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PROBLEMS OF IMPLEMENTATION OF CIRCULAR ECONOMY MODELS AT UKRAINIAN ENTERPRISES

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Abstract. The relevance of the application of the circular economy for the Ukrainian market is outlined in the article, the state of waste management in Ukraine is analyzed, the state of implementation of circular business models at Ukrainian enterprises is examined, barriers that prevent the effective implementation of circular models are identified and described, the ways to overcome the identified problems are provided.

Key words: circular economy, sustainability, resource efficiency, product life cycle, recycling, waste management.

Introduction.

The circular economy involves the transformation of approaches to the production, consumption and distribution of resources with the aim of extending their life cycle, multiple reuse of products and reducing the level of waste. In today's conditions of depletion of natural resources and critical environmental situation in the world, this model is particularly relevant.

In the Ukrainian market, the concept of the circular economy is beginning to spread, but the level of its development is at an embryonic stage.

Main text.

The transition to a circular economy model is necessary for domestic enterprises for several reasons.

First, the economic model of the post-Soviet countries has always been based on the use of a significant amount of resources, cheap energy, low labor costs, an unbalanced system of environmental taxes and fees for environmental pollution. The relatively low level of prices on the market of primary resources and energy contributed to the use of outdated resource-intensive and energy-consuming technologies. In this regard, reuse of materials and products was not an economic priority, given the ease of obtaining new raw materials. As a result, this created an inefficient system of wasteful use of natural resources.

Secondly, the linear model of production in Ukraine caused a high level of waste throughout the production chain in production, which accumulates on huge areas of overflowing landfills. The country is one of the leaders in the world in terms of energy intensity of production [1].

Thirdly, the introduction of circular economy models and priority state support in this direction is an important step in European integration processes. Since the European Commission in 2014 recognized the transition to circular economic models as a priority direction of development, this transformation is also relevant for Ukraine [2]. In 2017, the Government of Ukraine, with the assistance of the UN system in Ukraine, presented the National System of Sustainable Development Goals [3]. It was in this document that the priority task for Ukraine regarding the transition to the



principles of circular economy was established for the first time. This will enable domestic enterprises, and the country in general, to increase the level of competitiveness and investment attractiveness on the international market.

Fourthly, the COVID-19 pandemic has caused an excessive generation of plastic waste and medical waste in connection with the use of personal protective equipment, as well as additional packaging of goods in order to preserve their sterility. Nevertheless, quarantine restrictions became an impetus for the development of the circular economy, since such a crisis situation revealed weaknesses in the existing economic model: its low adaptability to global challenges, the scale of overproduction, uneven distribution of resources, shortcomings in logistics flows, the need for digitalization of many areas of industry. The circular economy is aimed at sustainability in the conditions of dynamic changes in the external environment and depletion of natural resources [4].

It can be concluded that for Ukrainian enterprises, the transition to the circular economy model provides the following advantages: an increase in the level of international competitiveness and trust in Ukrainian business; the use of innovative technologies in various sectors of the economy; creating favorable conditions for attracting foreign funding and receiving international grants; promotion of European integration processes; the possibility of creating new jobs and potential GDP growth in the long term; strengthening of social and environmental responsibility of enterprises; a general change in the production system and consumption culture.

To emphasize the relevance of the implementation of circular economy models by Ukrainian enterprises, the latest statistical data on the management of household and industrial waste were analyzed.

According to the report of the Ministry of Communities and Territories Development of Ukraine on the state of household waste management in Ukraine for 2021 and the report of the State Statistics Service of Ukraine on the generation and management of waste, almost 10 million tons of household waste and 462 million tons of industrial waste were generated on the territory of the country [5; 6].

About 22% of the population of Ukraine is not covered by household waste removal services. The worst indicators are observed in the Kirovohrad region (only 64.8% of the population is covered by household waste removal services) and in the Volyn region (the level of coverage is 69%).

In Ukraine, separate collection of waste has been introduced in 1,725 settlements, 34 waste sorting lines, 1 waste incineration plant and 3 waste incineration plants are operating. In total, about 7.64% of household waste was processed and disposed, of which: 1.14% was incinerated, and 6.5% of household waste went to recycling points and waste processing lines. As for industrial waste, the level of its utilization as of 2020 is about 29%. These indicators are extremely low in comparison with European countries, where about 75% of the total volume of waste is subject to disposal [4-6].

A critical situation is also observed in the overloading of landfills: 230 units. (3.8%) is overcrowded, and 824 units. (13.8%) do not meet environmental safety standards.

Therefore, the state of waste management in Ukraine is inadequate, which



confirms the need to change approaches to the use of resources.

The implementation of the circular concept involves 5 main business models: recycling (the most resource-intensive model), resource recovery (partial recycling of certain elements or materials of the product), product life cycle extension (repair and maintenance of products), rental and leasing, as well as the creation of exchange and sharing platforms (possibility of benefiting from the resource by as many consumers as possible) [7].

It is worth noting that in recent years, the first effective projects created on the basis of circular economy have appeared in Ukraine, for example, projects for the creation of biogas complexes, processing of fallen leaves into paper, production of glasses frames from coffee grounds, etc. Upcycling of clothes is also a current trend. Ukrainian producers have started to use worn clothes and waste from other industries as secondary raw materials to create new clothes. To a large extent, projects related to the circular economy in Ukraine are taken under the control of foreign partners and investors.

Nevertheless, there are certain obstacles to the implementation of the circular economy in Ukraine, namely: the absence of appropriate legal regulation in this area, high initial costs for the transformation of production systems, low level of awareness of the population regarding conscious consumption, dominance of producers of primary raw materials on the market, lack of established systems of circular supply, low level of development of reverse logistics, etc.

Figure 1 shows the barriers that can stop the implementation of circular economy practices at Ukrainian enterprises.

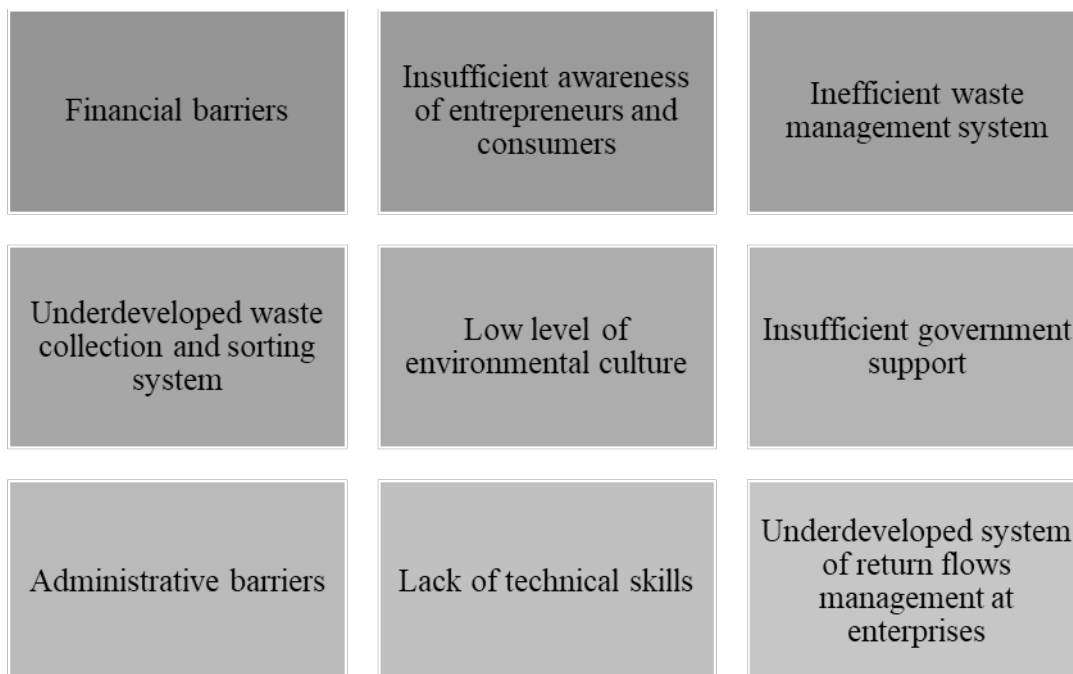


Figure 1. Obstacles to the implementation of circular economy models at Ukrainian enterprises

Source: compiled by the author based on literature [8-11]



Financial barriers mean that the cost of green innovation and circular business models is one of the biggest and most significant costs. Start-up costs and expected returns are particularly important for small and medium-sized businesses compared to large corporations. The research of a number of scientists and the analyzed practical experience indicate that, as a rule, this reason does not allow the introduction of recycling schemes. It is worth noting that the high initial costs of implementing circular business models are justified in the long term, because in the future their use affects the reduction of raw material costs.

Lack of the circular economy concept awareness means lack of knowledge about the potential benefits and benefits of using recycling, resource recovery and exchange platforms is another barrier to implementing a circular economy. An interesting point is that firms not only ignore the potential financial benefits, but also find this practice very costly to their business.

An inefficient waste management system is a very acute problem for the implementation of a circular economy in Ukraine, since a large number of landfills are overloaded, a significant amount of waste is buried in them and cannot be disposed of, and not all residents have the opportunity to use the garbage collection infrastructure. All these factors complicate the use of waste as secondary resources which is crucial for circular economy models implementation.

The consequence of the previous problem is an underdeveloped waste collection and sorting system. In Ukraine, there is a lack of appropriate infrastructure and a system of encouraging citizens and businesses to sort waste, as well as informational support regarding different types of waste that are subject to disposal.

The most important problem in the implementation of the circular economy is the low level of environmental culture, public rejection of alternative approaches to production and consumption. The implementation of the circular economy must begin with a re-awareness of consumer habits. This also applies to the vision of enterprises and firms in various sectors of the economy, and the production of green and circular solutions, because there are always those who respond positively to the challenges of green business, and those who do not see the meaning in circular actions. This divergence of views regarding green businesses is caused by various reasons depending on the industry in which they operate.

Insufficient state support in the field of implementing the circular economy means a lack of transparency at the legislative level of such concepts as producer responsibility, the quality of individual stages of recycling, reusing and recovering which are the main circular business models. There is also no system of encouraging enterprises to implement circular solutions.

Administrative barriers include, first of all, the absence of environmental legislation and clear regulation in this area.

The lack of technical skills is due to the fact that many representatives of small and medium-sized businesses do not have the technical capabilities and opportunities to identify, adopt and implement technological solutions for the implementation of circular business models.

An underdeveloped return flow management system at enterprises represents the insufficiency or lack of the supply chain support. Small and medium-sized businesses



have very little influence on the involvement of their suppliers in sustainable development practices, and also do not establish the necessary feedback with consumers in the aspect of returning used goods for their further restoration or processing.

The key tasks of the formation and implementation of circular economy policy in Ukraine are [12]:

- to provide an appropriate regulatory framework for the transition of the state to the principles of a circular economy and to set clear goals for business entities and society;
- to strengthen the work on creating a system of environmental protection legislation;
- to stimulate the development of environmental protection technologies, to make the latter a new point of economic growth;
- to conduct information campaigns for the population aimed at improving awareness and understanding of circular economy and encouraging changes in behavior.

Summary and conclusions.

The concept of the circular economy is an integrative, alternative vector of the development of the global economy. But along with potential benefits, advantages, and positive implemented experience, there are a number of potential obstacles that prevent the recycling process from unfolding to the maximum.

During the study, key obstacles to the implementation of circular economy models at Ukrainian enterprises were identified, namely: financial barriers, insufficient awareness of entrepreneurs and consumers, ineffective waste management system, underdeveloped waste collection and sorting system, low level of environmental culture, insufficient state support, administrative barriers, lack of technical skills, underdeveloped system of return flows management at enterprises.

In order to improve and overcome these barriers, it is necessary to start with increasing public awareness of conscious consumption, ecological business and the concept of sustainable development. Another important step is the development of state support for enterprises that implement circular solutions in their activities.

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