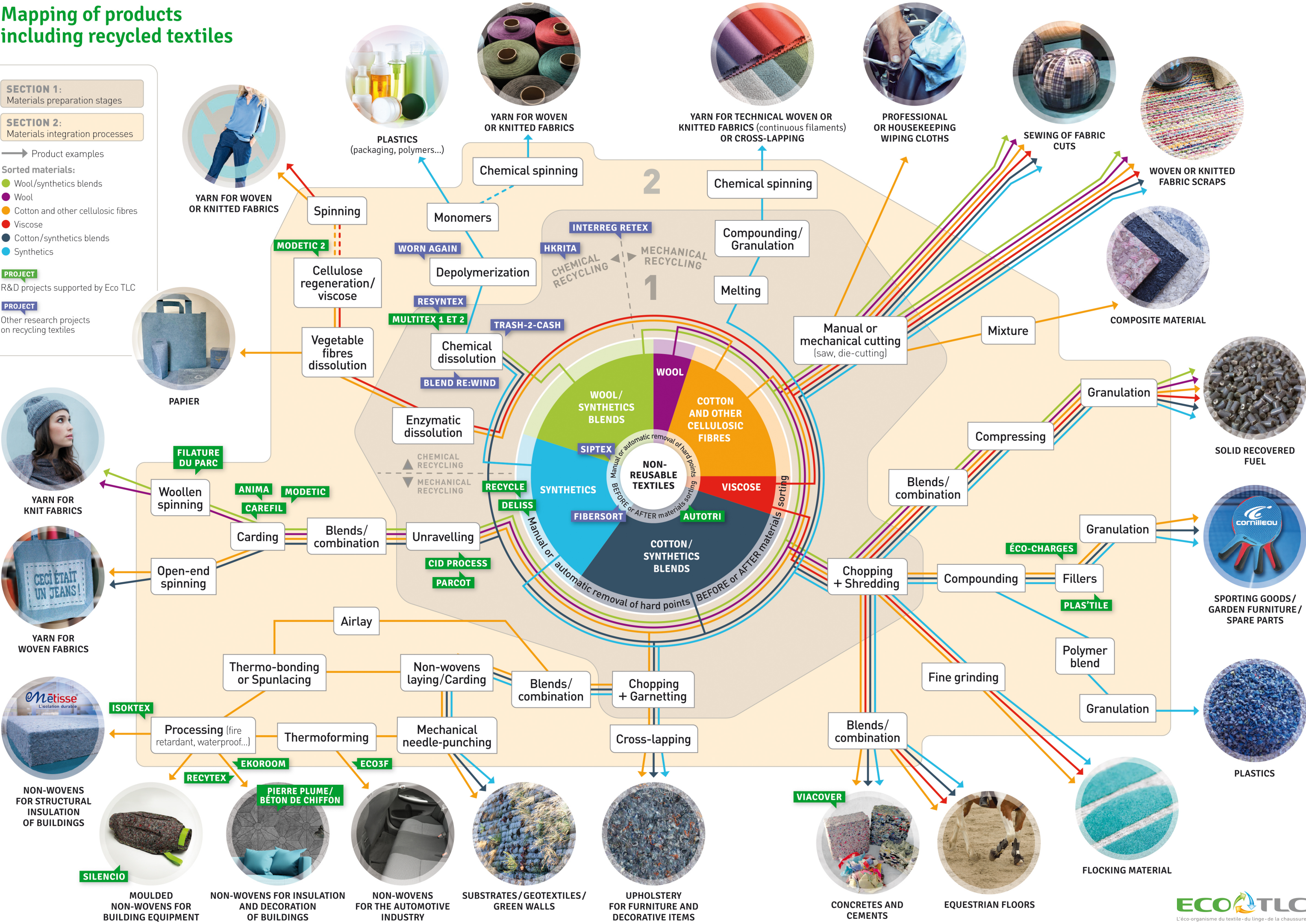


Mapping of products including recycled textiles

- SECTION 1:  
Materials preparation stages
- SECTION 2:  
Materials integration processes

- Product examples
- Sorted materials:
- Wool/synthetics blends
  - Wool
  - Cotton and other cellulosic fibres
  - Viscose
  - Cotton/synthetics blends
  - Synthetics
- PROJECT  
R&D projects supported by Eco TLC
- PROJECT  
Other research projects on recycling textiles





# Focus on a selection of interesting research projects into textiles recycling

## → BLEND RE:WIND / MISTRA FUTURE FASHION – SWEDEN

Develop a new chemical recycling process that recycles polyester/cotton fibres blends.

**Materials:** *cotton and polyester blends*

<http://mistrafuturefashion.com/rewind-recycles-cotton-polyester/>

## → FIBERSORT / CIRCLE ECONOMY – THE NETHERLANDS

Create a new sorting technology that enables to identify and separate textiles based on fibre type.

**Materials:** *all*

[www.circle-economy.com/case/fibersort](http://www.circle-economy.com/case/fibersort)

## → HKRITA – HONG KONG

Develop practical solutions to recycle blended textiles in closed loop.

Two directions are identified: biological and chemical recycling.

**Materials:** *cotton and polyester blends*

[www.hkrita.com/newsletter/issue41/making.htm](http://www.hkrita.com/newsletter/issue41/making.htm)

## → INTERREG RETEX – FRANCE / BELGIUM

Develop new collaborations & business models and share knowledge to create added value. Focus on eco-design and textile recycling. Key goal : reduce textile waste and enhance innovation.

**Materials:** *all*

[www.dogetheretex.eu](http://www.dogetheretex.eu)

## → RESYNTEX / PROSPEX INSTITUTE – BELGIUM

Create a new circular economy concept for the textile and chemical industries to produce secondary raw materials from unwearable textile waste.

**Materials:** *all*

[www.resyntex.eu](http://www.resyntex.eu)

## → SIPTEX / IVL – SWEDEN

Develop an automatic sorting process by using optical sensors.

**Materials:** *all*

<https://www.ivl.se/english/startpage.html>  
Top menu "Pressroom" > Press releases > 2017-03-28



## → TRASH-2-CASH – SWEDEN

Create new regenerated fibres from pre-consumer and post-consumer waste thanks to chemical recycling.

**Materials:** *cellulose and polyester*

[www.trash2cashproject.eu/](http://www.trash2cashproject.eu/)

## → WORN AGAIN – UNITED KINGDOM

Develop a textile to textile recycling technology that can separate and recapture polyester (PET) and cotton from used clothing.

**Materials:** *cotton, polyester, cotton and polyester blends*

<http://wornagain.co.uk/>

# Glossary

- **Airlay:** Pneumatic method for laying a non-woven.
- **Carding:** Linear arrangement of textile fibres to produce a web.
- **Cellulosic fibres:**
  - Natural: cotton, linen, hemp...
  - Artificial: viscose, modal, polynosic, Tencel®, Lyocell®.
- **Chemical dissolution:** Chemical recycling. Re-producing synthetic or artificial fibres through reclamation of the raw materials, which are again re-polymerized.
- **Chemical spinning:** Extrusion of continuous filaments.
- **Chopping:** Process of successive cutting up of textiles to obtain scraps.
- **Compounding:** Process involving forming of granules based on formulation (polymer, additives, fillers) for the plastics processing sector.
- **Compressing:** Process for forming coarse granules.
- **Cross-lapping:** Production of a web through carding of fibres.
- **Depolymerization:** Process of converting a polymer into a monomer or a mixture of monomers.

- **Enzymatic dissolution:**
  - Recycling of fermentable organic products characterized by their biodegradable nature; can lead to composting and methanation.
  - Recycling textiles by treating them with enzymes and decomposition of polymers, allowing a textile filament to be recreated.
- **Fillers:** Additives in the form of pulp, powders or textile fibres, used to obtain specific properties in any type of polymer (fibres, composites).
- **Fine grinding:** Further processing of scraps or shredded material into textile pulp.
- **Flocking:** A coating process in which short fibres obtained from shredding textiles are applied.
- **Garnetting:** Mechanical procedure involving successive chopping and drawing of textiles in order to recover the fibres.
- **Granulation:** Process of transforming the material into granules.
- **Materials sorting:** Operation in which used textiles and/or their components are separated, enabling them to be recycled in order to obtain new products or materials.
- **Needle-punching:** A method of mechanical bonding for non-wovens.

- **Non-wovens:** Production of a web of fibres.
- **Open-end spinning:** Subsequent processes for transforming textile fibres into yarn: carding, sliver, yarn manufactured in a turbine machine.
- **Removal of hard points:** Disassembling of clothes in order to eliminate hard points (buttons, rivets, zips, patches etc.).
- **Shredding:** Process corresponding to coarse chopping, producing fibres.
- **Synthetics:** Fibres obtained through polymerization or polycondensation of petroleum-based monomers.
- **Thermo-bonding:** Production of a web of non-wovens bonded using thermofusible additives (fibres, powders).
- **Thermoforming:** Forming of plastic products.
- **Unravelling:** Mechanical procedure involving successive drawing of textiles to recover the fibres.
- **Viscose:** Cellulosic fibre obtained from wood or other vegetal pulp.
- **Woollen spinning:** Subsequent processes for transforming textile fibres into yarn: carding, production of rovings then yarn.

