

IMPLEMENTATION OF WASTE MANAGEMENT IN A ROMANIAN SME

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ABSTRACT: The waste management shall relate in particular to the activities of the collection, transport, treatment, recovery and disposal of wastes. The responsibility for the activities of waste management is the responsibility of the large emitters, in accordance with the "polluter pays" or, as the case may be, the producers. The activities of the components of the waste management should be carried out in compliance with the rules for the protection of the environment, which reflects the requirements of the European legislation.

KEY WORDS: cleaner production, green economy, waste

1. INTRODUCTION

The environment is an essential element of human existence, which is the result of interference of natural elements - earth, air, water, climate, and biosphere – with elements created by human activity. Effects of resource consumption, to environmental impacts are increasing. It is important the level and pace of economic and social development [7].

Waste resulting from human activities multiple is a current problem constantly rising quantities and types of waste, on the one hand, but also because of large volumes of raw materials, reusable materials and energy which can be recovered and put into use [10]. Waste is increasingly considered not only an environmental issue but also a potential economic resource whose recovery can bring significant economic benefits [7].

Due to overall economic growth, the progress achieved in all areas of economic and social life, humanity now has the technical means performance that consumes huge amounts of natural resources, renewable and non-renewable exploiting more intense environmental factors and changing nature of rapidly [7].

If we will not achieve adequate control and conscious human action will appear major economic imbalances, with negative effects both on the quality of his life and on the evolution of the biosphere.

2. WASTE MANAGEMENT

Waste management applied in enterprises requires coordinated action from local to regional civil society cooperation with local authorities and cooperation between states.

The general principles of waste management are concentrated in the so-called 'waste management hierarchy' comprising [7]: prevention; preparation for reuse; recycling; other recovery options; elimination.

Priorities are prevention of waste production and reduce their harmfulness. Waste polluting the environment. "Environmental pollution is an important issue, as recent studies in the field, is responsible for global warming". [11] When you cannot achieve any of the two priorities, waste should be reused, recycled or used as a source of energy (incineration). In the latter situation waste must be disposed safely.

a. Preventing waste

An increasing amounts of waste, according to forecasts, will continue to grow and will grow with them and their environmental impact. Increased economic activity leads to increased waste generation. [10]. All products have an environmental impact throughout their life, from manufacturing to disposal as waste or use. Because there are so many products and players involved, there is no one measure that covers everything related to waste prevention. Prevention includes: economic instruments banning certain substances, product design principles etc.

At the enterprise level, it can take measures in the sphere of extraction and processing of raw materials and in the design and manufacture of appropriate products. National economic instruments as: taxation of waste, industrial companies can boost their own production in order to limit waste.

Domestic waste reduction involves reducing consumption in general and changing consumption patterns, which in turn, requires making some changes in habits and lifestyle of the people [5].

b. Preparing for reuse

Preparing for reuse operations involve: checking, cleaning, or recovery, by which products or components of products that have become waste are prepared for reuse without further pre-treatment operations.

c. Waste recycling

Waste recycling requires recovery, which materials are reprocessed into products, materials or substances being used for the same purpose for which they were intended or otherwise. Waste recycling includes reprocessing of organic material but does not include energy recovery and conversion for use as fuels.

Recycling lead to increases the efficiency of resource use and lower environmental impact. Waste is important in today's society a source of secondary resources, therefore promoting the benefits of recycling and sustainable resource use, waste is a renewable source of energy. Recycling involves performing several previous

activities as: collection, transport waste, intermediate processing that involves sorting, shredding and compacting etc.

d. Other options for recovery: energy recovery

Waste combustion technologies have been developed over the years. From simple waste elimination installations, installations for obtaining energy from waste with emission control technologies, they represent methods increasingly used in implementing waste management strategies.

Energy production from waste involves burning waste. Energy content of the waste is used to produce electricity or obtain heat and power, heat being used for various services (heating, hot water supply).

e. Waste disposal

Landfilling is, ecologically, the least desirable option in the waste management hierarchy. However, it continues to be the most common method of elimination, although it has the most negative effects on the environment and on human health.

The disposal of waste depends on the level of development of countries, the behaviour and attitude of the authorities and civil society and the existence of legal instruments regarding disposal.

Waste management is an important national issue today [9]. The integrated approach to waste management refers to the activities of collection, transport, treatment, recovery and disposal. Waste management involves the construction of waste disposal installations, measures to prevent their production and recycling in accordance with the hierarchy of principles: prevention of waste and its negative impact. Included in waste management and recovery of waste through recycling, reuse and safe final storage of waste, where there is no possibility of recovery.

National Waste Management Strategy 2014-2020, requires all stakeholders taking responsibility for rational management of resources and waste as follows:

- manufacturers must produce goods using more recycled materials and less raw materials;

- their products should generate less waste and have a low environmental impact;
- distributors to reduce packaging and to support consumers to generate less waste;
- consumers, both business operators and the population must reduce their waste and to collect them separately for recycling, to purchase products or services that generate less waste and have a low environmental impact;
- local authorities must provide direct or indirect collection and recycling services for residents and to provide information on waste reduction; to plan measures for waste management and to invest in facilities to collect and treat them;
- operators must invest in recycling and recovery of waste and provide quality services.

3. ENTERPRISES AND WASTE MANAGEMENT

The national economy depends on a wide range of natural resources: raw materials, environmental factors (air, water, soil), flows of energy (fossil fuels, renewable energy: wind, solar, geothermal, wave, etc.) and of physical territory. These resources are used to produce goods or to absorb the emissions produced by human activity; they are indispensable for the functioning of the economy and for ensure an appropriate level of quality of life [4].

If until now it was considered the most important action of disposal for future focus on how we can minimize their generation and how we can reuse and capitalize. Reducing consumption of natural resources, recycling materials that are found in products become waste and energy recovery must be determinants factors of a major change towards a sustainable life [4]. Resource efficiency has always been fundamental to maintaining business competitiveness in a dynamic market, generating reducing costs along the entire supply chain. "Win-win" means: improved efficiency of resource use, implicitly business; minimizing environmental impact.

Businesses are expected to drive in three major directions for sustainable development and waste management successfully applied [4]: better products, flexible production and intelligent consumption.

A. Better products

To this must be done Eco-design of products, which means that manufacturers must take in consideration energy consumption and other environmental impacts that occur during conception and design phase of a product. Eco-design requirements are set based on the life cycle of a product.

B. Flexible production

Enterprises can produce more sustainable products by using small amounts of material and by encouraging the use of recycled materials. There are necessary actions is innovation processes and technologies that will lead to efficient use of resources and reduce environmental impact.

C. Smart consumer

Production of goods and services shall require significant amounts of energy and raw materials while recycling bring benefits the environment. There are factors that can significantly influence the comparison between recycling and other alternative (e.g. energy recovery and disposal), namely [4]: distance to the reprocessing installation and the type of transport used; recycling efficiency (how much product is lost in the recycling process); quality-products obtained; product that will replace the recycled material.

Applying effective waste management at the enterprise level, and not only, leads to [9]: improve the environment and protect human health; increasing resource efficiency; sustainable waste management; development of responsible behaviour on the prevention of waste generation and management; encouraging green investments; initiate and / or develop research in the field of waste management.

4. IMPLEMENTATION OF WASTE MANAGEMENT IN A ROMANIAN SME

SC ILIANA SRL [1] is an Romanian SME whose object of activity, product manufacturing laminated wooden CAEN code 2020 - Manufacture of veneers wood: plywood, plywood, plywood, boards splinters of wood, fibreboard, and so on. The company is a medium-sized enterprise with a total of 120 employees, of which over half are women. Headquarters is located in the town of Targu Jiu, Gorj County. Qualified personnel are 70%, with the following specializations: economist-engineer, economist, engineer, carpenter, electrician, fireman, locksmith, car mechanic. The staff worker is 98% of its workforce.

SC Iliana SRL is equipped with high performance machines used in the manufacture of windows and doors from wood (CNC machining centres, grinding machines, multiple circular etc.). The products are made of the highest quality and unique design. Most customers (90%) are external customers (Germany, Austria, Italy, France etc.). Applying waste management in its activity, the company manages to move towards a zero waste economy activity. Thus, all waste from the production process is used in the wood heating of the company.

Circular economies means "zero waste" and involves preserving the value added to products as much as possible and eliminate waste. Resources remain in the economy and where a product has reached the end of its life, it can be used again and again in a productive manner and thus create more value [2].

4. CONCLUSIONS

The transition of the enterprises to economic models more circular businesses promise a much better future for the economy. Current and future challenges represent by pressure on global resources can be easily overcome by the application of waste management, with result "zero waste".

Repeated use of resources back to productive use reduce waste volume and decrease dependence on unreliable supply is a direct

way to increase competitiveness. This contributes to removing dependency economic growth from resource, offering the prospective of sustainable growth, which will last.

To contribute to the conservation and reuse of existing resources is more than proof of good civic policy, is exactly what every citizen should do to protect our environment.

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