

SECTION 6. ENTERPRISE ECONOMICS AND PRODUCTION MANAGEMENT

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6.1 Motives and goals of implementing the circular economy at enterprises

In today's world, the problem of limited natural resources is becoming more acute, accompanied by an increase in waste and a negative impact on ecosystems. This prompts businesses and governments to search for new economic models that would promote the rational use of resources, minimize waste, and create sustainable conditions for development. One of these models is the circular economy, which is based on the principles of recovery, reuse, and a closed cycle of materials and energy.

The circular economy not only changes traditional production processes, but also offers new ways of creating value for businesses, consumers, and society as a whole. The main goals of implementing this model at enterprises are to increase economic efficiency, reduce environmental impact, and ensure long-term competitiveness.

Implementation of the circular economy (CE) at enterprises is an important component of the transition to sustainable development. It is based on three key principles: minimization of resource consumption, closed loop materials, and creation of added value through effective waste management. For enterprises, this model opens up opportunities to optimize production processes, cut costs and reduce negative environmental impact.

The development of the circular economy can be viewed as a mechanism for achieving the Sustainable Development Goals, due to the interconnection with such processes as digital transformation, globalization of the world economy, and stimulation of innovation. In the context of the circular economy, the Sustainable Development Goals are aimed at creating conditions for the transition to sustainable consumption and production, where resources are used efficiently, waste is minimized, and the environment is preserved and restored. Thus, the implementation of circular economy strategies at enterprises makes it possible to achieve the goals of innovation and infrastructure development, sustainable development of cities and communities,

responsible consumption and production, climate change mitigation, marine conservation, and protection and restoration of terrestrial ecosystems (Ellen MacArthur Foundation, 2020a).

In order to set goals for the implementation of the circular economy at enterprises, it is necessary to identify the key motives of enterprises for the implementation of the circular economy, as motives are the driving force for further formulating strategies and setting goals for enterprises. They are determined by a combination of economic, social and environmental aspects.

Fig. 1 shows the motives for implementing the circular economy at enterprises.

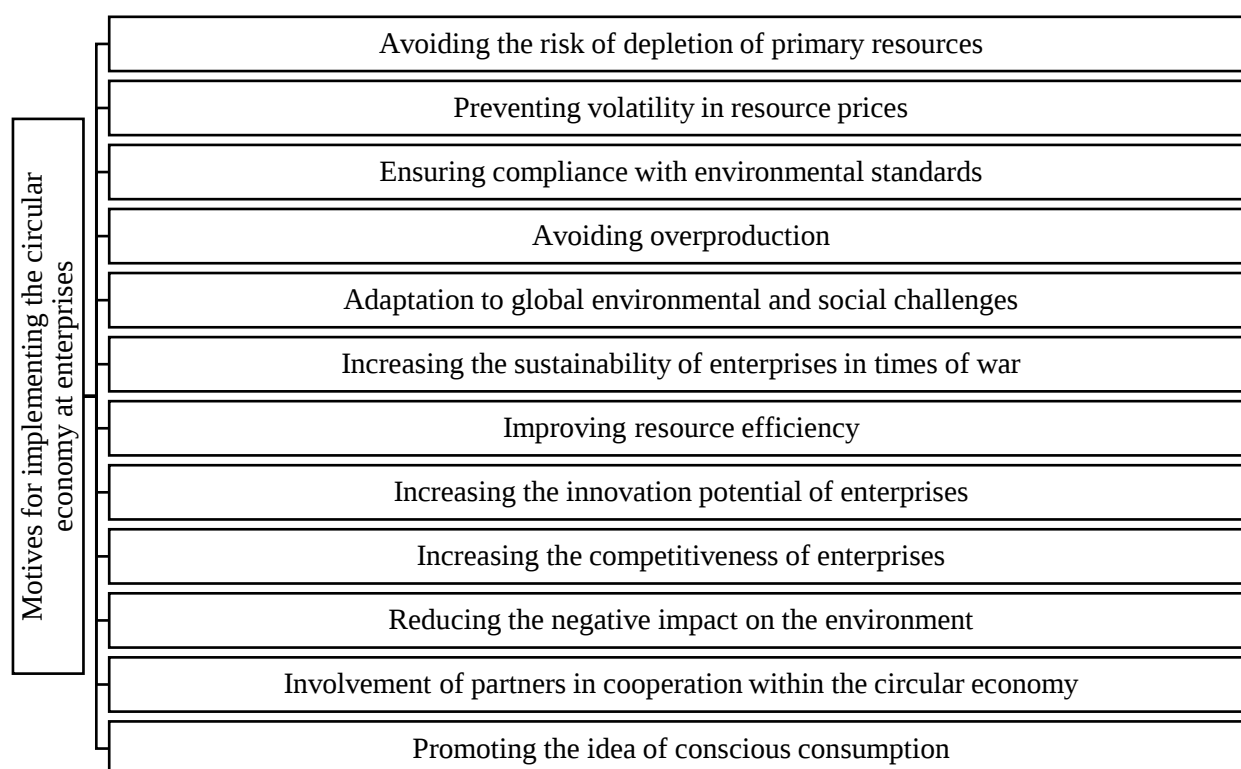


Figure 1. Motives for implementing the circular economy at enterprises

Let us consider each of these motives in more detail.

The depletion of primary resources, volatility of resource prices, increasing requirements and standards in the field of environmental management, and overproduction are key risks of the linear economy, so preventing these risks is one of the key motives for the introduction and development of the circular economy at enterprises, as these risks can significantly reduce the competitiveness of enterprises

and negatively affect the resource efficiency of production processes (Serhienko-Berdiukova, 2015).

Adaptation to global challenges is an essential task of strategic management of enterprises operating in today's complex and unstable environment. Global environmental and social challenges can include a number of factors, such as climate change, pandemics, geopolitical instability, and economic crisis. In the context of the circular economy, global challenges can create opportunities for the implementation of circular business models, which increases the competitiveness and sustainability of enterprises. For example, as a result of the Covid-19 pandemic, the amount of recyclable waste in the healthcare sector has increased significantly (Wuyts, Marin, Brusselaers, Vrancken, 2020).

Increasing the sustainability of enterprises in times of war is a particularly relevant motive for the implementation and development of the circular economy at enterprises in today's conditions. Internal displacement of businesses and citizens, destruction of infrastructure, and generation of a significant amount of hazardous waste are challenges that require the development of strategic management solutions.

The motive to improve resource efficiency includes: energy efficiency (reducing energy consumption through the use of energy-efficient technologies, process optimization, increasing efficiency (coefficient of performance) and the use of renewable energy sources); material efficiency (rational use of raw materials, secondary resources, waste recycling and the introduction of circular production models); water efficiency (reducing water losses, optimizing treatment processes and reuse of water); usage of the latest technologies, innovative processes and materials to ensure optimal resource efficiency (Rizos, Behrens, 2016, p.1-10).

Resource efficiency helps to reduce costs, ensures greater competitiveness of enterprises, reduces environmental impact and promotes sustainable development.

Since the circular economy is a relatively new concept based on the transformation of business processes, it involves the development and implementation of innovative technologies, which is the motive for increasing the innovative potential of enterprises. This implies the implementation of modern scientific developments in

the field of waste management, more environmentally friendly production methods, the use of alternative energy sources, design and development of products, services and systems that are regenerative, renewable and resource efficient (Zvarych, 2016, p. 148).

Obviously, increasing competitiveness is a common motive for formulating enterprise strategy. Implementation of circular economy strategies is one of the key trends in the global market, so timely transformation of business processes of enterprises in a circular direction can create long-term competitive advantages.

Reducing the negative impact on the environment is an important motive in the context of growing awareness of climate change, water and air pollution, and the need to reduce greenhouse gas emissions and hazardous waste generation (Boons, Lüdeke-Freund, 2019, pp. 679-680).

Involvement of partners in cooperation within the circular economy is a motive for establishing partnerships with circular suppliers, partners from other industries, as well as with international organizations that support the implementation of circular economy practices, provide advice, grants, investments, etc.

Promoting the idea of conscious consumption is a motive that helps to further create demand for products based on recovery, recycling, or reuse. The promotion of the idea of conscious consumption can serve as an incentive for the transition to a circular economy in the following aspects: reducing consumption; raising awareness among consumers about the problems associated with consumption and waste production; creating demand for secondary resources; encouraging innovation in production, product design, and resource management.

An important stage in the strategic management of enterprises in a circular economy is to set goals for the implementation and development of the circular economy at enterprises. It is advisable to group these goals by economic, technological and environmental, market and social aspects.

The economic goals of implementing and developing the circular economy at enterprises include:

- reducing the cost of primary raw materials: the goal is aimed at reducing the company's costs for the purchase and use of primary raw materials by promoting the

utilization, recycling and reuse of materials. This may include reducing the use of new raw materials, finding alternative sources of raw materials, implementing a secondary resource management system, and partnering with suppliers that contribute to the circular economy. Metrics to measure progress toward this goal may include reducing the cost of purchasing primary raw materials, increasing the use of recycled materials, reducing production waste, and improving resource management efficiency (Morseletto, 2020);

- reducing logistics costs: in a circular economy, this goal can be achieved through geographical recycling of resources and production facilities, reengineering business processes towards lean manufacturing, and optimizing the management of material return flows;

- increasing the company's profit from the provision of services: this goal is aimed at expanding the range of services provided by the enterprise and increasing the profitability of these services. The enterprise may consider providing after-sales service, repair services, consulting, subscription packages, etc. This will create an additional revenue stream and ensure a more sustainable business model. Metrics to measure progress toward this goal may include an increase in the volume of services, an increase in service revenue, an increase in the customer base, or an increase in customer satisfaction (Makovetska and Omelianenko, 2018);

- increasing the company's profit from the sale of recycled and remanufactured products: this goal aims to expand the market and increase profitability by selling remanufactured or secondary products. The enterprise can implement processing, repair or recycling methods to create new products or refurbish existing ones. This will allow the enterprise to profit from additional markets and consumers interested in environmentally conscious and renewable products. Metrics to measure progress toward this goal may include increased sales of remanufactured products, increased profits from such products, and increased market share in the remanufacturing sector;

- increasing the amount of attracted investments in the development of circular projects: this goal is aimed at attracting additional investments to finance the enterprise's circular projects. Investments can be attracted to introduce new

technologies, improve existing processes, build the necessary infrastructure, or expand the scope of circular initiatives. Metrics to measure progress toward this goal may include the amount of investment raised, the number of investors, the level of support, and investor confidence in the enterprise's circular projects;

- generating additional income from existing products and processes: enterprises can generate additional income by implementing circular economy strategies in their operations, for example, by selling remanufactured components or leasing certain goods and their elements.

The market goals of implementing and developing the circular economy at enterprises should include:

- achieving technological leadership in the market in the field of circular innovations: this goal is aimed at creating a competitive advantage for the enterprise through the development and implementation of advanced circular technologies, processes and innovations. The enterprise strives to be a forward thinker in the field of circular economy, introduce new methods of recycling, use of secondary resources, and implementation of effective product life cycle management. Metrics for measuring progress towards this goal may include the level of innovation of circular solutions, the number of patents and new products, and the reputation of the enterprise as a technological leader in the market of circular innovations (Tukker, Aurisicchio, Dijkema, p. 245-247);

- increasing the market share through the implementation of circular economy strategies: a goal aimed at strengthening the company's market position through the use of circular economy strategies. The company is working on optimizing resource use, implementing a closed product life cycle, reducing waste, and increasing the resolution of production (Sarkis, Zhu, 2018, pp. 42-43);

- entering new markets through the implementation of circular economy strategies: this goal is aimed at expanding the geographical presence of the enterprise and entering new markets through the implementation of circular economy strategies. The enterprise explores potential markets with high demand for circular products and services, develops locally adapted circular business models and implements them to

expand its influence and increase profitability. Metrics for measuring progress towards this goal may include expanding geographic presence, increasing sales in new markets, assessing the competitiveness of the enterprise in new markets (Nasr and Russell, 2018); - development of new markets or product segments based on the implementation of circular economy strategies: in the context of implementing and developing the circular economy, an enterprise may pay attention to expanding its activities by introducing circular products or services in new markets or in new product

The technological and environmental goals of the implementation and development of the circular economy at enterprises include the following goals

- increasing the usage of recovered or recycled materials (in order to achieve this goal, enterprises can apply technologies for the recovery and recycling of products, an example of this goal may be: “increase the use of recycled materials by 25% by the end of next year”);

- increasing the usage of alternative energy sources: this may include the use of solar, wind, hydroelectric, biomass or geothermal energy. Increasing the use of alternative energy sources contributes to reducing dependence on fossil fuels, reducing greenhouse gas emissions, and improving the sustainability of the energy system. Metrics to measure progress towards this goal may include an increase in installed renewable energy capacity, an increase in production or consumption of renewable energy, or a decrease in fossil fuel consumption (Stoppato, Benato, De Vanna, 2021);

- reducing waste generation: to achieve this goal, enterprises can improve production processes, provide for waste reduction at the product design stage, and implement waste recycling and reuse systems;

- reducing harmful emissions into the atmosphere and water bodies: using cleaner technologies, effective filtration of emissions, replacing harmful substances with less hazardous or biodegradable alternatives, and effective water management. Metrics for measuring progress toward this goal may include reducing the concentration of harmful substances in emissions, reducing the quantity of emissions, or improving the quality of resources (Ellen MacArthur Foundation and Material Economics, 2020).

The social goals of implementing and developing the circular economy at enterprises include

- creation of new jobs as part of the implementation of circular economy strategies: the intention of the enterprise to increase employment and contribute to economic growth towards sustainable development. In addition, the achievement of this goal can facilitate the retraining and development of employees in new circular sectors, contributing to the sustainable development of the economy and the creation of a more environmentally friendly and resource-saving society (Zvarych, 2016, p. 148);

- increasing the number of counterparties for joint implementation of circular economy strategies: in the context of implementation and development of the circular economy, an enterprise can set goals for entering into partnership agreements with other organizations, producers or government agencies to jointly develop circular projects or initiatives. Partnerships can include sharing knowledge, resources and technologies, co-financing and collaboration in the implementation of circular innovations. Partnerships are a strategic approach aimed at creating synergies, enhancing scale and implementing circular solutions that exceed the capabilities of individual businesses;

- increasing the number of consumers who prefer reclaimed, reused or recycled products: the company may set a goal to increase consumer awareness and promote changes in consumer habits in favor of more sustainable consumption. For example, the goal may sound like this: "Introduce an educational campaign and training programs for 5000 consumers within a year." Achieving the goals of implementing and developing the circular economy at enterprises can be the result of a comprehensive approach and the implementation of appropriate strategies.

The main goals of implementing and developing the circular economy at enterprises are shown in Fig. 2.

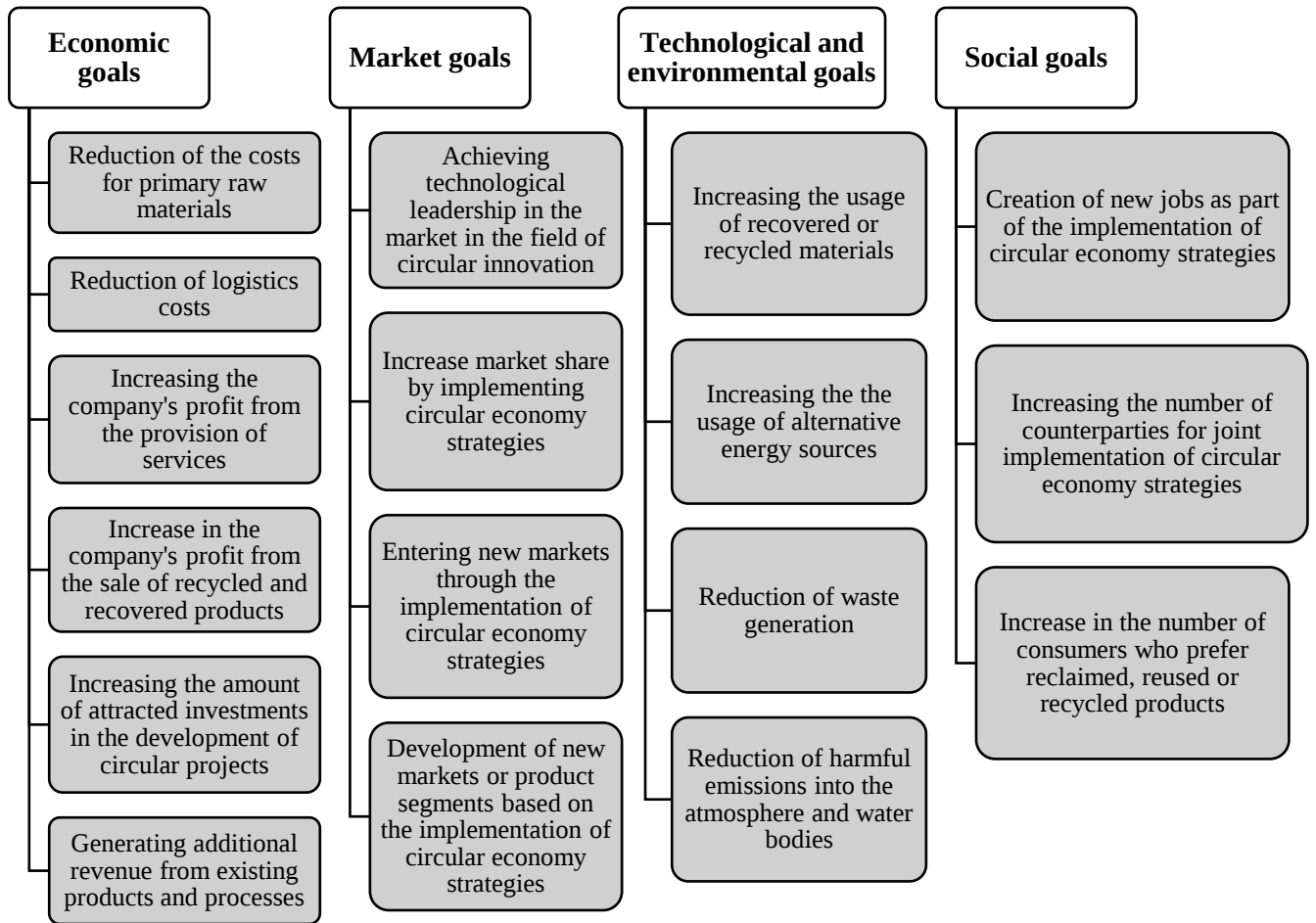


Figure 1. Typology of goals of implementation
of the circular economy at enterprises

Implementing and developing circular economy principles at enterprises is a key element of the transition to sustainable development. The main motives and goals of the circular economy implementation aim to ensure resource efficiency, reduce environmental impact, achieve economic benefits, stimulate innovative development and strengthen social responsibility. The realization of these goals contributes to the competitiveness of enterprises, optimization of production processes and the formation of new business models focused on closed cycles of materials and resources.

Despite the significant potential, the process of implementing CE faces a number of challenges, including high upfront investments, the need to revise existing business models, and insufficient awareness of the benefits of CE among businesses. To overcome these barriers, coordinated action is needed from the government, business,

and the scientific community. In particular, it is important to create a favorable legislative environment, develop funding programs, and educational and awareness initiatives.

The circular economy opens up new prospects for businesses, giving them the opportunity to contribute to global environmental goals while improving their own efficiency and competitiveness. Transitioning to a circular economy is not only a necessity, but also a strategic advantage that will help build a sustainable and harmonious future.