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THE WEEE MANAGEMENT SYSTEM IN ROMANIA. DIMENSION, STRENGTHS AND WEAKNESSES

Nadia CIOCOIU
Academy of Economic Studies, Piata Romana 6, Bucharest, Romania
nadia.ciocoiu@man.ase.ro

Ştefan BURCEA
Academy of Economic Studies, Piata Romana 6, Bucharest, Romania
stefanel_burcea@yahoo.com

Valentina TÂRȚIU
Academy of Economic Studies, Piata Romana 6, Bucharest, Romania
Valentina.tartiu@man.ase.ro

Abstract
Management systems for waste electrical and electronic equipment (WEEE) have modernized as countries have accumulated experience. They are characterized by a profound dynamism because of the alert pace of growth of waste quantities which have been generated, but also because of the continuous diversification of the range of electronic equipment sold as an effect of the technical progress evolution and of the living standards of population growth. In Romania, the emergence and the development of WEEE management system has been stimulated by the need to align to the European Commission stipulations as a result of the integration into the European Union in 2007. In this context the present paper examines the strengths and weaknesses of WEEE management system in Romania.
Keywords: Waste Electrical and Electronic Equipment – WEEE, Romania, management, weaknesses, strengths.

1. INTRODUCTION

All around the world, WEEE is the waste with the biggest and the most spectacular growth rate from the entire quantity of waste generated (UNEP, 2007a). This kind of waste represents 1% from the entire quantity of solid waste generated each year worldwide and it has been estimated that until 2010 the percent will get at 2%. In the United States of America WEEE cover between 1 and 3% of the municipal waste generated each year (Pichtel, 2005).

Alarming growth of waste quantities is registered also in the countries members of the European Union, where at each five years WEEE are growing with 16-28%, meaning three time more than the medium growing rate of the municipal waste quantities generated every year (United Nations University, 2008). Inside the community space are generated every year between 5 and 7 million tonnes of WEEE or 14-

15 kg/capita/year, while in countries like China or India the annual quantity of WEEE generated arrives at 1kg/capita (European Comision, 2006).

Visible trends of exponential growth of WEEE quantities are justified by the market penetration profile for the developing countries and the market explosion for the developed countries. Technical progress and increase of living standards are important causes of the high rhythm of growth of WEEE generated every year regionally, in Europe and worldwide (UNEP, 2007b).

The structure and composition of this waste varies from one category to another, but also according to the nature of the products and the electronic goods inside the same category. Generally, WEEE contain over 1.000 substances, which can be both dangerous and non-dangerous in what regards the impact they have over the environment and human health (Tchobanoglous, 2002). We refer here to ferrous and non-ferrous metals, plastic, glass, wood, ceramics, silicone and others. Metals like iron and steel represent aprox.50% from WEEE composition, followed by plastic (21%), non-ferrous metals (13%) and other substances. Among non-ferrous metals found in the structure of these wastes are listed copper and aluminium, but there are few examples of the group of precious metals such as silver, gold, palladium etc. The presence in the composition of WEEE of items such as mercury, arsenic, cadmium and selenium explain the inclusion of these solid wastes in the category of dangerous waste with special diet (Pichtel, 2005).

WEEE was identified as a very important domain which required specific measures and regulations at the European Union level. Directive 2002/96/EC regarding WEEE together with Directive 2002/95/EC regarding the restriction in using dangerous substances inside electric and electronic equipment (EEE) are looking to reduce de impact of WEEE over the environment (European Comision, 2006).

At this moment for the concept of waste from electric and electronic equipment (WEEE; e-waste) literature does not provide a universally accepted definition (Widmer, 2005). The legal system within each country sets its own definition and a number of interpretations and usage of the term WEEE.

At European Union level there is a generally valid definition, the content specified in Directive 2002/96/CE also being undertaken by the E.U. states, but also by several other European countries. According to article 3 (b) waste electrical and electronic equipment represents ”electrical and electronic equipment as waste, including components, subassemblies and consumables which are an integral part of the product when they become waste”. In Annex 1A of the Directive are given all types of equipment covered by it, falling into 10 categories.

Defining the concept of WEEE together with specific rules regarding on how management is done and its means have been taken and adopted by the legislation of each country member of the European Union, in a phased manner, according to the dynamic of the Community efforts to update the acquis in the field of waste management. Together with the alignment with EU directives, each state has developed its own WEEE management system based on features and national interests.

Managing this category of solid wastes needs a specialized collecting, transport, treatment and final disposal system (UNEP, 2007b). Understanding the mechanisms and functioning principles of this kind of WEEE management systems can only be possible after a careful identification and analysis of life cycle of EEE from production phase until final disposal phase of waste as a result because of physical and moral wear of this equipment (see figure 1).

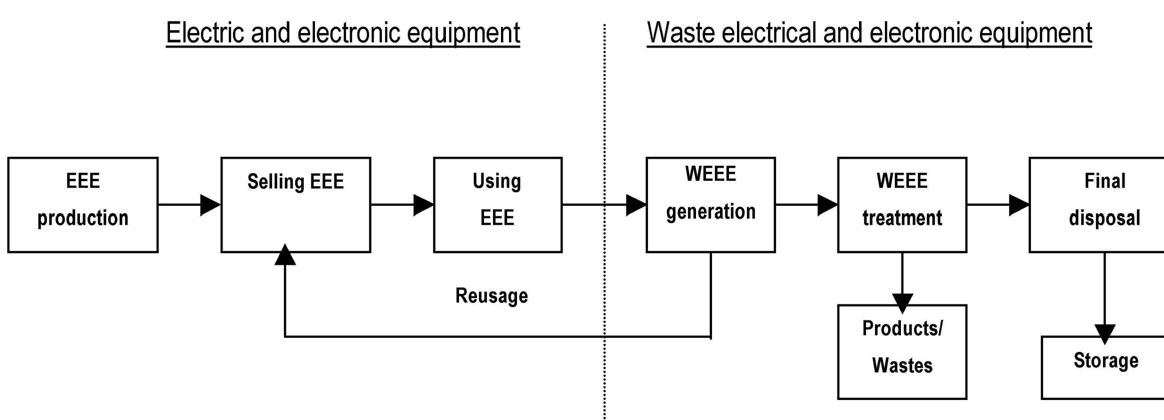

FIGURE 1 – WEEE LIFE CYCLE

As also shown in Figure 1, WEEE management comprises three major components:

- collection, sorting and transport system of WEEE,
- treatment system of WEEE,
- final disposal system of WEEE.

Specialized foreign literature reflects the existence of two types of electronic waste collection systems, one based on monopoly – the collective system, and another one based on competition – the competitive system. The objective of both systems, however, is to provide WEEE collection mechanisms with a low price for consumers and inside the limitations imposed through the national legislation (UNEP, 2007b).