

MODEL OF ALUMINIUM AND COOPER LOGISTICS

МОДЕЛЬ АЛЮМИНИЯ И КУПЕР ЛОГИСТИКА

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Abstract: *The paper deals with management and logistic at cable waste recycling. The main objective is to build a functional system that will ensure the fulfilment of the obligations of the mandatory people with diverse interests and priorities and ensure the involvement of users and other entities participating in the collection of cable waste and to participate in the re-processing and further use of cable waste with emphasis on the characteristic sign recycling - double the environmental impact mitigation on the inputs into the production system which is to conserve natural resources of raw materials and energy, and on the outputs of the production system which reduces the amount of pollutants emitted into the environment. These aspects of operating in this case as a significant interaction because of the use of secondary raw materials (metal), shortening the chain of processes, which vary for different waste products and materials, and in this case is important to protect the environment.*

KEYWORDS: CABLE WASTE, RECYCLING, LOGISTICS, MANAGEMENT

1. Introduction

The current European conditions are posed to the great emphasis on the quality of production processes, with minimal impact on the environment, connected with low raw material and energy consumption. Competition and scientific and technological progress makes the deployment of such technologies to meet the demanding requirements of modern production in particular in the field of automation in terms of economic, environmental and energy efficiency. These technologies include systems based on the processing of waste. These systems are a component of the technical infrastructure with a significant impact on the environment. Waste electrical and electronic equipment are the type of waste, which have in recent years a rising trend. Therefore, the disposal of such wastes is preferred and desirable. Non-negligible is the fact that the waste is processed classically, land filling and incineration, which will offset the huge potential of materials that can be used as primary and save natural resources. One of the firms involved in recovery of metal materials from waste in Slovakia is a company Vamax, Ltd., operating in the region Gelnica - Prakovce. The paper deals with proposal of management and logistic of cable waste recycling for an industrial application.

2. State of the art analysis

Currently, environmental approaches are considered one of the outcomes of the strategy. Demonstration of environmental quality, the organization becomes existential necessity. New technologies and technological innovation in these devices is growing virtually exponentially. The industry produces huge quantities of new technology and using still newer technologies. This forces users to the rapid replacement of equipment, repair of individual ceases to be profitable, more efficient equipment is a modification for the new, more modern. All the devices, which will cease to perform its function, ending its life cycle become waste. In today's world technology is constantly increasing production of waste. Waste electrical and electronic equipment are the type of waste, which has in recent years a rising trend. Such an increase in waste, in addition to containing ingredients classified as hazardous waste, raises concerns especially in terms of the environment. No negligible is the fact that subsequent to the landfill and incinerators lost material huge potential, which can be used to save both the primary natural resources. The challenge today is to systematically address the collection, separation, transport and recovery of waste electrical and electronic equipment that includes cable wastes. In particular, the terms of the current situation in society in terms of current and

proposed legislation concerning the disposal of waste cable and e-waste in practice [1], [8], [10].

3. Problem solution

By analyzing the current situation, it was found that the recovery of raw materials, particularly important commodity copper is deficient, and large quantities of this precious raw materials end up in landfill sites where the collection of waste in an unprocessed form. The issue of waste electrical and electronic equipment is a very current topic and from several angles: environmental, economic, legal and technology. The big challenge today is to systematically address the collection, separation, transport and recovery of waste electrical and electronic equipment [7]. The issue of electrical and electronic equipment after the end of their life cycle in the world and in the Republic of Slovakia is a very current topic and from several angles: environmental, economic, legal and technical (technological). New technologies and technological innovation in these devices is growing virtually exponentially. The industry produces huge quantities of new technology and using still newer technologies. This forces users to the rapid replacement of equipment, repair of individual ceases to be profitable, more efficient equipment is a modification for the new, more modern. All the devices, which will cease to perform its function, ending its life cycle and become waste. No negligible is the fact that subsequent to the landfill and incinerators lost huge potential material which can be used to save both the primary natural resources. Developing a functional system that would ensure the fulfilment of the obligations of the mandatory people with diverse interests and priorities and ensure the involvement of users and other entities involved in the collection and processing is very difficult [3], [6], [9]. At present, away from the understanding of recycling as a further re-use of waste and emphasizes the characteristics of recycling and to mitigate the burden of double aspect of the environment:

- on the inputs into the production system to conserve natural resources of raw materials and energy,
- on the outcomes of the production system reduces the amount of pollutants emitted into the environment.

Aspects operate either separately or simultaneously with the use of waste may not be limited to one or two manufacturing processes. For some the process is the importance of using secondary raw materials, in another it is important to protect the environment, sometimes both are important considerations. Recovery of waste materials from the cable and the majority of their valuable components - metal represents a significant industrial activity in particular economic and environmental reasons. The problem of the classical treatment is specific to each waste as well as cable wastes threaten the environment. The composition of such waste precludes conventional treatment, which is a well-revised, but not an efficient

use of metal, which is present in this type of waste in large quantities, as in natural resources. Material recovery of cable waste is the most important form of exploitation. The resulting secondary raw materials are returned directly to the full circulation of material inputs. Therefore, this method of recovery (recycling) of waste takes precedence over energy recovery [2], [5].

- Plastics constitute less than 8% of the waste, but much more volume, which is especially important in landfills, where volume is more important than the weight of plastics are produced mostly from non-oil, whose stocks are estimated at 40 years only when it is released annually by transport surface waters 3.5 million tonnes of plastics biodegradation in nature or in the landfill is a long, lasting several decades, the incineration of certain types of plastics escape harmful substances into the air. SR recycles 16%.
- Metals - constitute almost 5% of municipal waste are largely recycled, and thanks to demanding manufacturing and financial resources limit their production is very energy-intensive mining and very harmful nature. Slovak republic is recycled 16%.

The sort of waste, thereby helping to re-use of materials. This method of waste disposal is one of the most important economic instruments, the recovery of waste. Therefore, the aim of this project application and use of best available technology in processing of waste cable and effectively uses the materials that can be brought back into production use. The big benefit is this method of treatment is to shorten the cable waste logistics chain using separated components, reducing overall emissions and minimization of negative externalities and their effects on the environment [4], [11].

Recycling of cable waste helps conserve primary resources, and thus preserves for the future. Also brings great energy savings, as compared with the energy consumption to obtain the metal from ore is efficient (Fig. 1). The industry dealing with recycling "saves" honey from e.g. of outdated production facilities, waste resulting from manufacturing processes, from cars, which are already served from discarded cables and the like. The material is first graded part may be used directly as an ingredient in the smelting furnace; the greater part is recast and further processed. Environmental marketing is the production of environmentally safe products, using recyclable energy-efficient technologies.

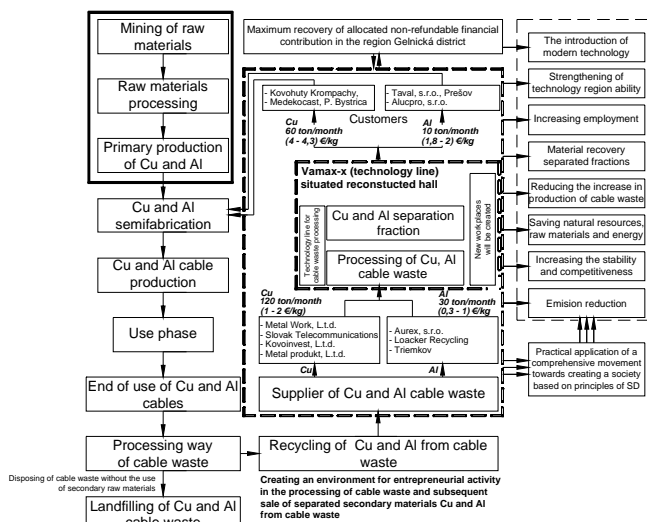


Fig. 1. Model of material flow.

4. Conclusions

Past activities have reached a significant, measurable results and lead to the emergence not only of other job opportunities but also for processing waste of cable, whose total share in the waste and E-waste is increasing. When processing the waste of cables are also evaluating the use of a by-product - plastic. To consider the purchase of equipment for plastics processing the production which will increase the value added of the whole process of recycling cable waste. The challenge will be to increase the diversification of imports of cable waste, where ambition is full capacity utilization of technological lines, therefore the continuous operation of the three changes. Major supplier of cable waste will be Slovak telecommunications. The main suppliers of cable waste will therefore Slovak telecommunications. After processing the waste of cable customers separated metallic fraction. Expected situation in general after a recovery operation, and equipment can be summarized as follows:

- increase the competitiveness of existing enterprises by introducing innovative and advanced technologies,
- creating an environment for increasing the innovation potential of enterprises in industry and services,
- development of eco-production as a necessity for the preparation of sustainable development in the industry.

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