



THE NEED TO RECYCLE TEXTILE WASTES. LEGISLATIVE ASPECTS

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Abstract: *The paper presents arguments and examples regarding the need to reuse, sort, manage and recycle more efficiently the textile wastes. Waste are increasing from a quantitative point of view and represent a major problem in each European country and the textile waste represent 5% of the total quantity of waste at a global level. It is estimated that about 95% of what it reaches the landfill could be reused so that the necessity of recycling is obvious.*

The constant need of transforming the wastes into by-products represents a priority because the textile waste have a special characteristic in the way that they can be reused or even repurposed.

The paper also synthesizes the legislation that makes reference to the textile waste, their classification and the obligations of the local community members, natural or legal persons.

It is also presents the current situation of the textile waste with respect to Romania and Bihor county, but there are also presented other numerous cases, examples and situations in which the waste is recovered/collected properly. The examples have the role of showing and emphasizing the concerns of some companies, brands, institutions or local authorities, specialists and specialized personnel within the agencies of environmental protection to encourage recycling or reuse of the textile products that are inappropriately considered as wastes. The information for this paper was collected from literature, from the Agency of Environmental Protection Bihor and on the Internet.

Key words: *reusage, by-product, legislation, codes, valorisation*

1. INTRODUCTION

Waste is any substance or object which the holder throws or intends or is required to discard under Directive EP and Council 98/2008 on waste regime.

At the moment, the waste management is based on the provisions of the Environmental Law no. 195/2005 as amended, Law no. 211/2011 on waste regime and subsequent legislation, that transposes the EU legislation, namely Directive EP and Council 98/2008 on waste regime and abolition of the Directive 12/2006. Processing and reporting of data on waste management has in view the EC Regulation no. 2150/2002 of the EP and of Council on waste statistics, Commission Decision nr. 2011/753 / EU notified under the document no. C (2011) 8165. The following principle is also applied: "the polluter pays", extended responsibility of the generator, economic profitability of recycling and waste hierarchy.



According to Law no. 211/2011, Art. 4, the waste hierarchy is applied according to prioritization in legislation and policy on the prevention of waste generation and management, as follows:

a) prevention; b) preparation for reuse; c) recycling; d) other recovery operations, e.g. energy recovery; e) removal.

Textile waste are among the main groups of waste that is suitable for recycling and recovery processes, along with waste glass, plastic, scrap metal, paper, cardboard and wood (Law 465/2001 which classifies waste). Globally, textile waste represents 5% of the total waste [1]. The same source shows that, according to the American Environmental Protection Agency, there are reused only 15% of the textile waste, although 95% of what reaches the landfill could be valorised [2].

2. SITUAȚIA ACTUALĂ A DEȘEURILOR TEXTILE ÎN ROMÂNIA ȘI JUD. BIHOR

In Romania the central authority for environmental protection promoted those legislative measures aimed at meeting the minimum obligations but mandatory for all EU Member States.

Thus the Integrated Environmental System was established and optimized that allows / will allow the active participation of society, economic operators and citizens that can communicate online interactively with the environmental institutions in Romania; thus, they could participate in the formation of databases on areas of national interest.

The waste generators who hold an environmental permit were provided in the environmental permit for operation with the obligation of reporting statistical data yearly basis in a format established by the competent environmental authority. Operators registered in SIM conformed themselves; therefore they requested the access approval in SIM on Waste / Waste Statistics.

The main issue here is the participation / acceptance of economic agents in SIM registration and reporting, compliance with the reporting session duration, technical barrier and adaptation to the rigour / accuracy of data provision.

AEP (Agency of Environmental Protection Bihor) develops activities in waste management under NAEP Bucharest and MAWF coordination, where appropriate, taking into account the provisions of the national law.

AEP Bihor submits annually in the first semester the yearbook on the Status of environmental factors in Bihor County. Herein (Chapter Waste), there are found data on waste management structured according to data provided by NAEP guideline or by the Minister Order of Environment.

In GD. 856/2002 on the evidence of waste management and for approving the list of waste, including hazardous waste, industrial waste codes are specified. Textile waste can be found in category 04. Waste from leather, fur and textile industries or subcategory 04 02 waste from the textile industry. Their specific waste codes are:

- 04 02 09 wastes from composite materials
- 04 02 14* wastes from finishing containing organic solvents (* hazardous waste)
- 04 02 16* dyestuffs and pigments containing dangerous substances
- 04 02 17 dyestuffs and pigments other than those specified at 04 02 16
- 04 02 21 unprocessed textile fiber waste
- 04 02 22 processed textile fiber waste
- 04 02 99 other unspecified waste

In category 20, subcategory 20 01 separately collected fractions, no waste code clothing and January 20 10 January 20 11 textile waste code. For this code there weren't reported quantitative data on selective collection in Bihor. In urban areas, the municipal waste is collected selectively, the



ANNALS OF THE UNIVERSITY OF ORADEA
FASCICLE OF TEXTILES, LEATHERWORK

combustible fraction of the municipal waste is directed towards co-incineration/ heat power recovery. But it is estimated the percentage mass composition of the mixed municipal waste collected from the environment in Table 1.

Table 1: The percentage mass composition of the collected mixed municipal waste (AEP Bihor [3])

Composition of municipal wastes RURAL 2014	Kg	%
Textiles	37.6	3.94
Paper / Cardboard	25.6	2.68
Plastic	46.6	4.89
Wood	13.3	1.39
Glass	20.3	2.13
Metals	7.5	0.78
Wastes from constructions	14.3	1.50
Biodegradable	447.3	46.90
Other	330.3	34.69
Unprocessed quantity input	952	100

Selective collection at source is carried out only in the premises of the economic operators, under the afore-mentioned codes. There have not been received reports from institutions and operators on disposing of bedding cassation or textile / knitting / garment. Textiles / clothing collected from households were also not reported under the waste code 20 01 11 and 20 01 10 for reasons of storage due to the outdated procedures of the present situation in waste management when it is requested to pay for the waste management and not to be awarded for providing the waste

These wastes are managed under the form of services by applying the principle of extended responsibility of the generator and the principle "polluter pays". Management reporting is stipulated in the environmental permit of the licensed operators. Collecting for the reuse of textiles was authorized for AEP Bihor for Roxana Textil Colect SRL Oșorhei - AM no. 52 / 15.03.2010; point of collection / recovery of recyclable non-metallic waste Oșorhei no. 66.

In 2011 they reported to the collection and recovery of 48 tons waste under the waste code 04 02 21 and 1.8 tons under the waste code 04 02 22 in Popesti Leordeni.

If the operator from Bihor / Oradea works in Lohn system, it returns the waste materials to the provider especially for the fibers / natural materials. The non-recyclable waste in Bihor / Oradea are routed to disposal facilities or thermal utilization in the form of an authorized combustible stream under the code 19 12 10; and code 19 12 12;; respectively to Chișcădaga/ CarpatCement or Holcim / Ecovalor Chistag. In rare cases the waste reaches SC Minet Rm Valcea.

In Romania a large quantity of used clothes are brought. It was a period between 1990-1996 when the import of second-hand clothes exploded and in the recent years a new growth is observed. Many Romanians buy these products both in shops and in markets, bazaars and fairs. In Oradea, in Ocska market a large amount of second-hand clothing and footwear products are now traded, thanks to the very affordable price and their good quality. However, there is some degree of wear and much of these products will not ever sell. Like in the sale of second-hand cars, Romania became a small "warehouse" for these products. Europeans 'are getting rid off' of old, old-fashioned, worn, useless things. Leaving aside the topic of selling second-hand cars, we may say that the market Ocska in Oradea is covered by approx. 40%, by these products which is a lot and showing a sad aspect of this situation.

Among the counties that own modern waste sorting stations, in Buzau a station aligned with European requirements in place was inaugurated in Stâncești, Buzau. In addition to the groups of waste that are collected selectively across the country, here are also recycled waste textiles, altogether



with recyclable waste collected selectively from the population, economic agents from the containers intended for selective collection on public land and from the "yellow bag". SC RER Ecologic Service S.A. Buzau is the only textile waste collector from Buzau county, built inside the Regional Deposit of non-hazardous waste [4].

3. THE NECESSITY OF WASTE CONSTANT TRANSFORMATION INTO BY-PRODUCTS

In general, the waste is growing in terms of quantity and is a major issue in every European country. In the industrial sector we talk more about Rational, clean or environmental technologies or eco-technologies [5].

According to the waste hierarchy it is recommended the prevention / reduction of waste production or their preparation for re-use; recycling, recovery and disposal should be avoided in terms of the waste hierarchy. Also the Law no. 211 of 15 November 2011 defines the By-product as "a substance or object resulting from a production process whose main objective is not to produce it" and that cumulatively fulfills several conditions, including that "it meets all relevant requirements for the product, environmental protection and health protection for its specific use and will not lead to overall adverse environmental or human health "[6].

Among the main groups of waste, textile waste can easily be subjected to recovery processes.

For a proper reuse, it is necessary the sorting of textile waste:

- natural or synthetic;
- according to their ecological impact: very polluting, polluting or non-polluting;
- according to the degree of workability/processability in: processed by complete textile processes, processed by incomplete textile processes or unprocessed by textile processes.

To show why reuse or recycling of textile waste are important or what are the negative effects of the textile waste, some examples are given:

- In November 2015 the European Union announced an investment of 3.6 million euros in a program to reduce carbon emissions and water consumption in the European textile industry. It will be implemented in 11 countries, including Romania and this program is intended to reduce by 90,000 tons of textile waste that reaches the landfill, by 2019 [1]. One of the main objectives is that waste to be recovered from the production line.

- There are brands and companies (organization I: Collect, for example) which have developed a global network of waste collection textiles in collaboration with major companies (H & M, Puma, Levi Strauss & Co., American Eagle Outfitters and others) that collects the textile waste from households. Thus, in the city of San Francisco there is a municipal program designed to prevent storage or textile waste incineration [2].

- Recycling saves raw materials, electricity (using dozens of cars in a technological flow), time, resources (use of enormous amounts of water and other substances: quantities of dye, chemicals, fixing agents etc.), it pollutes the environment less (using dyes, chemicals), decrease of costs for finished goods;

- Are in an overwhelming proportion; over 90% of the textile waste may be reused in the same form, or as a raw material for various items of clothing;

- Textile waste have a special feature, meaning that some of them may even re-used by collecting donations for the needy, or in the form of charity actions;

- There are companies concerned to expand their services in waste collection. For example, the company GREEN GLOBAL FUTURE S.R.L ensures the collection of textile waste from the special collection centers and their transportation to the recycling plants, where they are treated and ready to be put under any form, again in use [7];



- In Covasna county there are produced approx. 600 tonnes of textile waste per year and there are 14 textile factories, one of which gather in a month about two tons of textile waste. The members of a business cluster in Sfântu Gheorghe, together with specialists from Transilvania University from Braşov and Gheorghe Asachi from Iasi were able to make plates for insulation from the remains of textile materials, as replacements for the polystyrene plates which are readily degraded in time [8].

- Regarding the waste reuse and recover of textiles, RER Buzau sends them to Lafarge company that uses them in the cement production [9]

4. CONCLUSIONS AND RECOMMENDATIONS

Sorting and recycling of textiles is highly appreciated in Romania. A small part of the waste resulted in the manufacture of garments and textiles are recovered and are reintroduced into the production process, and part of it is largely unrecoverable waste that is incinerated or ends up in landfills. Internationally, there are many ways and initiatives that take away textiles from landfills.

Targets and objectives set in national and European legislation are required, but each Member State may establish additional objectives and targets, more ambitious legislation of its own.

Romanian economic operators report generally non-hazardous waste generated by light industry under the codes: 04 02 09, 04 02 21, 04 02 22. Part of this waste reach incineration and the other part is removed through final disposal. There are also operators that eliminate this waste under the waste code 20 03 01 mixed municipal assimilated wastes. In the regulatory and monitoring waste activity, the waste stream is necessary to respect the hierarchy of waste.

Institutions of Bihor county (state / public) are imposed to follow the 'cassation procedure' to sell / assign a value to the objects proposed for cassation, regardless of their condition. It is an example of preparation for reuse.

By Law 211/2011, the industry proposed to conduct an audit of waste management operators who have implemented management systems voluntarily. Anyway, we have examples of target, minimizing hazardous waste, waste minimization, constantly transforming waste products.

GD 349/2005 sets maximum term of operation of landfills for non-hazardous municipal-industrial waste in accordance with the timetable for compliance. Legislation does not allow the mixed storage of waste under the code 20 03 01. The legislation obliges to reduce to 35% the amount of biodegradable waste landfilled compared with 1995, other and other restrictions, including the environmental tax pay per deposited ton under GEO 196/2005 as amended, including by OM / 2015.

As regards the population, it is desired a reduction in wasted materials and energy, to save raw materials and reduce air, soil and water pollution. Needed awareness campaigns for recovering, sorting and recycling of waste properly are required. At present, textile waste is not yet part of the public awareness actions in our country.

In Romania selective collection of textile waste is still not promoted, neither nationally nor locally. Tossing them into landfills is currently a widely-spread practice. It is known that some components / materials are harmful to the environment, meaning it does not decompose or break down very hard (Synthetic fibers) or directly pollute the environment through decomposition (methane producing woolen clothes).

Certainly, in not too far future, in addition to the large groups of recyclable waste (plastic, paper, cardboard, glass and metal), as it is the case for Oradea municipality, the waste textiles will be introduced with the obligation of the members of local communities to sort them. Beginning with 2016, the new regulations for the operation of sanitation services provide as liability for both individuals and legal entities, as an obligation "to provide pre-collection separately in containers provided by the operator of the service, distinctly marked and placed in dedicated facilities, of the



waste that they generated in their own household or because of the lucrative activities they carry out"[10].

REFERENCES

- [1] <http://www.green-report.ro/cum-ne-va-ajuta-ue-sa-reducem-deseurile-textile/>
- [2] <http://www.ecoteca.ro/deseurile-textile.html>
- [3] APM Bihor
- [4] <http://www.sansanews.ro/stiri/actualitate/buzau/ne-aliniem-cerintelor-europene-statie-de-sortare-a-deseurilor-reciclabile-inaugurata-astazi-la-buzau.html>
- [5] <http://www.mdrl.ro/euroimm/index.php?id2=050401>
- [6] LEGE nr. 211 din 15 noiembrie 2011 - Ierarhia deșeurilor
- [7] <https://www.greenglobal.ro/colectare-deseuri-textile/>
- [8] <http://www.digi24.ro/Stiri/Regional/Digi24+Brasov/Stiri/Deseuri+textile+folosite+pentru+termoizolare>
- [9] (<http://opiniabuzau.ro/ce-se-nt-mpl-cu-de-eurile-textile>)
- [10] <http://www.ipp.ro/deseuri/3-lege>