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CHALLENGES AND PERSPECTIVES FOR THE DEVELOPMENT OF THE CIRCULAR ECONOMY IN UKRAINE. EU EXPERIENCE

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Today, the impact of human activity on the environment continues to grow. Finite resources, increasing waste and rising pollution can lead to a deterioration in human well-being and, from a business perspective, threats to competitiveness, profitability and business sustainability are also on the rise.

The linear economic model has so far been dominant in most countries of the world [1]. This model can be described by a chain of «take, make, use and discard». This means that manufactured goods are simply thrown away after they have been used. At the same time, this economic model has led to several negative consequences:

– a growing shortage of resources, which has led to an increase in their price;

– the constant emission of waste pollutes the environment and threatens most of the planet's ecosystems;

– the emission of carbon dioxide into the atmosphere leading to global warming;

– increasing areas of land that are contaminated or used for waste storage, which could be used for other purposes.

Climate change and the depletion of natural resources are clearly negative processes that require the implementation of a circular economy. At the same time, society itself must change – from the choice of raw materials, product development methods and new service concepts to the widespread use of by-products from one industry as the entire raw material for another.

The circular economy is an economy that is inherently circular and recycling. According to Deming Chen [2]: «A circular economy is a model of economic development according to which material resources can be recycled, i.e., reintegrated into production. The goal of a circular economy is to ensure the endless use of material resources». This economic model can be described in terms of a chain of «take, make, use, recycle». The main objective of implementing a circular economy is to modernise production in order to minimise the resources used and the waste produced. In a circular

economy, waste is a source of added value. The circular economy is therefore an important component of the fourth industrial revolution (the transition to environmentally friendly and resource-efficient natural production).

Experts identify various methods of modernising production in the circular economy [1; 3; 4]:

– use of innovative production technologies that use a minimum amount of resources;

– introduction of eco-design for products;

– modification of production to generate recyclable waste;

– minimising the amount of waste generated that cannot be recycled (the ideal of a circular economy is the absence of such waste).

Today, the most notable results in the transition to a circular economy have been achieved in the European Union (EU), where the European Resource Efficiency Platform brings together EU countries with the aim of ensuring a transition to a circular economy based on the reuse of primary raw materials and high-quality processing. The importance of implementing a circular economy is reflected in the Sustainable Development Goals (key development areas for 2015–2030 identified at the UN International Summit on 25 September 2015) [5]. Firstly, the importance of rational consumption and production is highlighted in Goal 12 «Responsible consumption and production». For example, to address specific wastes associated with significant resource losses or environmental impacts, the EU has adopted individual approaches (Table 1).

According to EU estimates, «the introduction of resource-efficient production technologies at all levels of the production chain would reduce the demand for industrial raw materials by 17–24% by 2030 and reduce the annual costs for businesses by €630 billion» [8].

In Ukraine there is almost no system for the separate collection of household waste, of which packaging waste is a part. There is also no system for managing hazardous waste and waste electrical equipment and batteries. In addition, 94% of household waste is disposed of in dumps and landfills, and secondary raw materials are wasted every year, mainly due to the lack of relevant legislation. As a result, only 12–15% of packaging waste and up to 5% of municipal solid waste is recycled in Ukraine [9]. The number of landfills in Ukraine is increasing due to the lack of proper mechanisms for recycling waste and rubbish. In order to improve this situation, the methods of waste recycling and the pricing of these services need to be reviewed.

Ukraine signed the Association Agreement with the EU, in which it committed itself to increasing waste recycling and reusing it in the economy. The reforms that our country is implementing are aimed at getting rid of its dependence on the export of natural resources and goods with a low degree of processing.

Table 1

EU experience in dealing with certain types of waste

The sphere	Activities
Food waste	Commission proposes that EU Member States develop national food waste prevention strategies and aim to reduce food waste from production, retail, food services and households by at least 30% by 2025.
Marine waste	Full implementation of the measures in the EU waste package could reduce marine waste from 13% in 2020 to 27% in 2030.
Hazardous waste	As a first step, the EU strengthens its record keeping by establishing a hazardous waste register and identifying the capacity of hazardous waste management systems in EU Member States.
Construction and demolition waste	Projects aimed at improving the management of construction and demolition waste will be included in the assessment of the environmental performance of buildings, as indicated in the European Commission's Communication on opportunities to improve resource efficiency in the construction sector
Recycling of key raw materials	The European Commission promotes the efficient use and recycling of key raw materials through the Raw Materials Initiative and the European Raw Materials Innovation Partnership.
Plastic waste	An important initiative to improve the management of plastic waste is the introduction of restrictions on the use of plastic bags in EU Member States, a gradual increase in recycling and a move away from landfills. It is envisaged that all plastic packaging should be recycled by 2030.
Illegal waste shipments	The European Commission has stepped up its efforts to ensure compliance with relevant EU legislation, in particular EU Regulation 1.

Source: developed by author based on [6; 7; 8]

According to the National Institute for Strategic Studies, the current areas of bilateral cooperation with the EU in this area are the development of alternative energy sources in Ukraine, the creation of production facilities for the processing of household and industrial waste, and the development of organic food products. Due to the presence of large markets in the EU and the significant demand for these products from industrial enterprises and households, the European Commission strongly supports the development of such industries [10].

Thus, a step towards the introduction of a circular economy in Ukraine has been made, but this issue still remains open. However, given the heavy losses and destruction of Ukraine's industrial complex due to Russian aggression, Ukraine needs to transform both its economic and industrial systems. An important step on this path to implementing a circular economy in the country is to make the population aware of the importance of this issue. Because no matter what laws the government adopts, it all starts with the understanding of every citizen, business, and organisation of the importance of implementing circular economy principles in their own activities and

building the recovery of Ukraine and its economy on the principles of circularity and rational use of natural resources.

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