

TOWARDS A CIRCULAR ECONOMY IN ROMANIA

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The transition towards a circular economy, in which the value of products, materials and resources is remains in the economy for as long as possible and the production of waste is reduced to a minimum, has gained special attention lately on the agenda of public authorities, business environment, research institutes and non-governmental organizations. The paper aims to identify ways to implement the circular economy in Romania, the stakeholders, as well as ways to promote the circular economy applicable to the Romanian development model. The paper brings to the fore the efficient use of resources as a cross-cutting principle of the circular economy, which can be applicable to any sector of activity. From this perspective, the recirculation of resources is the key to achieving the circular economy, respectively the transition to the green economy in Romania.

Key words: circular economy, sustainable economy, natural environment, resources

JEL Classification Codes: O44, Q56, Q57.

1. INTRODUCTION

The consumer society that emerged at the end of the last century was based on a model that exerted an immense pressure on the resources and the natural environment. Due to the growth of population, living standards and wealth, the demand for natural resources has become higher than ever. In addition, all these resources tend to become more expensive, and the impact of this type of economy on the environment is negative, since the consumed or surplus products are disposed of as waste.

It is obvious that the current model of economy, based on the intensive use of natural resources, is not a viable option for the future. There is a need for sustainable economic and social development, based on the rational management of natural resources and waste, which conserves the planet's resources and protects the environment.

The solution is the transition to a circular economy, in which the value of products, materials and resources is kept within the economy for as long as possible and waste generation is reduced to a minimum. Such a transition will be an opportunity to transform the economy and reap new and sustainable competitive advantages.

The circular economy will stimulate the competitiveness of enterprises by creating new business opportunities, solve the problem of resource scarcity, increase resource prices, contribute to energy saving, reduce air pollution and carbon dioxide emissions, preserve biodiversity, resulting in a friendlier natural environment.

The transition to the circular economy requires the involvement of all actors of the economic and social life. The economic actors have a key role to play in driving this process, they can rethink supply, production and sales chains for efficient use of resources. The role of national authorities is to ensure a predictable economic environment for the economic operators, to protect consumers and to identify benefits for the population. The European Union has a key



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role to play in supporting the circular economy by establishing the appropriate regulatory framework for the development of the circular economy in the single market and to issue clear signals to the economic operators and society on the way forward.

2. DEFINITIONS

The circular economy is a generic term used for an economy in which the value of products, materials and resources is kept within the economy for as long as possible, the waste production is minimized and the material cycle is of two kinds: the cycle biological, in which the processes run so that the components re-enter the environment without negative effects, and the technological cycle, in which the natural resources are used efficiently to produce goods.

The term “circular economy” is quite difficult to define. The concept is the result of its development in fields such as science, politics, business, environment, at micro, meso and macroeconomic levels. Currently, there is a large number of definitions of this concept, very different from each other. Studies show that the circular economy is considered a strategy, a new economic paradigm, an industrial model, an industrial system, an economic system or a new business development model¹. The table below presents the most relevant definitions of the term circular economy.

Table 1. Circular economy definitions

Definition	Year	Document
An industrial system that is restorative or regenerative by intention and design	2013	Ellen MacArthur Foundation.
An economic system that is based on business models which replace the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes	2015	European Commission.
All economic activities to extend the service-life of goods, components and materials, through reuse and re-marketing, repair, re-manufacturing and technological updating of goods.	2014	Stahel, W.R.
Production and consumption of goods through closed loop material flows that internalize environmental externalities linked to virgin resource extraction and the generation of waste (including pollution).	2016	Sauvé, S., S. Bernard and P. Sloan.
an approach that would transform the function of resources in the economy. Waste from factories would become a valuable input to another process – and products could be repaired, reused or upgraded instead of thrown away	2012	Preston, F.
Refers mainly to physical and material	2014	European Environment Agency

¹ Ewa Mazur-Wierzbicka - Environ Sci Eur, (2021) 33:111, p.2.

Definition	Year	Document
resource aspects of the economy – it focuses on recycling, limiting and re-using the physical inputs to the economy, and using waste as a resource leading to reduced primary resource consumption		
The radical reshaping of all processes across the life cycle of products conducted by innovative actors has the potential to not only achieve material or energy recovery but also to improve the entire living and economic model.	2016	Ghisellini, P., C. Cialani and S. Ulgiati

Source: own processing

The paradigm shift regarding the economic development through the transition to the circular economy involves a complicated and long transition process for the adoption of the new ecological, social, ecological and functional requirements imposed by a new economic model. Achieving the objectives of the circular economy requires a thorough understanding of the mechanisms and determinants that allow the functioning of the economy as a whole, in the process of achieving sustainability. The development of the circular economy can be a possible response to the increasing economic competitiveness by reusing certain categories of resources in production.

3. IMPLEMENTING THE CIRCULAR ECONOMY IN ROMANIA

The transition to a circular economy offers a huge opportunity to reduce the impact of the economic activities on the environment in Europe, by reducing the consumption of raw materials and waste generation. It means keeping the value of resources as long as possible and rethinking production, consumption and all management processes. It is necessary to develop a long-term vision for the implementation of the circular economy, a clear direction and concrete actions to make this vision a reality.

In 2015, the European Union adopted an ambitious action plan on the circular economy, aiming to stimulate the transition to a circular, competitive economy so as to accelerate sustainable growth and job creation². The aim was to ensure the establishment of the appropriate regulatory framework for the development of the circular economy in the single market and to send clear signals to the economic operators and society in general on the way forward, with long-term objectives in the field of waste, as well as a set of concrete, comprehensive and ambitious measures.

The expansion of the circular economy will make a decisive contribution to achieving the climate neutrality by 2050 and to decoupling the economic growth from resource use, while ensuring the EU's long-term competitiveness and the fact that no one is left behind. The new action plan for the circular economy³, adopted in 2020, sets out a forward-looking agenda to achieve a cleaner and more competitive Europe, in collaboration with economic actors, consumers, citizens and civil society organizations.

The action plan aims to accelerate the radical changes required by the European Green Pact, based on the actions in the field of circular economy implemented since 2015. The plan

² European Commission, Closing the loop - an EU action plan for the circular economy, 2015.

³ European Commission, A new action plan for the circular economy. For a cleaner and more competitive economy, 2020.

ensures the rationalization and adaptation for a sustainable future of the regulatory framework, maximizing the new opportunities offered by the transition, while minimizing the burdens on citizens and businesses.

In Romania, the steps taken by national and local authorities are very slow. As a member of the European Union, Romania has committed to promoting a public policy in the direction of the circular economy, but has not adopted an action plan for the implementation of circular economy. Instead, the National Strategy for Sustainable Development refers to "promoting sustainable consumption and production practices" and "decoupling economic growth from environmental degradation by reversing the relationship between resource consumption and value creation and approximation of average indices of the EU performance on the sustainable consumption and production". As an objective for 2030, the Strategy proposed: "getting closer to the average level achieved at that time by EU member states in terms of sustainable production and consumption".

Romania's most important in the direction of transition to the circular economy is the integrated waste management. By joining the European Union in 2007, Romania has gradually assumed the achievement of objectives in terms of selective collection, recycling, recovery and storage of waste. Despite the commitments made, Romania currently has a waste management system still largely based on storage, and the amount of waste per capita is double than the European average.

Table 2. Waste generation in Romania for the period 2004 – 2018

	2004	2008	2012	2014	2016	2018
	-kilogram per capita-					
Romania						
Total	17,215	9,209	12,432	8,871	9,012	10,425
Household	170	317	226	192	208	215
Latvia						
Total	556	687	1,135	1,315	975	920
Household	240	278	596	336	446	300
Bulgaria						
Total	26,050	22,375	22,072	24,872	16,907	18,970
Household	22,375	388	377	371	398	448
EU 27						
Total	5,186	4,481	5,086	5,062	5,074	5,234
Household	415	4028	422	408	421	430

Source: Eurostat

Romania generates a very large amount of waste. We generate twice as much waste per capita compared to the European Union average and 10 times less than Latvia, the country that generates the least amount of waste per capita. However, we are well below Bulgaria, the member country of the European Union that produces the largest amount of waste per capita. The amount of waste we generate is closely linked to our consumption and production patterns. In Romania, the economic sector generates a much higher amount of waste than the European Union average, while the situation for the households is completely different (about 10% of waste generated by households in the European Union, compared to 5% in Romania).

What is worrying in the case of Romania is that the amount of industrial waste has increased lately, showing a positive evolution of the economy, but also a lack of concern of the economic agents for recycling and the introduction of the circular economy.

Waste is not only an environmental problem, but also an economic loss. In Romania, a very small part of the municipal waste is recycled (11.5% in 2019). According to the Eurostat data, Romania ranks last in Europe in terms of recycling, with a value 4 times lower than the European Union average. By 2020, Romania had to reach a 50% recycling rate in order not to be penalized by the European Union (in 2025 this percentage must reach 55%).

This target was missed, given that only 11% of municipal waste is recycled, making us the country with the second lowest recycling rate in the EU (the only country where the value of the indicator is lower is Malta with 6,5%). This is a low percentage, given that the European average is 47.7%, and the highest rate of a country is 66.7% (in Germany).

Table 3. The recycling rate of municipal waste in Romania for the period 2004 – 2019

	2004	2008	2012	2014	2016	2018	2019
							-%-
Romania	1.1	0.9	14.8	13.1	13.4	11.1	11.5
Germany	56.4	63.8	65.2	65.6	67.1	67.1	66.7
Malta	6.4	3.6	9.7	7.4	12.3	10.0	8.9
EU 27	31.8	36.5	40.9	43.4	46.5	47.2	47.7

Source: Eurostat

The Eurostat data show that there is a positive development in the collection of recyclable waste, but that progress is too slow to ensure that the objectives (targets) of the specific European directives are met in the near future. Romania has to overcome a large gap in terms of developing its own collection infrastructure, streamlining recycling, and reusing its resources.

Table 4. The recycling rate of waste in Romania for the period 2004 – 2019

	2004	2008	2012	2014	2016	2018	2019
							-%-
Romania							
Municipal waste	1.1	0.9	14.8	13.1	13.4	11.1	11.5
Packing waste	23.0	33.5	56.8	58.8	60.4	57.9	:
E-waste	:	:	14.5	21.3	25	:	:
Construction and demolition waste	:	:	67	65	85	74	:
EU 27							
Municipal waste	31.8	36.5	40.9	43.4	46.5	47.2	47.7
Packing waste	54.7	60.4	65.2	65.8	67.2	66.6	64.8
E-waste	:	:	30.0	32.8	39.5	38.9	:
Construction and demolition waste	:	:	:	87	87	88	:

(:) not available

Source: Eurostat

The transition to a circular economy is an exceptional opportunity to transform and make the economy more sustainable, create jobs and generate competitive advantage for Europe in a rapidly changing world. The transition to the circular economy leads to increased investment, value added and employment and stimulates innovation.

The private investments made in the EU in 2018, in a subgroup of economic sectors relevant to the circular economy, were estimated at around EUR 16 billion (representing 0.18% of GDP), the value of the indicator being EUR 359.8 million in Romania (0.12% of GDP). In the same year, in the sectors relevant to the circular economy, there were more than 3.5 million jobs in the European Union (1.71% of total employment), while in Romania only 132,000 people worked in these sectors (1.53% of the total).

In 2018, the circular economy sectors created an added value of approximately EUR 130 billion in the European Union (0.78% of GDP), respectively just over EUR 1.6 billion in Romania (0.78% of GDP).

Table 5. Private investments, jobs and gross value added related to circular economy sectors in 2018

Indicator	Romania	EU 27
Value added at factor cost (million euro)	1,601.5	130,800
Value added at factor cost (% from GDP)	0.78	0.97
Gross investments in tangible goods (million euro)	359,8	16,000
Gross investments in tangible goods (% from GDP)	0,18	0,12
Persons employed (number)	132,551	3,545,700
Persons employed (% from total employment)	1.53	1.71

Source: Eurostat

Although several EU funding programs are available to support the transition to the circular economy, such as the European Fund for Strategic Investments, the European Structural and Investment Funds, Horizon 2020, the LIFE program, and the Financial Support Platform for the Circular Economy (since 2017), there is no spectacular increase in the sectors that make up the circular economy. Although some progress can be seen towards more circular trends in production and consumption, for example in terms of waste generation, there is still enough space for action to reduce the gap between the Member States' performance. Further improvement in the performance of the EU and the Member States is extremely necessary and there is significant potential in this regard.

4. CONCLUSIONS

In order to promote the circular economy, Romania has started the first steps towards engaging in a future action plan for the circular economy. The transition to the circular economy represents for our country an important opportunity to transform the economy, to make it more efficient through the superior capitalization of resources. More and more initiatives support the transition to the circular economy in Romania. But there are also barriers that limit the implementation of this new type of economy, such as:

- the messages sent by the authorities on the benefits of the circular economy are not strong enough;
- the companies are not willing or do not have the necessary knowledge to introduce some production models specific to the circular economy;
- the business infrastructure, the current technologies, the existing production systems can keep the economy in the current model of economic development;

- the investments in sectors relevant to the circular economy are insufficient, being considered quite risky;
- although many citizens are aware of the benefits of the circular economy, it is difficult to estimate how they will change their consumption behavior toward sustainable products and services.

The implementation of the circular economy and the green economy in Romania requires ensuring the necessary financing. In this sense, the structural and cohesion funds from the multiannual financial framework 2021-2027 of the European Union, the funds obtained by Romania through the National Recovery and Resilience Plan can actively contribute to the promotion of the circular economy.

Therefore, increasing the absorption rate of the European funds is an important goal for Romania because the circular economy and the green economy can actively contribute from the perspective of efficient use of resources and can increase the well-being of citizens and the environmental protection.

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