

WP T2 INNOVATION ON TEXTILE WASTE MANAGEMENT

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Working Progress Report

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(S!T - Germany)



CONTENT

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ENTeR – Expert Network on Textile Recycling

ENTeR works in five central European countries that are involved in the textile business, to promote innovative solutions for waste management that will result in a circular economy approach to making textiles.

The project will help to accelerate collaboration among the involved textile territories, promoting a joint offer of innovative services by the main local research centres and business associations (“virtual centre”), involving also public stakeholders in defining a strategic agenda and related action plan, in order to link and drive the circular economy consideration and strategic actions.

The approach of the proposal and the cooperation between the partners are oriented to the management and optimization of waste, in a Life Cycle Design (or Ecodesign) perspective



CE1136 - Expert Network on Textile

October/December 2018

Dissemination M3P Platform

On 18th December 2018 UNIVA and CENTROCOT participated to BOOSTALPS – Workshop & Brokerage Event in Milan.

Such event was structured in a thematic workshop and an afternoon of international bilateral meetings dedicated to the textile and automotive supply chains in order to foster synergies and commercial, technological, research and innovation partnerships.

It also gave the opportunity to participants to be updated on digital and bioeconomy solution within Textile and Automotive value chains.

Therefore, target participants included Companies, SMEs, University, R&D centres, Business organization (Associations), Cluster and Public Authorities operating in Textile and Automotive sectors. During the meeting, as partners of LIFE M3P and ENTeR Projects, UNIVA and CENTROCOT presented the highlights of Project “ENTeR”, under the Program Interreg Central Europe focused on Textile Waste Management, and illustrated the on-line platform of LIFE M3P Project, which promotes exchanging of industrial waste among companies of different manufacturing districts, in order to search contacts/experiences in waste management and industrial symbiosis for future



project cooperation. The event was organised by Confindustria Lombardia in the framework of activities of Action Group 2 “To increase the economic potential of strategic sectors” of the Alpine Macroregion – EUSALP. EUSALP, is the EU Strategy for the Alpine Region including 7 Countries - of which 5 EU Member States (Austria, France, Germany, Italy and Slovenia) and 2 non-EU countries (Liechtenstein and Switzerland) - and 48 Regions. BOOSTALPS figures: 100 participants including companies (43), start ups (8) Universities and R&D Institutions (12) Associations (14). Clusters (12), Public Institutions (7) and others (4), coming from 7 EU Countries (Italy, Estonia, France, Germany, Lithuania, Spain, and United Kingdom).

ENTeR – Expert Network on Textile Recycling: innovative waste management and recycling methods in textile manufacturing make it possible to reduce and reuse waste. It helps cutting production costs while protecting the environment. ENTeR works in five central European countries that are involved in the textile business, to promote innovative solutions for waste management that will result in a circular economy approach to making textiles.

Site Web:

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Czech Republic - Presentation of the ENTeR project results at the "TEXCHEM 2018" conference



From 8th till 9th November 2018, in Pardubice was held the 50th national coloristic conference with foreign participation **TEXCHEM 2018**. The main themes that resonated throughout the program were innovations and the circular economy.

The conference program of the first day brought very valuable information about the regional innovation strategy program "RegioTEX", when the program managers of the cooperating regions (Královéhradecký, Liberecký and Pardubický) introduced the current possibilities of innovation support and the and concepts of activity in cooperation with the industrial sphere.

The afternoon program was devoted to presentations of foreign researchers of successful research projects within the RESET project, where the topic of recycling of textile waste was also discussed.

These topics were followed by a lecture of Mrs.Chybová (INOTEX, Ltd.) on "Production and processing of textile waste in Central European countries", presenting the partial results of the ENTeR project. The 50 participants could hear the results of the study on the current situation in the production and handling of textile waste not only in the regions participating in this project but also in other Central European countries. The main conclusion of the study was that in almost all of these countries, there is a declared need for innovation in processing and recovery of waste especially from production of technical textiles, whose production is currently one of the most important textile productions in Central Europe. Also increased efficiency of separated collection of old textiles from public and its recycling will require changes in the coming years in the light of the forthcoming obligation of significant diversion from landfilling and the obligation of all EU member states to introduce a sorted textile waste collection by 2025.

Thanks to the participation of the "RegioTEX" regional managers as well as the stakeholders from textile industry, research and branch associations, the ENTeR project aims and mid-term results were introduced to the wide range of professionals.

Germany - Announcement of the 14th



The Saxon Textile Research Institute (STFI) is inviting all experts from the textile recycling sector to exchange experience at the 14th Colloquium "recycling for textiles" which will be held on 4th and 5th December 2019 in Chemnitz. The following topics will be in the focus of the event:

- Principles of sustainable management
- Material cycles
- Recycling of high-performance fibres
- Novel recycling technologies

Detailed information and the programme will be available in summer 2019 under www.stfi.de.

Poland – IW on International Textile Fair: Fast Textile



The ENTeR project ideas were disseminated during Fast Textile International Textile Fair of woven fabrics and accessories held in Nadrzyn on 22-24 November 2018, organized by PTAK WARSAW EXPO.

The International Textile Fair: Fast Textile was created in response to the market's need for such events and soon became the go-to place for clothing producers in Central Europe.

The trade fair gathers over 250 exhibitors from all the world and offers an excellent opportunity to have a direct talk with current and potential stakeholders as well as to promote ENTeR project results.

Launching the Pilot Case

No.	Title of the Pilot Case	Partner
1	From residues to raw material – New recycling approach to handle textile waste from a finishing company	Germany
2	Generation of waste from manufacturing of technical textiles	Czech Republic
3	Reduction of the waste generation through prolongation of the service life of textile products	Czech Republic
4	Recollection, recycling and waste management of stock post-industrial and used post-consumer workwear finished garment	Italy
5	System of segregation and preparation of postproduction waste	Poland
6	“Wool Waste” raw material development	Hungary
7	Development of the waste management related in-house logistic system	Hungary

Pilot Case n°1: Germany

Company identified offers a contract finishing and functionalization of high-quality home textiles, household textiles and textiles for public areas, functional fabrics for clothing and technical textiles. They produce several different types of textile waste: selvages (edge strips), end pieces / leftover pieces, mixed textile waste from products coming from customers for finishing, dust and pieces of thread and yarn waste. Some part of the unmixed waste is taken back by customers to be reused again in the production process, but the major part is transported to the disposal company to be finally incinerated or landfilled; the fee has to be paid for the waste disposal.

The company is looking for solution of their logistical (regular disposal/take away of waste by external providers, easy and non-bureaucratic handling of waste), economical (disposal of unmixed (pure) waste free of charge) and technological (shredding/cutting of waste directly at the point of origin (online processing), technical development of such a shredding unit, finding solutions where such chopped pieces can be used, finding solutions for the use of shearing dust) needs.



Pilot Case n°2: Czech Republic

Whereas the recycling technologies for processing of textile waste such as the old clothing or home textiles are traditional and well available (almost mechanical technologies as cutting and tearing), the processing and utilization of waste from technical textiles are often difficult or costly due to their technical nature (coatings, laminations, composites ...). Due to the significant position of the production of technical textiles in Central Europe, finding solution represents an innovative opportunity for waste-processors. The three Czech companies producing the heavy coated textiles are looking for the processing and reuse opportunities for their waste. Two of them are producers of the technical textiles for abrasive, printing and bookbinding sector. The third company is the producer of bathmats. The generated waste consists of selvages (edge strips), cuttings, pieces of yardage textiles with or without coatings, or yarns and fibers.



Pilot Case n°3: Czech Republic

The pilot case aims to compare the length of the service life of textiles from 100% cotton and from the cotton/PES (50:50) blend used for hospital service textiles which are designed for the repeated washing. The aim is to demonstrate the prolongation of the service life in case of textiles made from blends and therefore the reduction of raw materials consumption and thereby reduction of amount of generated textile waste (end-of-life textile products). For pilot verification of this direction, it is necessary to create mutual coordination between producers (textiles and protective clothing or bedding), users and, increasingly, industrial laundries offering the rental of these products. Besides the ecological effect and the step towards the sustainability of the material resources, this cooperation may bring additional economic effects; instead of the upcoming landfill and liquidation charges, to create prerequisite for partial compensation of acquisition costs through the recovery of waste in the circulating economy.



Pilot Case n°4: Italy

Italian partners (CENTROCOT and UNIVA) involved company an important Italian producer of work and protective garments and uniforms. The problem of waste management addressed by the company deals with the management of old (and expired) garments stocked in their storehouse, and with the used garment recollected from their customers after use. From the technical point of view, the company needs to find a method to recycle the disposed garment (disassembling method, automatic disassembling machine development, recycling techniques for some components with special finishing or associated composites). The proposed solution need to be verified from the economical and logistical point of view. Special consideration has to be taken into account in case of garments intended for military and law enforcement applications.



Pilot Case n°5: Poland

In the 4th quarter 2018 IW launched the Polish Pilot Case “System of segregation and preparation of post-production waste”. The post-production textile waste consists of yarn remains, cutting waste and dust. The main objectives of the Polish pilot case are: finding the solution for recycling and use of this waste together with waste analysis, segregation, labelling, pre-treatment for recycling and staff training.

Representatives of IW involved in the ENTeR project implementation visited twice textile company participating in the Pilot Case. Samples of waste were collected and characterized.



Pilot Case n°6: Hungary

For the pilot case the only felting company in Hungary was selected. The textile waste consists of edge cuttings mainly from 100% wool or from wool blended with viscose, often painted. The cutter edges of the woolfelt are too small to be sold as felt for decoration or industrial use. As these small parts contain the good quality wool, they might be potential raw materials for other type of usage. The pilot case aims to use this refusal.

Pilot Case n°7: Hungary

This pilot case aims to find a solution for the post-production waste generated by a company which is the manufacturer of mattresses, upholstered bedroom furniture and home and household textiles. Their waste consists of cutting waste and textile fabrics, latex, coco-latex or PU foam and of foils and films. The pilot activity shall support the mineralization of the storage cubage of the waste – increasing the storage capacity – and create an easily movable formats of the waste. Having an appropriate cubage (m³), volume and mobility, there will be a possibility to transfer the waste to the waste management company and store/warehouse of the waste inside the company until the delivery.

Together with this, developing the waste management related in-house logistic system is needed; currently – due to the missing in-house logistic – the generated waste is stored in an open areas in a mixed system (not separately collected per categories). The lack of the waste homogeneity does not allow the transfer of the waste to a recycling company.