

ЭКОЛОГИЧЕСКИЕ АСПЕКТЫ ИСПОЛЬЗОВАНИЯ ВТОРИЧНЫХ РЕСУРСОВ

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ENVIRONMENTAL ASPECTS OF THE USAGE OF SECONDARY RESOURCES

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Аннотация. В данной статье рассматриваются вопросы образования электронных отходов и перспективы их повторного использования.

Abstract. This article discusses the issues of e-waste generation and the prospects for their reuse.

Ключевые слова: электронные отходы, охрана окружающей среды, рациональное использование природных ресурсов, домашние отходы, переработка отходов, твердые отходы, электронных отходов, полимер, макулатура, стекло, резинка, старые ткани.

Keywords: e-waste, protection of the environment, rational use of natural resources, household waste, waste recycling, solid waste, electronic waste, polymer, waste paper, glass, rubber, old fabrics.

Globally, the problem of e-waste is becoming one of the most pressing environmental issues, such as domestic and industrial waste. According to the analysis, the annual increase in household and industrial waste in recent years has a negative impact on environmental sustainability on earth. According to the data, there are about 900 types of waste, which has been recorded so far. The amount of waste in the world increases by 3% every year.

The protection of the environment from production and consumption waste is inextricably linked with the problems of rational use of natural resources and the implementation of environmentally friendly technologies. For many centuries, improper waste management has led to changes in natural resources, disruption of natural phenomena. Eighty percent of these wastes are organic matter, and their recycling can produce large amounts of energy and energy carriers. The experience of developed countries shows that 85% of it can be recycled.

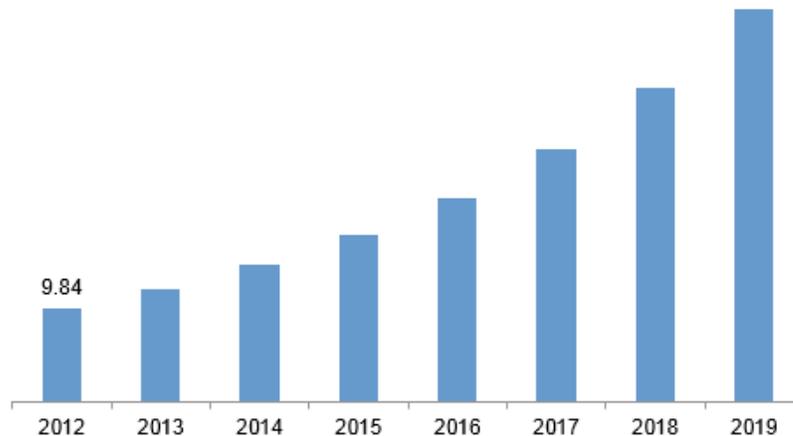
If we look at the foreign experience, € 200 fine for throwing rubbish out of a car window and € 90 fine for throwing cigarette butts in the hallway will be paid in Spain. In Germany, immoral citizens are caught by "garbage detectives". Garbage that is not thrown in a special box will result in € 100 fine due to video recorded on video cameras installed on the streets. You will have to pay € 20 for throwing cigarette butts, ice cream or candy wrappers, a cold drink bottle on the floor costs, € 35 for chewing gum and leftover food, while throwing old furniture and electronics costs between € 150 and 600. paper thrown on the ground in Sweden costs its owner € 90, while in Singapore it costs 300 to 1,000 dollars.

Experts say that household waste is a cheap raw material all over the world. The experience of developed countries shows that 85% of waste can be recycled. In some countries, a separate waste collection system has been established. As a result, most of the raw materials, such as paper, plastic, aluminum, are sent for recycling. The positive impact of this process on the environment is enormous. Waste recycling saves energy and raw materials significantly.

Waste recycling reduces the use of electricity and water several times. For example, getting paper from waste paper not only reduces the cutting of trees, but also reduces electricity consumption by three-quarters. A ton of paper recycling consumes half the water it takes to make it out of wood.



Increasing number of electronic waste is also a threat to human being. About 2 million tons of electronic waste is generated on Earth every year. For example, a single mobile device consists of 500 to 1,000 different parts. Many of them contain toxic heavy metals - lead, mercury, cadmium and other hazardous chemicals.



Source: Transparency Market Research, Annual Reports, Primary Interviews

Today, Uzbekistan is the second place in Central Asia after Kazakhstan in terms of new e-waste collection. Every day in our country 12-13.5 tons of solid waste is collected, about 5 million tons per year. According to UN experts, up to 45 tons of electronic waste, including electronics and office equipment, is generated in Uzbekistan, which is the second largest in Central Asia after Kazakhstan.

Currently, there are 317 enterprises processing household waste in Uzbekistan. These include enterprises that process polymer, waste paper, glass, rubber, old fabrics and other types of waste. They recycle only about 14.23% of household waste.

Among solid waste, electronic waste (components of electronic devices) or in other words e-waste occupies one of the highest positions in terms of the complexity of the processes of utilization and subsequent use.

The State Committee for Ecology and Environmental Protection of the Republic of Uzbekistan and its territorial departments have established controlling inspections on waste generation, collection, storage, transportation, utilization, processing, burial and sale. The most effective way to develop the industry is to introduce low-tech technologies to waste processing and utilization enterprises. Today, about 300 enterprises in the country process paper, plastic, rubber, glass, metal and other secondary waste.

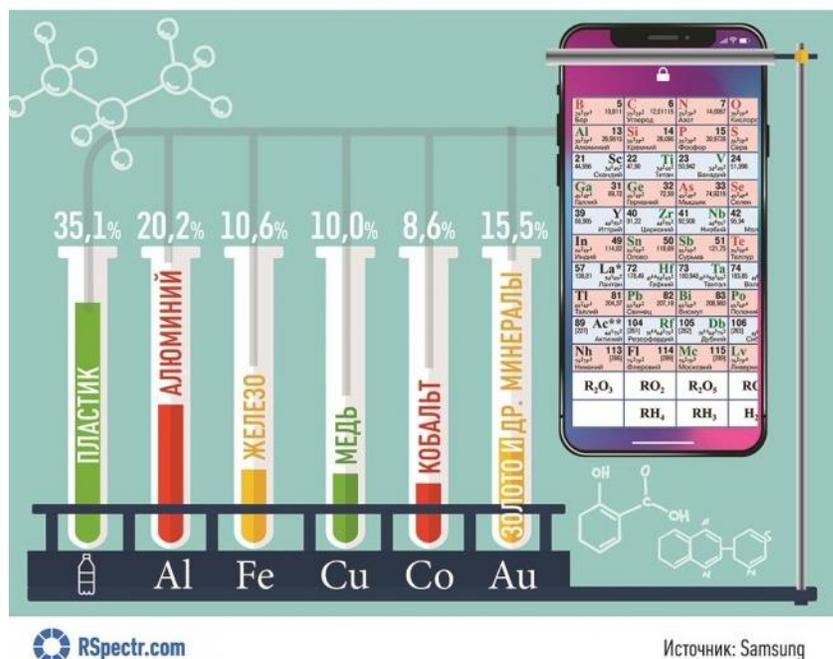
As the range of electronic products used in the household grows, so does the amount of electronic waste. Advances in science and technology have created a new type of waste that causes serious damage to the environment, electronic waste. Switzerland decreed a law in 1998 banning the disposal of electronic waste in ordinary landfills.

As cell phones, computers, printers, and cameras are updated, they are thrown in the trash. 500,000 tons of refrigerators, 1.3 million tons of televisions and 300,000 tons of computers, in China alone are dumped in landfills every year.

80% of e-waste in the US and 75% in the EU is imported and resold to developing countries. Toxic substances in them are released into public landfills, mix with soil and water, and enter many living organisms, including the human body, causing disease. According to experts, there will be 49.8 million tons of e-waste and this equates 7 kg for each citizen of 7 billion population. By comparison, this electronic waste is equal to the height of 11 Egyptian pyramids. Electronic waste contains hazardous compounds. Computer monitors and televisions each contain up to 4 pounds of lead. They also contain heavy metals up to 70 percent mercury and cadmium. When lead has a negative effect on a person's nervous system and kidneys, cadmium can cause lung damage. Liquid crystal monitors are coated with panels containing mercury. In addition, the chromium, lithium and hydrocarbons in them cause serious damage to the environment.

According to the UN report on e-waste, 50 million tons of electronic and electrical waste are being globally occurred. Analysts predict that if nothing is done in this field, the amount of waste will double by 2050, constituting 120 million tons per year. It should be noted that 500,000 phones are dropped annually worldwide. There is 100 times more gold than a ton of gold ore in a ton of cell phones.

Materials contained in mobile devices



Toshtrangmetzavod JSC is an enterprise specializing in the collection and processing of non-ferrous metals, equipped with modern equipment and advanced technologies. Highly qualified staff is working. The factory is engaged in the collection of non-ferrous metal scrap and waste, primary processing of non-ferrous metals, collection and recycling of discarded lead-acid batteries. In 2017, the company recycled 180 tons of electronic waste.

Only about 20% of the electronic waste is recycled around the world.

The following factors have a negative impact on the rapid development of the electronic waste recycling industry:

- Complex production specifications (special high-precision high-tech equipment and the need for specialists working on them);
- high labor costs, size, diversity of recyclable items by hazard class, different levels of demand in the markets;
- no stable demand for the disposed fraction, no stable flow of waste, no collection infrastructure.

Environmental problems will be eliminated and the economy of country will benefit by solving the above tasks, by creating an effective system of work on the use of e-waste as a secondary raw material.

References:

1. A New Circular Vision for Electronics Time for a Global Reboot In support of the United Nations E-waste Coalition. January 2019. http://www3.weforum.org/docs/WEF_A_New_Circular_Vision_for_Electronics.
2. Umair, S., Björklund, A. and Petersen, E. E. (2013). "Vital Waste Graphics," Global Resource Information Database (2005), accessed at <http://www.grida.no/publications/vg/>
3. Africa Institute (2012). Hazardous waste inventory report for Mauritius, The Africa Institute for the environmentally sound management of hazardous and other waste.
4. Haraldrud varmesentral, Oslo[Электронный ресурс]// Norsk Energi[Официальный сайт]. URL: <http://www.energi.no/56-mw-trepulverkjel-pa-haraldrud-i-full-drift-2>
5. Groruddalen Miljøpark[Электронный ресурс]//Norsk Gjenvinning[Официальный сайт]. URL: <http://www.norskgjenvinning.no>
6. Arsrapport 2013. Kapittel 2[Электронный ресурс]//Norsk Gjenvinning[Официальный сайт]. URL: http://www.norskgjenvinning.no/_attachment