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The Mechanism of Forming the Strategic Potential of an Enterprise in a Circular Economy

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Abstract: In the framework of this study, significant features of the formation of the strategic potential of the enterprise in a circular economy are identified. The characteristics and elements of the strategic potential of the enterprise, which can ensure its integrity and continuity of operations, are highlighted. The authors conducted and analyzed a theoretical review of the concept of the “circular economy” and its impact on business and resource conservation and environmental protection. The conditions for the transition to a circular economy at the macro level are formed. The key stages of ensuring the strategic potential of the enterprise, taking into account the internal and external environmental factors, are highlighted. The authors forecast the volume and dynamics of waste until 2027 using the Cobb–Douglas function. The mechanism of the formation of the strategic potential of the enterprise in the conditions of a circular economy is offered. This mechanism provides for the potential compliance with the strategic goals of the enterprise, as well as the rationality and balance of structural elements. Assessing the compliance of strategic potential with the developed strategy allows decisions to be made on the implementation of measures to meet the objectives of the enterprise, or to search for opportunities and reserves to improve its level. A set of measures aimed at the effective implementation of the proposed mechanism and the results of resource-efficient production is developed.

Keywords: potential; strategic potential; circular economy; mechanism of formation of enterprise strategic potential; strategic management



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1. Introduction

The strategic priority of the sustainable development of the state is to form a qualitatively new model of the national economy. It should be based on the symbiosis of the circular and the ecological economy, promoting the use of local resources to meet the needs of the economy and the formation of closed material and resource cycles. Circularity is one of the forms of dynamic socioeconomic system development at different levels of management.

According to Ansoff, the strategy of the enterprise, which relates to defining the goals and objectives of the organization and ensuring that its relations with the external environment meet its internal capabilities, will allow economic stability in the market [1].

The substantive aspect of the theory of strategic management emphasizes that enterprises operating in the same external environment develop differently, and have different successes depending on the content of the strategy and strategic potential implemented [2]. Therefore, an effective business management strategy is the key to success.

The definition of strategic potential is based on a systematic approach to considering the conditions and results of the functioning of the enterprise as an open system. According to this approach, the enterprise is considered to be a system of resources, the interaction of

which determines the achievement of the results. The potential capabilities of the enterprise in the effective use of resources characterize the strategic potential of the enterprise.

When forming the strategic potential of the enterprise, it is necessary to proceed from the fact that its structure is a certain interdependent set of local potentials, i.e., the potential of each type of resource that ensures the most effective long-term goals and strategic directions of enterprise development. For each strategic direction, a common vision is formed, which reflects its degree of attractiveness to the company compared to others. Further comparison will make it possible to choose the most attractive strategic direction and most effective type of enterprise strategy, taking into account the state and trends of the strategic potential [3].

In the context of limited natural resources, the peculiarity of the circular economy as an objective basis for the functioning of the economic environment is that the waste products are not garbage, but rather are useful resources for the output of an innovative product, created by business entities involved in innovative cooperation. The symbiosis of an ecological, circular economy and strategic potential needs the development of the mechanism of interaction between the subjects of the circular economy and the tools to ensure this interaction. Therefore, in our opinion, the formation of the mechanism to ensure the enterprise strategic potential should focus not on the individual components of the system, but on the principles of its construction and features of its management, allowing the building of a rational strategy to find ways to ensure adaptability and flexibility in a transformational period.

2. Literature Review

The modern market environment is characterized by the instability and unpredictability of events, insufficiently effective economic legislation, and a lack of developed infrastructure. These, among other factors, make it impossible for companies to function normally and lead to the need to formulate alternative strategies.

Scientists from various research centers, such as Ansoff [1], Kozenkov [2], Strickland, Thompson [3], Shershneva [4], and others, have covered the problems of strategic management in their research. Strategic management is more often discussed in the context of modern technologies supporting decision-making processes [5–13]. However, despite the achievements of the scientists, many theoretical and practical issues in this field of knowledge are still insufficiently solved, so the study of the issues of strategic potential management is important and necessary.

Research on the formation of a circular economy has been conducted by many scientists [14–29]. From the point of view of the implementation of the circular economy, the innovative potential of enterprises is also significant [30–32]. The analysis of the results of research on the circular economy allowed us to determine the lack of a unified approach to the formation of interactions between the circular and ecological economies, which determined the relevance and practical significance of the chosen field of research. The generalization of the results of scientific research on the problems of the circular economy made it possible to conclude that the circular economy model is a system that, firstly, is based on the renewal of resources, and secondly, in which the input external flows in the form of resources do not have a negative impact on society and the environment.

According to Bogatskaya, the strategic potential of an enterprise is a totality of the available resources and capabilities (abilities) for the development and implementation of the enterprise strategy [33]. However, according to the authors, the strategic potential of the enterprise is characterized not only by the available resources, but also by the potential capabilities of the enterprise to improve the efficiency of their use. Thus, Gedroyts characterizes strategic potential as the economic capabilities of an organization that can be used to achieve strategic goals [34]. This is why managing the process of forming the strategic potential of an enterprise under the conditions of instability and unpredictability of events is extremely important, because it allows the analysis of the influence of external

and internal environmental factors, and provides opportunities for the elimination of potential threats in a circular economy.

Numerous scientific publications are devoted to the methodological application of various aspects of the cyclic development of economic processes. The idea is not new. It first appeared in the considerations of Kenneth E. Boulding in 1966 [35]. The term “circular economy” was used in the study by Kneese in 1988 [36]. In the program document of the concept of sustainable development (Agenda 21, 1992), the idea of recycling was promoted [37]. The importance of scientific advice in achieving the goals of sustainable development was emphasized [38]. The circular economy concept was presented by the European Union in 2014. A new plan in this area was outlined by the EU in 2020, outlining a vision of a climate-neutral and competitive economy based on a circular economy [39]. In this article, the circular economy will be presented in symbiosis with the ecological economy and the strategic potential of the company. Table 1 shows the views of the main scholars who have had a great influence on the characterization of the concept of the circular economy in the context of strategic potential.

Table 1. Basic interpretations of the concept of a “circular economy”.

Author	Definition of “Circular Economy”	Source
Pakhomova, Rikhter, and Vetrova (2017)	Recovery and closed economy. Characteristic minimization of consumption of primary raw materials and amount of processed resources, with simultaneous reduction of areas occupied by corresponding landfills and unorganized landfills	[40]
Geissdoerfer (2017)	Regenerating system in which resource costs, emissions, and energy losses are minimized by closing and reducing material and energy cycles	[41]
Korhonen, Nuur, and Feldmann (2018)	Sustainable Development Initiative, which aims to reduce linear material and production flows in production-based and consumption-based systems, use of material cycles, and renewable and cascading energy flows	[42]
Lieder and Rashid (2016)	Solve problems related to waste generation, resource scarcity, and sustainable economic benefits	[43]
Pilyugina (2016)	An economy that increases people’s wellbeing and ensures social justice, while reducing risks to the environment	[44]

An analysis of the scientific publications on the study of circular economics shows a deep understanding of the existing problems by scientists and the gradual formation of theoretical and methodological approaches to their solution. Based on the generalization of the views on this category, we can identify the following areas of interpretation of the circular economy: restrictions to the level of democratic freedoms; limiting population growth; limiting the level of individual consumption; overcoming economic inequality at the country and global levels; radical increase in investment in resource recovery; and prohibition of the implementation of large technogenic and dangerous projects.

A prerequisite for the formation of the strategic potential of the enterprise in a circular economy is the search for new tools that can ensure harmony between economic growth and environmental sustainability to ensure economic and environmental security and, consequently, to reduce the harmful effects on the environment. This is why the formation of the strategic potential of the enterprise should be based on the proper use of resources, which consists of the recycling of almost any commodity, which will ensure the further implementation of innovative and investment processes and ensure zero-waste production. In contrast to the traditional economy, the circular model is the most successful way to conserve resources and materials, so it is able to overcome the potential threats from environmental pollution, can implement environmental policy, and can reduce the preventive costs of the enterprise.

Thus, according to the authors, the main elements of the strategic potential of the enterprise consist of the following elements: (1) the quantity and quality of resources in enterprises (production and property potential), namely, the number of employees, fixed and non-productive assets or inventories, financial and intangible resources, patents, licenses, information, and technology; (2) the educational and qualification characteristics of the personnel of the enterprise and their ability to create certain kinds of products or services (labor potential); (3) marketing potential, systematic research market, consumers, and competitors; the production of high quality products to meet the needs of consumers; increasing the level of competitiveness among enterprises in the market; the application of modern tools in the practice activity of the enterprise; acquaintance of consumers with products or services; the development and maintenance of corporate style and image enterprises in the market; (4) financial potential: ensuring the appropriate level of financial stability, liquidity, and profitability of the enterprise; (5) information potential: the ability of the enterprise to generate, transform and use information resources; (6) innovation potential: the use of modern forms and methods of organization and business process management; renewal of technical and technological basis of production; (7) organizational and managerial potential.

3. Materials and Methods

To ensure the economic sustainability of the enterprise, the system should cover several elements, among which is the monitoring of the sustainability of the business processes of the enterprise under the influence of the external and internal environment, in the context of investment and security aspects, as well as the development of effective measures to prevent the risks of unstable activity [45].

It must be recognized that economic development directly depends on saving the use of resources, as it will reduce the dependence on raw materials through the continuous processing of goods and materials.

Based on a systematic approach, the mechanism of the formation of the strategic potential of the enterprise is evaluated as the total value of the potential of the enterprise, and the value of its elements. The total strategic potential of the enterprise is not calculated as a simple sum of its constituent elements, but as an integral indicator through the heterogeneity and sometimes incomparable estimates of individual elements, as well as the need to consider the synergistic effect of their interaction (Formula (1)):

$$SPE = \sum_{i=1}^n \int (p_1, p_2, p_3, \dots, p_n) \quad (1)$$

$$\text{condition } SPE \rightarrow p_n + 1,$$

where SPE —strategic potential of the enterprise, and $p_1, p_2, p_3, \dots, p_n$ —elements of the strategic potential of the enterprise [4].

It is the process of the formation of the strategic potential of the enterprise that allows the effective use and careful saving of limited resources.

The concept of a circular economy involves the efficient use of resources and a reduction of the negative impact on the environment from the production and consumption of goods and services on all cycles, that is, from the extraction of raw materials to the final use. The formation of the strategic potential of the enterprise in a circular economy will reduce the negative impact on the environment by reducing the use of resources in production and, as a result, creating a cleaner and safer environment; reducing production costs by reducing the quantity of primary resources used; and creating new markets and, consequently, new jobs, which contributes to the overall level of prosperity.

The mechanism of the formation of strategic potential of the enterprise in the conditions of a circular economy, shown in Figure 2, is based on the selection and creation of its unique combinations of resources and distinctive competencies, taking into account the results of the search for new opportunities. This is achieved through the research of enterprise

and market potential, which creates the pre-conditions for the readiness of the enterprise for market changes, increasing the range of alternatives for enterprise development.

4. Results and Analysis

Taking into consideration the basic structural constraints outlined above, the circular economy on the principles of strategic enterprise potential should be much more efficient and technologically advanced, but the main criterion of its efficiency will no longer be the size of the profit (Figure 1).

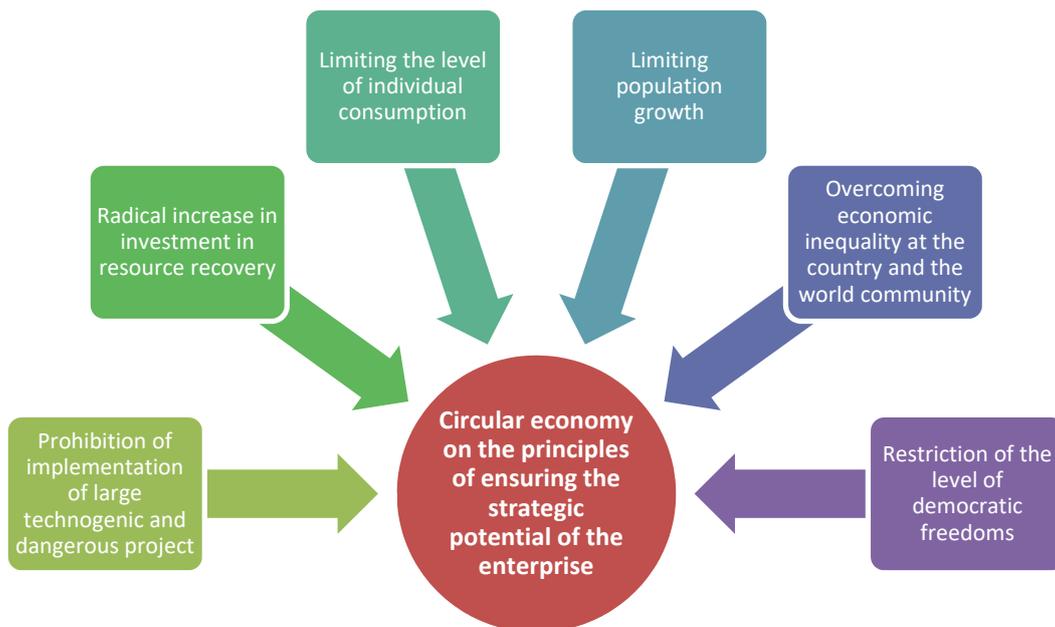


Figure 1. Task limits and forming conditions for transition to circular economy on the macro-level. Source: own study.

Depending on the specifics of their activities, enterprises can set different strategic goals in the area of their development, such as maintaining and strengthening the efficiency of the distribution and use of resources and energy in production chains, initiating new niches for business, changing the approach to services, transforming products into services, and creating exchange platforms, among others. Integrating the principles of a circular economy into the enterprise operations can create a long-term competitive advantage. For this purpose, it is recommended to follow a systematic approach, including the planning and analysis of external and internal environments, the development of strategic alternatives, and the formation and implementation of mission and strategy. Each of the abovementioned stages has some peculiarities in the conditions of the implementation of the circular economy.

Different aspects of revealing the relationship between the organizational behavior of the enterprise and its development have elements of corporate culture, which influence the very process of its management, reflected in the work of Kwilinski [46]. Thus, the features of corporate culture also influence the vitality of the enterprise, and as a consequence, can affect its level of profit. Moreover, one of the ways of forming the strategic potential of the enterprise and providing a higher level of competitiveness is creative human capital, as well as knowledge and research results. Their effective implementation in enterprises will contribute to the successful economic development of the country [15].

When constructing the mechanism of the formation of the strategic potential of the enterprise in the conditions of a circular economy, the system approach is applied, which can provide self-organization and self-reproducibility as a separate process, and the enterprise as a whole in the context of the national economy.

The mechanism of the formation of the strategic potential of the enterprise in the conditions of a circular economy, shown in Figure 2, is based on the selection and creation of its unique combinations of resources and distinctive competencies, taking into account the results of the search for new opportunities. This is achieved through the research of enterprise and market potential, which creates the pre-conditions for the readiness of the enterprise for market changes, increasing the range of alternatives for enterprise development.

The main feature of the proposed mechanism is the formation of strategic potential in a circular economy, because the principles of cyclicity and conservation of resources ensure the profitability of the enterprise by reducing costs and resources. The main stages of the formation of the strategic potential of the enterprise, within the limits of the application of this mechanism, are the result. The main components of strategic potential and the circular economy are determined under the influence of the factors and methods of application. As a result, this mechanism provides resource-efficient and clean production, environmental protection, waste-free production, and the minimization of consumer resources.

Prospects for further research are associated with the development of the adaptability and flexibility of the strategic potential of the enterprise.

The positive effect of the implementation of this mechanism of the formation of the strategic potential of the enterprise will be expressed in:

- Promoting the creation of new productions and differentiation of products that will have a high level of competitiveness at the international level;
- Increasing the innovativeness of both the enterprise and its products;
- Orientation of efforts to achieve full and productive employment of the population;
- Preservation of the effective creation of new workplaces and improvements to the quality of the labor force.

Another significant part of the circular economy is the issue of the formation of an environmentally effective waste management policy.

Figure 3 shows general analytical information regarding waste generation and management indicators for the period 2011–2019. According to the data, the amount of waste sent to landfills tends to decrease, although this positive trend is due to a negative factor—a decrease in the pace of development of the real sector of the economy.

As can be seen from Figure 3, the largest indicator has exactly the same formation of waste as its utilization and disposal, which indicates a significant problem in this aspect and the pollution of the environment.

In 2014, this indicator increased sharply to 0.084%, which is directly related to the beginning of military operations and subsequent territorial changes in the country, which affected the nationwide volume of waste accumulation, and continued to grow until 2018, amounting to 0.09%. In 2019, the region's share in the total volume of waste accumulated in Ukraine decreased slightly (to 0.078%) and generally remains insignificant.

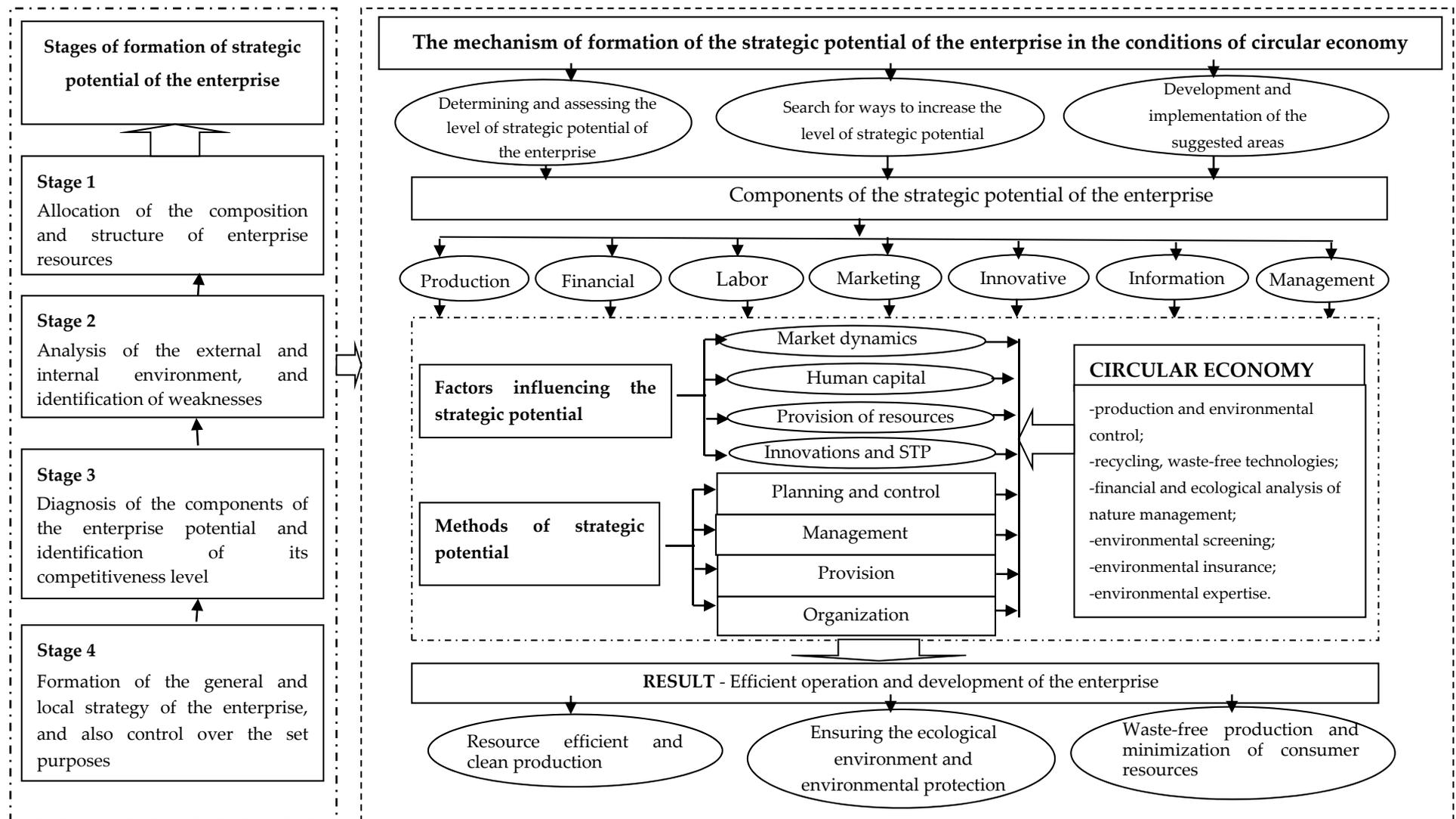


Figure 2. Mechanism of the formation of strategic potential of the enterprise in the conditions of a circular economy. Source: own study.

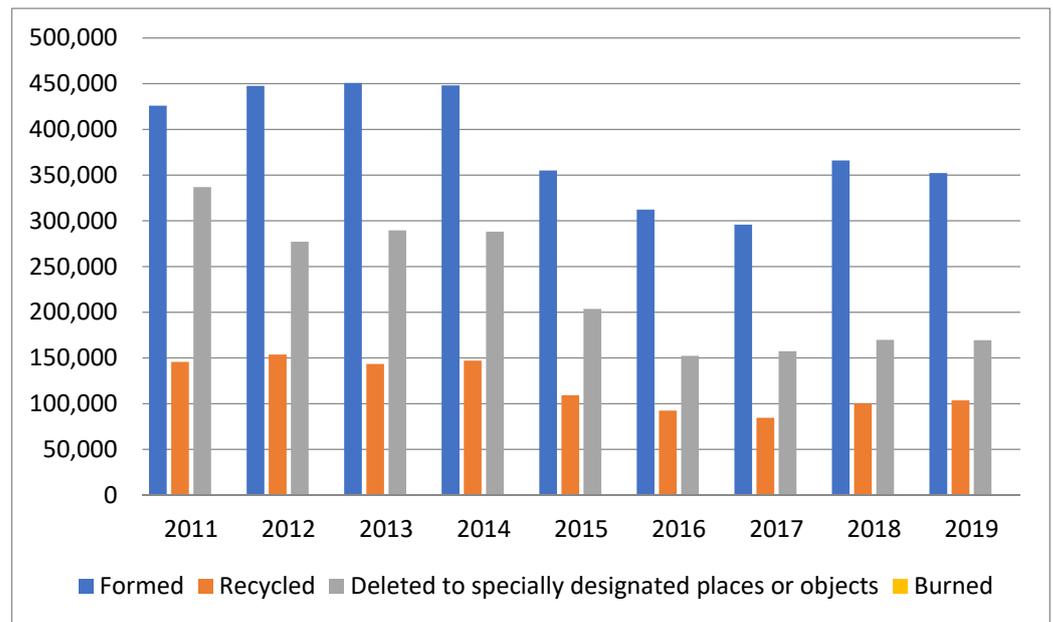


Figure 3. Indicators of waste generation and handling for 2011–2019 (thousand tons). Source: State Statistics Service of Ukraine [47].

According to the global experience, countries such as Germany, the USA, China, Japan, and Great Britain are cited as references regarding methods and means of non-adverse impacts of the lack of waste disposal. Germany is one of the world's leading countries in terms of the amount of recycled waste, where 66% of waste is recycled. The government of this country has obliged manufacturers to label goods according to specific waste categories. The introduction of the collateral value of packaging, along with multicolored containers for different types of waste, contributes to the recycling processes. Campaigning has also played an important role. For Germans, it is a civic obligation to promote waste sorting [48].

The USA has introduced separate garbage disposal (waste sorted by the owner is taken away free of charge). As in Germany, there is a deposit value of packaging. Innovative technologies for recycling and waste disposal should be noted [48].

China has a large number of recycling plants. At this stage, the government promotes recycling by introducing fees for separate waste. The government plans to impose fines for unsorted garbage. Recycling is also promoted by special garbage collectors who buy garbage from ordinary people and resell it to special institutions. Campaigning has been implemented to a lesser extent [48].

In Japan, the problem of recycling is especially urgent given the size of the country. Large-scale propaganda is not necessary due to the peculiarities of religion (Shintoism) and the worldview of the Japanese. It is quite usual to classify waste into four categories: incinerable, non-incinerable, recyclable, and large-sized. Penalties for violating recycling rules can be imposed onto the entire housing cooperative. Ultra-modern technology is used for recycling and incineration. Japan is another world-leading country in terms of recycling and waste disposal [48].

For a long time, Great Britain lagged behind other countries in waste management. However, in recent years, the situation has improved significantly. A system of waste sorting has been introduced. Regarding the advocacy work, the government has chosen a slightly different strategy. All violations of waste sorting rules are punished with substantial fines. Even the excessive weight of waste is considered to be a violation [48].

To ensure the minimization of the appearance and destruction of unprocessed waste and to prolong the duration of the exploitation of products, the main aim is the effective use of available resources by forming the strategic potential of the enterprise in a circular economy.

The characteristic features of strategic potential are the reflection of the past, i.e., a set of properties accumulated by the system during its establishment, and conditioning the possibility of its functioning and development; determination of the level of practical application and use of available opportunities; and orientation towards development (for the future), i.e., it can be stated that strategic potential is the basis for developing an effective strategy and ensuring an appropriate level of enterprise development. The mechanism of the formation of the strategic potential of an enterprise is determined by:

- The volume and quality of its available resources (the number of employed workers, basic production and non-production funds or inventories, financial and intangible resources and patents, licenses, information, and technology);
- The ability of managers and other categories of personnel to create certain types of products, qualification, and motivation potential;
- The ability of management to optimally use the available resources of the enterprise;
- Information capabilities, i.e., the capabilities of an enterprise to generate and transform information resources for use in production, commercial, and managerial activities;
- Innovation capabilities of the enterprise to update the technical and technological basis of production, the transition to new competitive products, the use of modern forms and methods of organization, and management of economic processes;
- Financial capabilities of fundraising [49].

To study the relationship of the above processes, it is advisable to use the Cobb–Douglas production function (Formula (2)) [4]:

$$Q = AL^{\alpha}K^{\beta} \quad (2)$$

In our cost-effectiveness model, we evaluate the effectiveness of applying additional waste processing steps. Of course, additional waste processing steps are a separate component of the circular economy. First, the economic efficiency of increasing resource profitability is the most important consideration, with the second being the economic impact of other circular economy measures. Third, the introduction of additional stages of waste processing, in the vast majority of cases, does not require extremely complex technical solutions.

When creating a model of economic efficiency, we rely on several principles, which are listed below:

1. We operate with three categories of objects of the production cycle: resources (R), wastes (W), and products (Q). We assume that resources are directly proportional to capital.
2. To get rid of conventions with units of measurement, we take into account objects of all three categories in their monetary expression.
3. We assume that during processing, the waste is converted into resources of the same branch of production.
4. For each branch, there is a certain idealized impossible situation in which waste is not generated at all. In this case, the volume of output will only be determined by the applicable resources and the type of production itself. For our model, we slightly modify the Cobb–Douglas function. First, since it is the change in resources and the corresponding change in output that we are considering, we can assume that $L = \text{constant}$. Moreover, we have already noted that resources are directly proportional to capital. Therefore, we will use the Cobb–Douglas function in the following form (Formula (3)):

$$Q = 1.5438 \times C^{1.4919252} \times R^{0.473957048} \quad (3)$$

where C —certain coefficient of proportionality [4].

In the resulting model, there is an increasing effect of scale, because the sum of α and β exceeds 1 (equal to 1.9659). This means that if resources (R) and waste (W) increase in a

certain proportion, the amount of waste will increase in a larger proportion. It was found that, on average, during the analyzed period there was an annual increase in the amount of enterprise waste by 10% and a decrease in the amount of resources by 3%.

Given these assumptions, let us build a forecast of the waste volume for 2022–2027 (Figure 4).

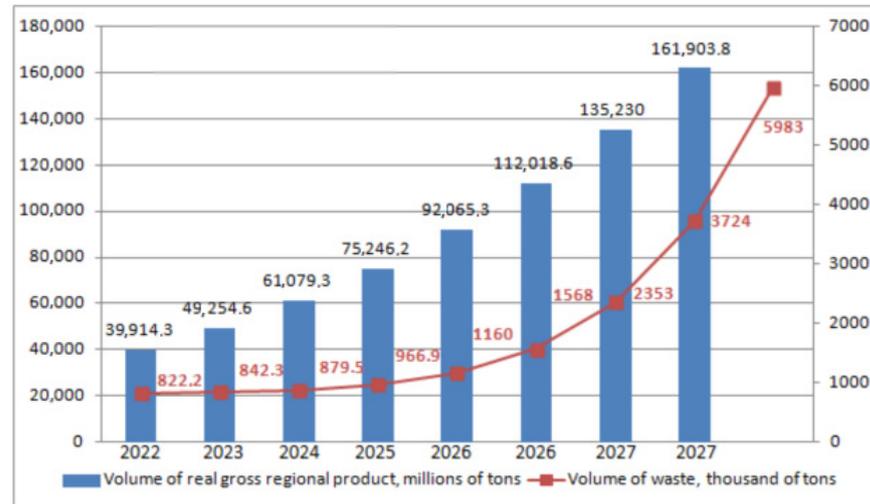


Figure 4. Outlook of the volume of waste, t/million UAH, 2022–2027. Source: State Statistics Service of Ukraine [47].

This is why, with the increase of the load on the environment and the growth of global environmental problems, attention on the formation of the strategic potential of the enterprise with an emphasis on the environmental component is increasing. The introduction of the components of strategic potential, such as production, finance, labor, marketing, innovation, and information, is, in most developed countries, an effective tool for solving both environmental and economic problems.

5. Conclusions

The conducted study, which included the application of conceptual foundations to the formation of the mechanism of the strategic potential of the enterprise in a circular economy, allows us to suggest a number of priority measures that should be implemented in order to ensure this process:

- Multiplication of competitive advantages by improving the quality of products in accordance with the needs of consumers;
- Saving of resources in the process of production at the expense of mastering innovations, realization of the economy of scale, scientific and technical innovations, and improvement of the management system;
- Saving resources and increasing customer loyalty by improving the quality of products;
- Increasing the competitive position of the enterprise due to the introduction of flexible communications and supply chains, organization of service, and warranty service.

The implementation of the suggested measures will allow enterprises to ensure the strategic potential, forming a set of social interrelations, which in a circular economy will contribute to the implementation of the mission of the enterprise, increasing the competitiveness of its activities and ensuring stable development in the transformation of the economic environment of activity.

The authors demonstrated that the processing and conservation of resources allows the company to save production costs and maximize profits. This is why the questions raised regarding the formation of the mechanism of the strategic potential of the enter-

prise in the conditions of a circular economy will reduce the influence on the ecological environment [28].

The experience of developed countries shows the possibility of achieving significant economic, environmental, and social effects through the formation of the waste industry and its transformation into an integral element of the socioeconomic infrastructure of the economy. At the same time, the current unsatisfactory state of waste management in the rural areas of Ukraine encourages the development of effective mechanisms of interaction of different parts of society to address the issues of sustainable development [43].

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