

Project ENTeR – results of the pilot study „Reduction of the waste generation through prolongation of the service life of textile products“



In accordance with the large-scale application of **textiles for medical (hotel, recreational) facilities**, the possibility of using these relatively well-defined materials **after their physical life for recycling** is offered in connection with the effective direction of steps towards the circular economy. This waste category was also included in the program of the European activity RegioTEX - as a significant group of textiles with relatively easy definable material composition (the majority share of CO is accompanied by increasing volume of blended structures CO/PES with extended life). Despite the increased focus on functional and multifunctional effects, the composition of these wastes generated within the closed cycle is relatively well predictable. The invention relates to reusable textiles, not disposable materials, usually NW based.

The laundry sector is an important area concerning generation of textile waste. Not only washing, but the rental of textiles, where laundries work with more uniform textiles, offers the potential for potential waste reduction by appropriate material composition of basic textiles.

In order to pilot this direction, it is necessary to establish mutual coordination between producers (textiles and protective clothing or bedding), user establishments and, increasingly, industrial laundries offering rental of these products. In addition to the environmental effect and the step towards the sustainability of material resources, systemic cooperation within the chain can also bring additional economic effects; instead of preparing charges for landfilling and disposal, create a presumption of partial compensation of acquisition costs through the recovery of waste in the circular economy.

For the **pilot study** elaborated within the ENTeR project, the area of leasing medical linen was chosen, which can be found both in hospitals and social care institutions, seniors' homes, but also in ambulances of doctors. The aim of the study was to map the manufacturing practices of laundries that provide the leasing service for medical facilities in terms of maintenance methods, end-of-life criteria, disposal of disposed laundry or volumes of disposed laundry, all depending on its material composition. The basic idea of the study is based on the fact that synthetic fibers have a significantly longer shelf life than cotton, which is very popular in health care. If the medical laundry would be replaced by mixed materials step-by-step, the volume of discarded textiles would certainly decrease.

The **findings of the study** showed that companies renting textiles for healthcare facilities use blended materials in their practice. These textiles with the appropriate material composition represented by the synthetic fiber content herein provide both wear comfort and durability. The survey clearly showed that textiles containing chemical fibers have a lifespan up to a third longer than 100% cotton products. The results therefore confirm that industrial laundries by using textiles with a suitable material composition contribute to reducing the production of textile waste.

Laundries have an efficient way of disposal of discarded textiles in the form of sale for further processing as secondary raw materials. Discarded textiles, after further processing, find use as cleaning cloths, insulating fabrics, cleaning fabrics, polishing wheels or fabrics for the furniture industry.

Thus, the principles of circular economics are already applied in this sector - both for the used textile materials (a combination of synthetic and natural fibres and the use of their specific properties) and for the disposal of discarded textiles - the use as secondary raw materials. Environmental footprint is also reduced by providing repairs of small damages, which prolong of textiles usage.

The situation is different for hospitals that operate their own laundry. Here, the use of 100% cotton linen, which has clearly shorter lifespan than blended linen, still prevails. The question is also the quality of the purchased laundry, whose main parameter is mostly favourable price. The study provides strong arguments for the purchase of mixed textiles in hospitals. Here, it is necessary to educate the staff of the hospital laundry purchase department, who can prolong the life of medical textiles by appropriate selection of the material composition of the laundry and thus reduce the amount of waste generated.

The second area that offers the potential to extend the lifespan of textiles is the hotel sector. Hotels and other accommodation facilities generally have high demands on the look and handle of the textiles used. Usually it is bed linen and terry textiles made of 100% cotton. The use of blended materials with a predominant share of natural fibres could extend the service life of the material without noticing consumers. This would reduce the environmental impact not only of the textile waste generated but also of savings in the textile care process (lower water consumption).

More detailed information on the results of the study can be found in the attached Annex.



ENTeR – Expert Network on Textile Recycling

The transnational project ENTeR funded by Interreg CENTRAL EUROPE programme focuses on waste reduction in textile industry and its use. Within the project will be established the virtual centre (the on-line platform) which will accelerate cooperation between the involved textile territories, promoting a joint offer of innovative services by the main local research centres and business associations focused to processing and recovery of textile waste. The aim is to demonstrate the benefit of an operational collaborative model among research and business partners, based on an online tool and shared skills focused on waste eco design and resource efficiency.

More about the project on the web www.interreg-central.eu/enter