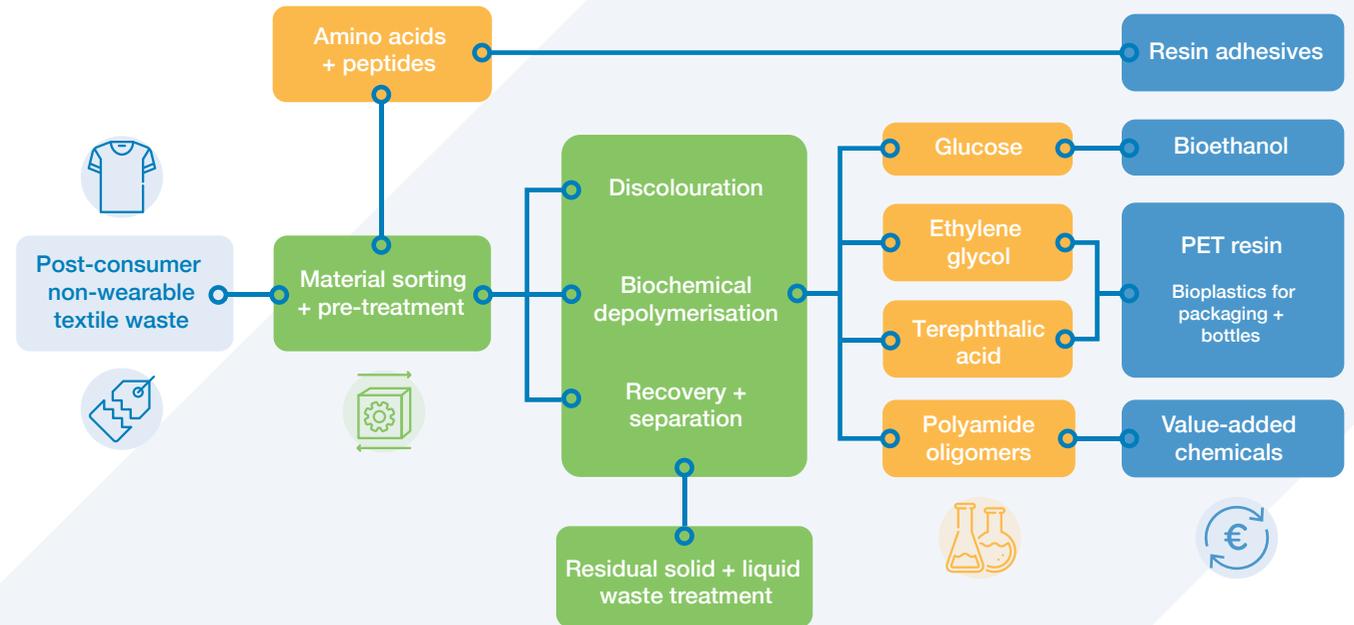
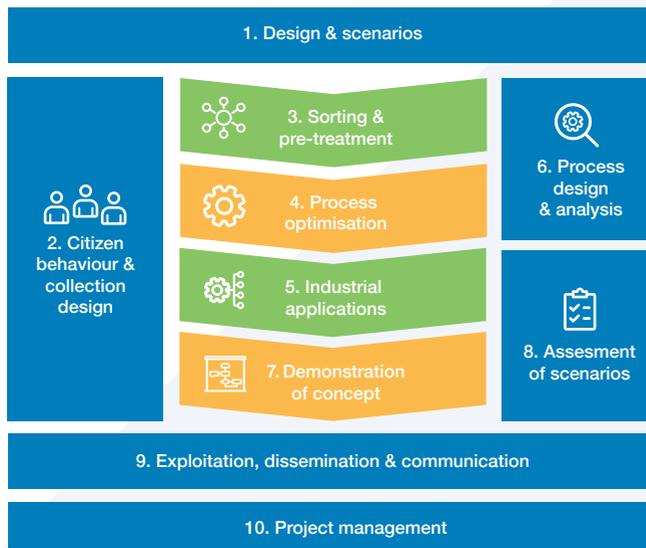


Through an innovative recycling approach and a synthesis of expertise, RESYNTEX will transform non-wearable textile waste into secondary raw materials. New and integrated processing technologies will increase resource efficiency while reducing the environmental impact of end-products by replacing virgin material feedstock.

OBJECTIVES

1. Create a **strategic design** for a complete value chain from textile waste collection to new feedstock for chemicals and industry
2. Improve **collection approaches** while increasing **social involvement** and **public awareness** of textile waste
3. Enable **traceability and credibility of waste processing** using data aggregation for life cycle analysis
4. Develop **innovative business models** for the chemical and textile industries
5. Demonstrate a complete **reprocessing line** for basic textile components

WORK PACKAGES



WHY?

- Help industry to **reduce** environmental impact
- **Create** new chemical feedstock and state-of-the-art processes
- **Address** public demand for more sustainable products
- **Increase** public awareness and enable better recycling
- **Inform** governing bodies and policymakers on circular economy

NEW TECHNOLOGY AND PROCESSES

Using industrial symbiosis, RESYNTEX will utilise post-consumer textile materials in pure and blended form to produce chemical feedstock through innovative chemical and biochemical processes.

CREATING VALUE

RESYNTEX looks to replace:

- **Ammonia** with value-added chemicals based on polyamide oligomers of textile origin
- **Phenol-formaldehyde** with protein-based components in adhesives
- **Petrochemicals** for packaging with recycled terephthalic acid recovered from polyester
- Fossil-based transportation fuels with **bio-based ethanol**

RESYNTEX SUPPORTS SPIRE'S KEY ACTIONS

- **Optimal valorisation of waste, residue streams and recycled end-of-life materials**, such as non-reusable waste textiles
- Optimal and integrated **re-use of water**
- **Energy savings** via resource management concepts



BUILDING ON EXPERIENCE

Project partners include industrial **associations, businesses, SMEs and research institutes** working together as an effective model for the whole value chain.

USING EXISTING RESOURCES

A report by Oakdene Hollins demonstrates how RESYNTAX could help consume residual textile waste streams produced by EU Member States. This share of waste would otherwise be incinerated or landfilled.

Waste stream	Total residual waste (million tonnes)	Availability to RESYNTAX	Top 3 Member States
Clothing: in sorters' residuals	0,08	High	Germany, UK, Belgium
Clothing: in municipal solid waste	5,80	Low	Germany, Poland, Italy
Carpets	1,60	Low	-
Matresses	0,30	Medium	Poland, UK, Germany
Furniture	0,40	Low	-
Uniforms	0,08	Medium	Germany, UK, France
End-of-life vehicles	0,19	Low	UK, France, Italy
Manufacturing	0,90	Low	Italy, Germany, Spain
Total:	9,35		

Estimates based on the research contained in the main body of the report by Oakdene Hollins titled, 'Textile Recycling Market Analysis'

RESYNTAX has been cited by the European Commission as an innovative step towards textile recycling and its Circular Economy Action Plan. The project has been referenced in the Greenpeace report 'Fashion at the crossroads' and the Ellen MacArthur Foundations' Circular Fibres Initiative.

ABOUT THE PROJECT

Start date: 1 June 2015

Duration: 42 months

Budget: €11 million

Project coordinators: SOEX, IOS

Dissemination and communication:

Sustainability Consult

CONTACT US

www.resyntex.eu

info@resyntex.com

@RESYNTAX

PARTNERS

ARKEMA

ABOUT
GOODS

biochemtex

BOKU

CHIMAR
Bioinspired Innovation

cefic

DETTIN S.p.A.

EURATEX
UNICU

IOS
Institute for Environmental
Innovation and Research

imec

Metropolitan
University

National Technical
University of Athens

Quantis

PROSPER

SOEX

SUSTAINABILITY
CONSULT

University of Maribor
Faculty of Mechanical Engineering

tekstina

V.A.L.A.B.R.O.
VALABRO
RESEARCH



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A NEW CIRCULAR ECONOMY CONCEPT

From textile waste towards secondary raw materials



RESYNTAX