SUMMARY

Textile recycling technologies

Developed by:

MATERIALLY

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Introduction

Textile fiber recycling may be performed via mechanical or chemical recycling, the latter being less commonly used since it still represents a scenario under development: available solutions may require further perfecting, or not be economically convenient, or suitable, yet, for XL volumes, as the market may require.

The OER aims are to provide students knowledge about advanced **textile recycling technologies**.

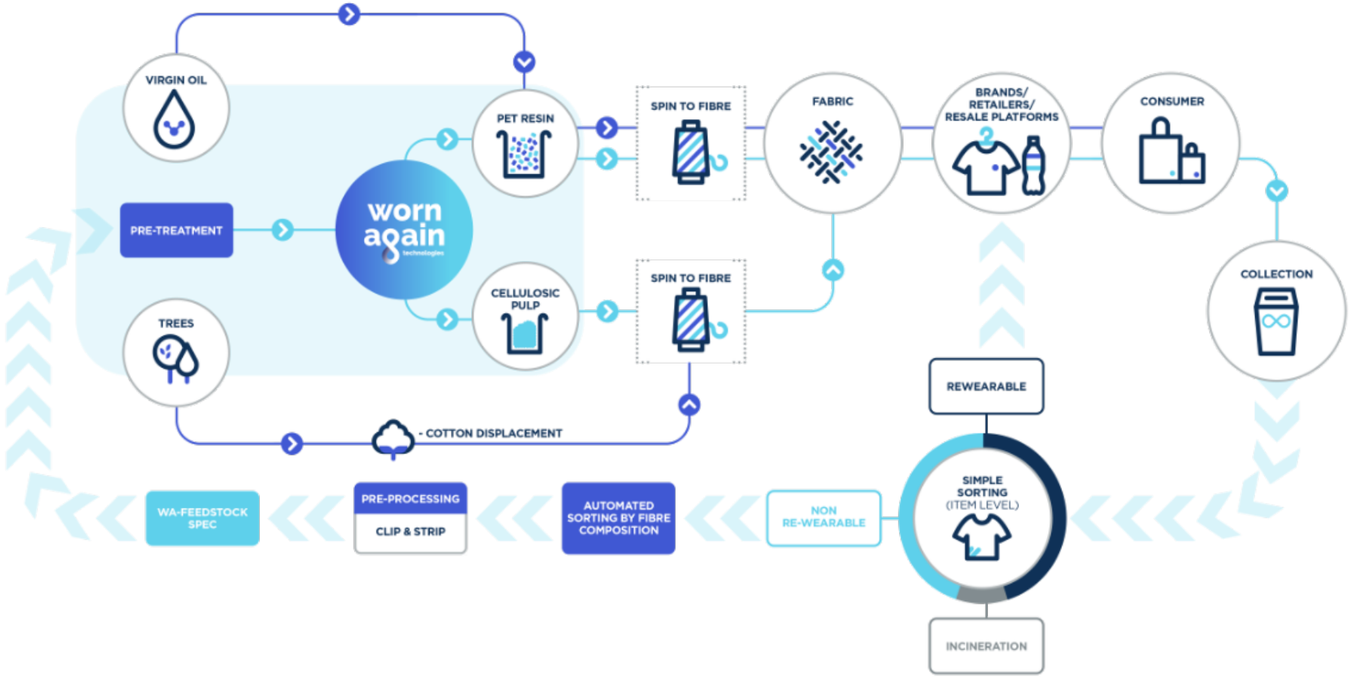
Competence

1. Skills
Advanced knowledge of the English language including textile terminology.

2. Competences
Understanding the difference of mechanical and chemical textile recycling approaches. Awarness of the implications and opportunities of the different recycling technologies.

1. Worn Again Technologies

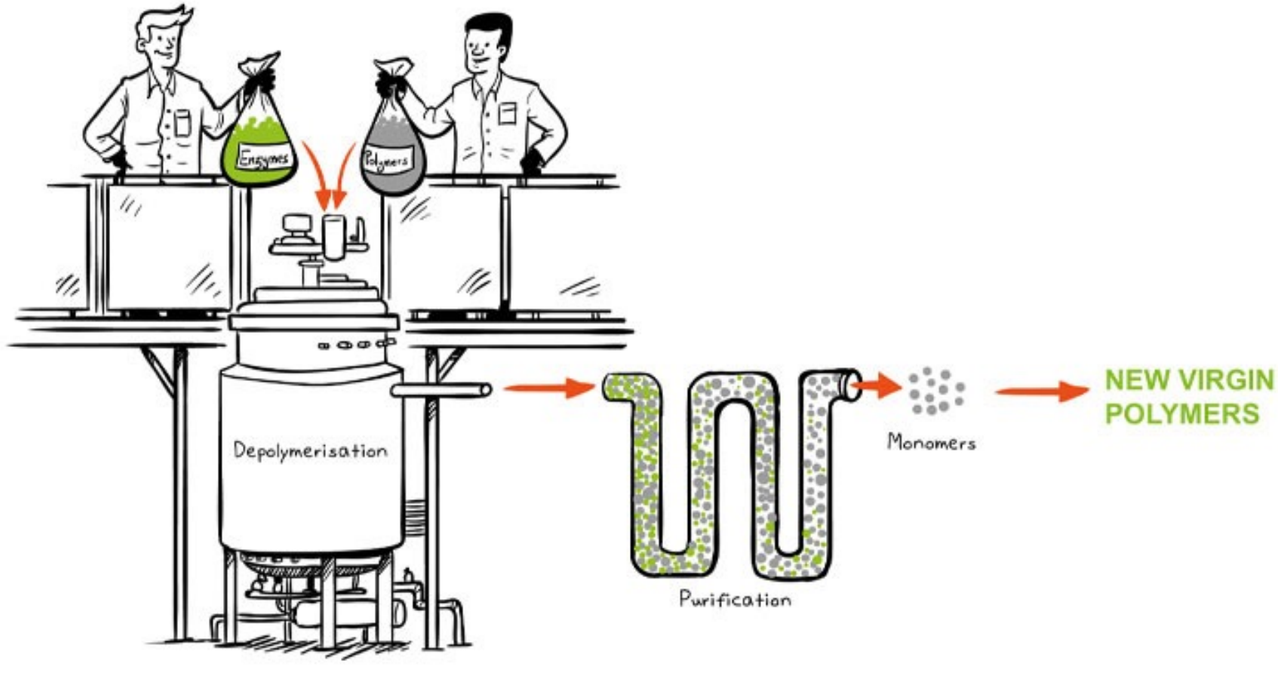
Worn Again Technologies advanced chemical recycling process turns non-reusable products into virgin equivalent raw materials ready to be put back into production supply chains. .



This advanced recycling technology is able to strip out dyes and finishes and separate, decontaminate and extract polyester and cellulose (from cotton) from non-reusable textiles and polyester bottles and packaging to produce dual PET and cellulose outputs.

2. Carbios

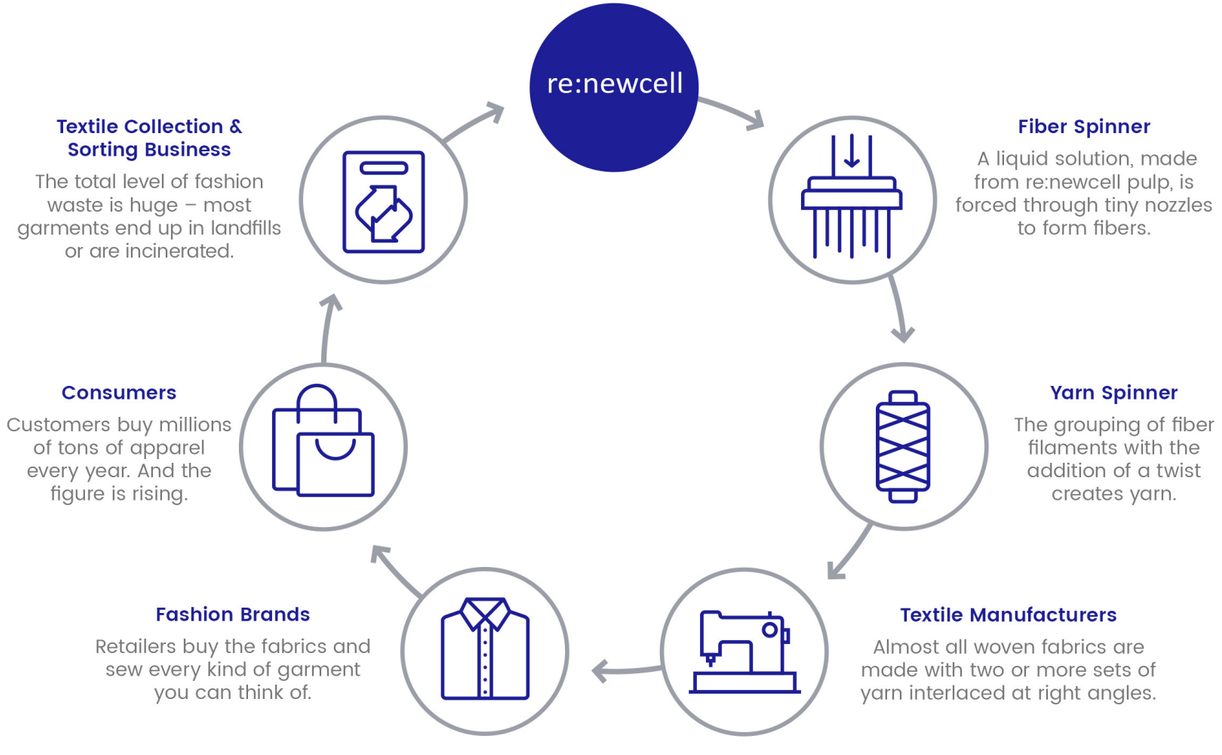
Carbios Biorecycling is an enzyme-based recycling process based on the use of enzymes, which can be considered “highly specific biological tools”.



This recycling bioprocess for plastics enables to recycle plastics to infinity by returning to the original monomers which can be used in all applications in which the original material was used, as well as recover the same level of performance displayed by the original materials in the recycled materials

3. Circulose®

Circulose® is a patented recycling technology by Re:newcell AB that transforms high cellulosic waste into pure, natural dissolving pulp, called Circulose® pulp.



This recycling system uses less water and chemicals and emits less CO2 than existing conventional processes used to manufacture clothing fibers.

4. Osomtex®

Osomtex® by Upcycletex LLC is a patent-pending closed-loop manufacturing system for apparel that repurposes mixed discarded post-consumer and post-industrial textile products.

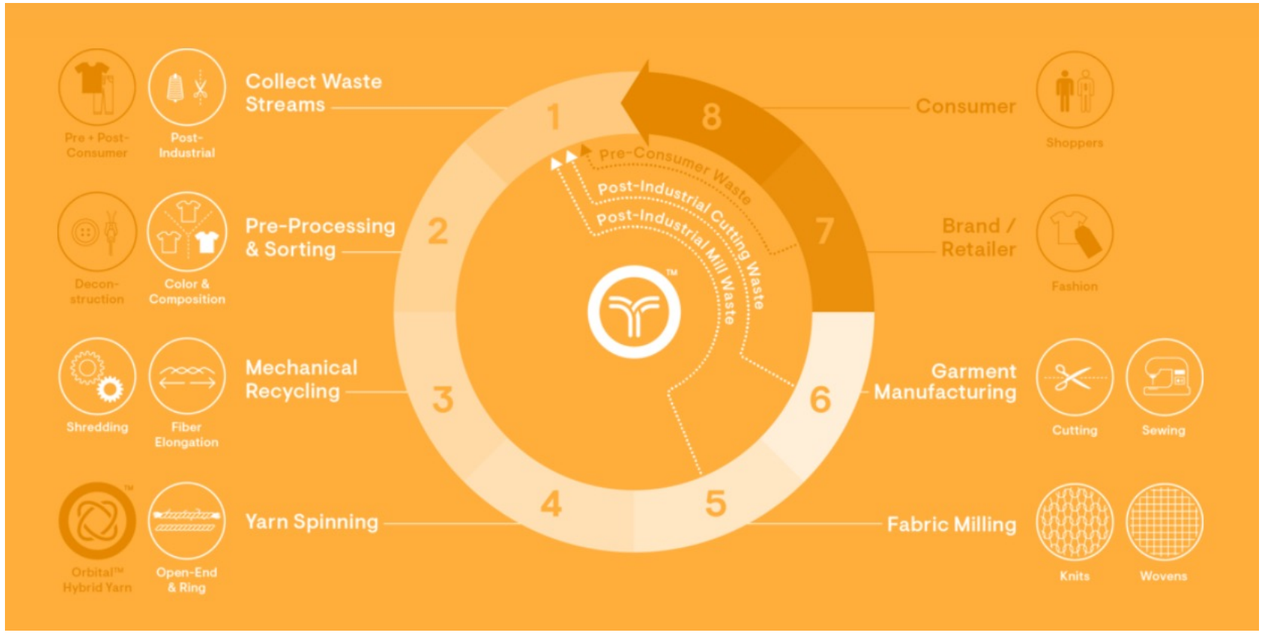
WOVEN STRUCTURES

PLAIN WEAVE | FLEECE | BLUE CIRCULAR KNIT | GRAY CIRCULAR KNIT | TWILL

The resulting OSOMTEX® materials are upcycled yarns and fabrics composed of 70% post-consumer discarded clothing (average of 68% polyester, 27% cotton, and 5% other fabrics) and 30% polyester (or recycled polyester).

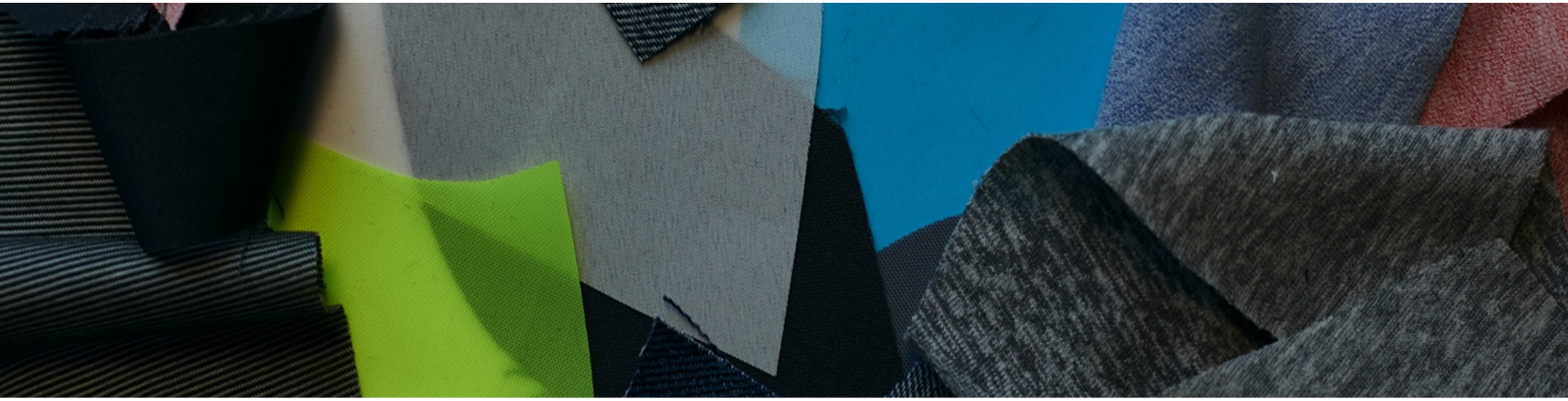
5. Texloop™

Texloop™ by Circular Systems is a processing system that converts pre- and post-consumer 100% synthetic and synthetic blend textile waste into recycled fiber, yarns, and fabrics.



The technology is capable of managing complex blends, including stretch fabrics which are typically different to handle with conventional techniques, and fabrics featuring recycled polyester.

This was a summary of an open educational resource. Please visit http://destexproject.eu/ to see the full amount of intellectual outputs of the project.



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