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Circular Economy: Barriers and Levers Promoting Transformation (Case Study Analysis)

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ABSTRACT

Innovative projects, connecting the circular economy with sustainable territorial development, promote multiple synergic effects, thus helping to dynamite the various aspects of sustainable development – economic, social, and ecological. In order for such projects to succeed, however, some conditions must be in place at the same time. The aim of this research is, based on some projects selected according to a set of criteria, to analyze the levers and barriers to developing new business models built on the circular economy principles. An exhaustive study of each of these projects and a comparative analysis allow us to derive some common features and develop a typology that makes it possible to identify and shed light on the new requirements, conditions, and factors for the successful realization of projects of similar type. Also, concrete recommendations are given concerning the necessary support from national and local public authorities. The study is based on primary and secondary sources and applies the causal approach, analysis, synthesis, and survey.

Keyword: Circular Economy, Promoting Transformation, Eco-design

Introduction

Recognising the consequences of the industrial development of the world economy over the last 150 years and the effects of applying a linear model of development (resource extraction-production-consumption-waste) has led to the imperative need for transformation of the model. The model so far applied has not only exhausted its potential and become increasingly inefficient but has been producing serious adverse second-round effects – mostly environmental, as well as social and territorial imbalances.

The growing consumption of natural resources and its environmental consequences call for a change in the economic model. The circular economy concept is part of such change. It



mobilizes the efforts of not only the public authorities committed to sustainable growth, but also of firms aiming to achieve better economic, social, and environmental development. A circular economy is about an economy's ability to grow while reducing the consumption of resources. Moving to a circular model aims to achieve "dematerialisation" – i.e., absolute or relative reduction of the amount of material used and of the amount of waste.

The resounding political will in the EU for transformation is expressed in promoting the circular economy model based on the more efficient utilisation of resources and on the concept of "closing the loop", which is borrowed from natural circular patterns where the notion of waste does not exist.

The majority of business practices so far applied are reduced to achieving more at less cost. By contrast, the circular economy is based on reuse. Its essence by far transcends waste management or environmental protection. At the heart of this concept is the effort to maximise the benefit of a product throughout its life cycle.

The analyses of the Ellen MacArthur Foundation (2015), as well as those of the McKinsey Centre for Business and Environment, indicate that by 2030 the consumption of new materials could be reduced by 32%, and by 2050 – by 53%. Primary raw materials could be replaced with secondary raw materials in a range of industries – construction, automotive, chemical fertilisers, synthetic materials, fuels, and non-renewable sources.

According to the United Nations Environmental Programme (2011), the shift to a circular economy may eliminate up to 100 million tonnes of waste worldwide by 2020. Establishing a new resource utilisation model, which is applied in each stage of a product's life cycle, and promoting improved efficiency of this utilisation while reducing the negative environmental effects, is fundamental for the circular economy concept. Of all the numerous definitions of the concept and the various aspects of approaching the construct, this report adopts the definition given by ADEME (2014, p.4), according to which "The circular economy is an economic system for exchange and production which, at all stages of the product life cycle (goods and services), aims to increase the efficiency of resource use and reduce the impact on the environment, while enabling people to live well".

The definition emphasizes the economic aspect of the circular economy. The aim is to move towards a model comprising not only recycling but overall better use of resources by paradigm shifts in the methods of production and consumption, extending the life cycle of products, and adopting the eco-design concept related to reuse and recycling.

The concept of closing the cycle is built upon the issue of resources, optimisation of the methods of production, and a shift in the consumption model. Various research studies in the scientific literature indicate that the circular economy is economically viable (Liu & Bai, 2014) and is a model combining sustainability and profit (Ivanova & Slavova, 2019). In parallel with the purely economic benefits, adopting this model adds value in terms of the challenges of biodiversity, combatting inner-urban air, and soil pollution (WRAP 2015).

Growth, which is based on extracting more and more resources and discharging them afterward, is doomed. Throughout its evolution, the linear method so far applied has objectively placed restrictions on the opportunities for economic growth. In a finite world of scarce resources, this growth could not be realised without affecting its very base – nature's capital (Costanza et al., 2013). This inevitably calls for a reversal of perspective (Costanza, 1991),

moving to a new model and adopting the principle of systematicity and connectivity of individual systems.

Going green to achieve greater competitiveness and sustainability of production has become an unavoidable necessity for firms (Bansal, & Roth, 2000). The primary focus here is on resource efficiency leading to reduced production costs and productivity growth. To this effect, the actions related to waste recovery and reuse, and its actual reduction carry considerable potential.

The idea was at the core of industrial ecology already in the 1980s (Erkman, 1998; Billen et al., 1983). The need for transformation and a shift to the industrial ecosystem with optimised consumption of resources and energy, reproducing biological ecosystems by analogy (Frosch & Gallopoulos, 1989), comes forth as an inevitable imperative of a future economic model. Seeking new, ecologically sound business practices (Graedel & Allenby, 1994) implies a gradual and consistent transition from linear to a circular economy. Table 1 gives a systematised outline of the main traits of the two models.

Table 1. Linear economy vs. circular economy

Linear Economy (LE)	Circular Economy (CE)
Overconsumption	Sustainable consumption
Inefficient waste management	Focus on zero waste
Resource depletion	Optimisation of resources
Ecological imbalances	Ecological equilibrium

Source: Author's systematisation

The idea of closing the loop in resource utilisation and transforming waste into resource has been institutionalised at the European level in numerous documents: from Communication of the EC (2014) down to the Circular Economy Action Plan adopted in 2015 and later on the supplementing Circular Economy Package of measures (2018) and monitoring of the progress by indicators.

None of those documents is about abandoning the idea of growth. The debate concerns the type of growth and meeting pre-defined quantitative indicators for utilisation of primary raw materials, the use of secondary raw materials and energy, and optimisation of wastes. In response to the growing awareness of the need for sustainable growth, the new opportunities for the reorganisation of the production and consumption systems (at national and territorial level) bear the potential for strategic ecological transformation.

Adopting the model in its entirety and as a system encompasses three main spheres of action – production, consumption, and waste, which are interconnected, each stage “feeding” the next one. The circular economy is a closed-loop covering each of the three spheres: the supply and responsible choice of producers, consumer demand and behaviour, and waste management (Europesworld, 2014). Economic actors, such as businesses and consumers, are key in driving this process. Local, regional, and national authorities are enabling the transition. Circular economy includes seven fundamental pillars (Fig. 1) and covers the entire product life cycle.

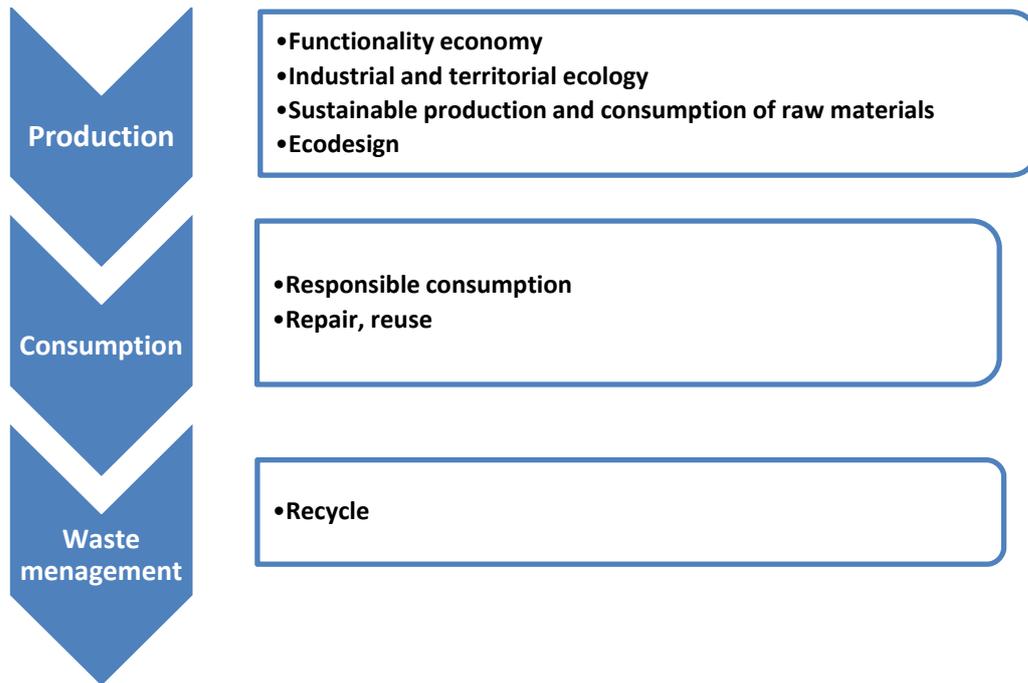


Figure 1. Fundamental pillars of circular economy

The circular economy goes far beyond the tasks of industrial ecology or waste management, and most importantly, their recycling (something it is quite often incompletely identified with). Apart from implementing new industrial practices, economised primary raw materials, and a change of product eco-design, the circular economy model, also requires a change of consumer behaviour and perception of practices, extending product use (as well as reuse). Wastes and their recycling is coupled with practices of prevention and full utilisation.

There is still a widespread perception that the circular economy is a production concept. This is an important aspect, and progress in this direction must lead to the greening of the economy. It is just as important to develop new levers to foster the transition to sustainable territorial growth and the building of a new type of ecosystem. Shared economy, functional economy, dematerialisation and promoting the use of services are vectors of an economic model adapted to the needs of the future.

A major challenge at this point is how to move away from the growth-chasing dominated model in order to meet societal needs and how to replace the so far existing predatory exploitation of natural resources with a new, more effective, resource-efficient and environmentally responsible model.

The circular economy provides basic guidance as to what must be done to reduce significantly and lastingly economy's reliance on resources and move in a direction to overcome the scarcity of non-renewable natural resources. It offers important solutions, especially concerning production skills and design, new business models, cycle-building expertise, and inter-sectoral cooperation.

Methodology

This paper aims to outline, based on some projects selected following a set of criteria, the barriers, and levers of developing new business models built on the principles of the circular economy. The basic research tasks include analysing some successful business practices in

Bulgaria relating to the circular economy principles and clarifying the obstacles that firms are facing in greening their businesses, as well as the government’s capacity to facilitate such transition through public resources, eco-fiscal measures and other incentive policies.

A detailed study of each of these projects and the comparative analysis allow us to derive some common characteristics and develop a typology enabling us to identify and shed light on the new requirements, conditions, and factors for a successful realisation of similar types of projects. The research is organised in two stages:

1. Defining the criteria for selecting firms;
2. Studying the concrete projects and conducting interviews with representatives of the companies.

During the first stage of the study, six firms were chosen among all participants at the *Circular Economy and Environment 2018* conference, held on 2.10.2018 in Sofia. The conference focused on sharing best practices and successful business partnerships, which have led to the creation and development of innovative technologies, systems, and solutions with a beneficial environmental effect.

The selected firms comply with the principles of the circular economy per the following criteria:

- Reduced use of resources and beneficial impact on the environment;
- Integrating the various stages of the life cycle of products while enabling its extension;
- Applying innovative, eco-friendly technologies and different innovative business models;
- Contributing to the sustainable development of the territory by creating jobs; improving the environmental shape of the municipality; enhancing the attractiveness of the region; and helping create integrated systems of interaction between stakeholders;
- The selected firms cover all three spheres of circular economy illustrated in Figure 1, complying with the condition for balance of individual pillars;
- Projects at different implementation stages (from start-up companies to established leaders on the relevant market, to identify the different obstacles and impediments accompanying the individual stages in time order;
- The selected firms imply some diversity of their territorial locality within the country to reflect the impact of the different territorial contexts.

The firms selected by the criteria are systemised in Table 2 below:

Table 2. Nature of the firms participating in the study

Life Cycle Thinking (LCT)	Pillar of CE	Company	Activity	Kind of firm
Production	Industrial ecology	ZagorkaSA	Brewery	Large, market-based
	eco-design	BioMyc	transport packaging	start-up company
Consumption	reuse	reUse	Furniture	start-up company
	reuse	BRS Balkan’s SA	Battery Recovery	Small and medium enterprise-already in operation
Waste management	recycle	Integra plastics	Plastic	Small and medium enterprise-emerging
	recycle	Humanity SA	Clothing, textiles	Small and medium enterprise-already in operation

Source: Author’s systematisation

Following one of the selected criteria –territorial diversification of successful circular economy-related projects – Figure 2 shows a map of the location of the analysed firms. The methods employed are analytical and comparative. The in-depth analysis of the selected firms in the study is based on information from documents published on the corporate websites: written policies, corporate values, codes of ethics, the reports on the sustainable growth of the company Zagorka SA, and information in periodicals or the Internet about these companies. According to the Global Reporting Initiative (GRI), electronic or web-based reports and paper versions are suitable and acceptable media of reporting corporate information. The next stage of the study includes armchair interviews with representatives of the companies (executive directors, managers, and Heads of Marketing). The interviews sought to identify the obstacles and barriers which the firms encountered in pursuing their projects. This has served as the basis for creating a summarised classification of these barriers and for deriving some more general recommendations on levers and tools which could facilitate the ecological transformation and the transition to a circular economy model.

Results and discussion

BioMycis, a start-up biotechnology company, using agricultural waste and mushroom spawn to produce composite resembling Styrofoam. The material is suitable for the making of packaging, furniture plates, bricks, thermal insulation, even eco-leather; however, currently, BioMycis developing two prototypes: eco composite plates of 70% less wood and no synthetic glues, and fully biodegradable transport packaging resembling Styrofoam. The start-up company finds financing through the cleantech Bulgaria Foundation, which is a partner to the EU-funded Climate-KIC Accelerator Programme. Founded by two young entrepreneurs, the company won a prize (€92,000) in the *Green Solutions* category of the StartUp Europe Awards of Innova Foundation with the European Commission's support for 2017.

ZAGORKA SA brewery has over 115 years of history dating back to 1902. Since 1994 it has been a part of HEINEKEN. Since then, they have invested nearly 130 million euros in modernising and expanding their production, which makes the brewery one of the most innovative companies in the region. Zagorka is focused on conserving water resources, reducing carbon emissions, as well as on sustainable resources. In 2017, the water consumption norm in the Zagorka brewery fell from 3.5 hl/hl to 3.3 hl/hl, which is a 7% decrease relative to the preceding year. Apart from water consumption, the company takes care of wastewater, which is returned to the environment. In 2014, the first stage of constructing a wastewater treatment plant was launched. In order to reduce the CO₂ emissions from the production, the work processes and technological equipment are being continuously streamlined so that less electricity and natural gas are consumed. The reduction of carbon emissions from the distribution activity stands at a total of 19% compared to 2010. Zagorka's most significant project in this direction is the Green Warehouse, which was put into service in 2013. The construction of the Warehouse facility started in late 2011. The area of the new Green Warehouse facility spans over nearly 3 000 square meters and its investment worth is 2 million levs. The first industrial building of the company, which is designed for storing finished products, was developed and constructed using an internationally acclaimed method of assessing eco indicators for all types of buildings – BREEAM. The facility is equipped with a computer-based system – BMS, which controls and manages the light, ventilation, fire-fighting,

and other systems of the building at a minimum energy consumption while ensuring optimal work conditions. The Warehouse has an integrated system for collecting and recovering rainwater, which is used in the service spaces of the offices and for cleaning the storage area. The eco warehouse of Zagorka is awarded the prize of the Chamber of Architects in Bulgaria for sustainable architecture.

The start-up company reUse produces an online platform for upcycling – a process whereby used objects are reused instead of being discarded. This is a step beyond recycling, which breathes new life into objects and leads to less waste. The aim behind the platform is to raise awareness about furniture renovation, develop the niche, and make their reuse more attractive and affordable. Furniture sales in Bulgaria for 2017 exceeded 1 billion leva, of which 2 million were in art and designer products. The disposal of large waste in Sofia was over 80 000 tonnes in 2017, of which almost half of them was mainly used furniture. After participation in the largest competition for ‘green’ start-up businesses – Climate Launchpad, and with the support of the European Greenhouse of Climate KIC programme, from which they draw know-how and 10-thousand-euro financing for operating costs, the company’s team was expanded, and the initiative started with the first exhibition of renovated furniture. Half of the proceeds from sales cover the labour costs of design renovators. The rest goes to support the cause of the Northeast Project Foundation.

The circular model promotes a responsible attitude to large cast-off objects and creates a possibility for prolonging the lifecycle of furniture. Refurbishing is carried out on the territory of Smart Fab Lab – a workshop accessible to university students and designers. The undertaking is supported by a leading furniture firm – IKEA. It supports logistically, financially, and communication-wise, the start-up business of reUse. The first renovated pieces of furniture offered on the online outlet of reUse were collected voluntarily by IKEA’s customers following a campaign organised by the Bulgarian office of the Swedish chain. IKEA organises the transportation free of charge, and the owners receive bonus scores under the chain’s loyal customer programme.

BRS Balkans SA – Battery Recovery Solutions SA (BRS) was registered on the Bulgarian market in July 2012. It is a pioneer in the area of extending the life of all types of lead-acid batteries by applying fully innovative, eco-friendly technology in renovating accumulators and batteries. The firm is a holder of a special license for the territory of Bulgaria and the Balkans. The technology in place gives a further long-term guarantee of 24 months for successfully renovated batteries at around 30% off the price of a new battery at that. This decreases the number of discarded batteries by extending their life cycle, thus reducing the need to buy new batteries. The BRS research and development activities create a unique formula, which renews and prolongs the life cycle of batteries – the so-called ‘BRS Additive.’ The additive consists of 100% organic substances and is completely metal-free. The innovative solution, which reduces by more than 60% the costs of maintenance and purchase of new accumulators (batteries), applies to a wide range of sectors. Humanita SA operates in the wholesale clothing and parts-of-garments industry. It is a leading innovative company in its field whose portfolio includes collecting, sorting, and recycling of textile, production, and sale of recycled textile products. The company successfully operates both at the national level and on the international markets in Europe, Central America, the Middle East, and Africa. The project was launched in March 2016 in Plovdiv. Three years later, it had 92 containers (60 in Sofia, 18 in Plovdiv, 12 in Varna,

and 2 in Pernik) of more than 6 million items. The production of the containers and their running costs are their investment. Transportation of the collected quantities to the company's specialised sorting plant is also its responsibility. For each collected kilogramme of textiles, the company donates funds to the Bulgarian Red Cross, feeding a special Fund to support casualties from natural disasters, accidents, and catastrophes. The average monthly donations are between 9 and 12 thousand levs. The usable clothing serves to set up a crisis reserve in support of the Bulgarian Red Cross for casualties from natural disasters, accidents and crises, and donations earmarked for people in need. Another part of the textile products (50% on average), which are reusable as clothing, are exported mostly to countries in Africa, Central America, the Middle East, and others. The rest of the items (around 10%), which are unfit for their original intended purpose, are processed and recycled in Bulgaria or factories located in other countries and reused to create products such as cleaning tissues, upholstery in the automotive industry, thermal insulation and many other products from recycled textile. Humanita produces own-brand goods TopCleanMe, which are sold to industrial firms. The company has set up a textile sorting and recycling plant near Plovdiv. The investment in the building is some 1.5 million euro jointly with BlackPeak—one of the two specialised Funds managing the financing granted to Bulgaria by the European Investment Fund (EIF) under the JEREMIE initiative.

Integra Plasticis, a newly established joint stock company, running a plant in Elin Pelin, which produces top-quality recycled plastic. The plant is equipped with innovative technology and inclusive engineering, which meets all environmental requirements. The company plans to process annually 37 thousand tonnes of plastic waste into 22 thousand tonnes of regranulate, which is a raw material for the production of a wide range of industrial and domestic plastic products. Each tonne of recycled plastic saves some 23 cubic meters land, 2604 litres fuel, and 20786 MJ electricity. The site will be used for processing baled plastic waste from municipality installations and industrial plants. Wastes are sorted optically, including by colour. The result of processing is high purity (99.7%) plastic granules, which are fit for reuse. The basic material used by the plant is a polyethylene heat-shrink folio, which is commonly known as plastic bags. Apart from that, the installation can also process mixed hard plastics.

Barriers standing in the way of transition to a circular economy model

The analysis of each of the six projects and their comparison highlight some common traits:

- ✓ Flow management and resource recovery;
- ✓ Implementing new, 'clean' technologies allowing the use of secondary raw materials (recovered products) and/or extending the product's life cycle;
- ✓ The need of accompanying support from the local authorities, especially at the initial stage of development.

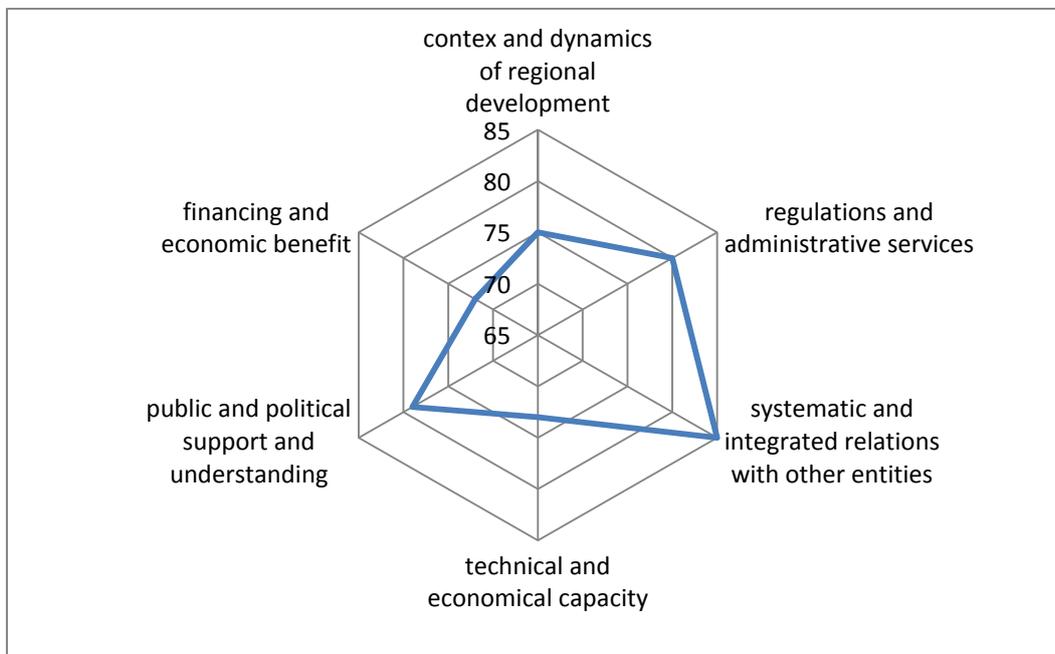
Due to the different nature of the companies' production activities and maturity, the interviews with company representatives have revealed numerous and varying obstacles standing in the way of transition to the circular economy. Despite their wide range, the barriers could be systematised into three main groups: organisational, technical, and financial.

Table 3. Typology of barriers to establishing a circular economy model

Organisational	Absence of existing infrastructure
	Uncertainties and insufficient knowledge of the regulatory framework
	Supply chain management
	Connection with local authorities
	Establishing an appropriate team
	Absence of adequate public perception and habits
	Dynamics of the economic development at the municipality level
	Risk appetite/aversion
Technical and Technological	Little interaction with academic research
	Eco design
	Integration between individual processes and firms
	Absence of well-developed and functioning secondary raw materials market
Financial	Insufficient financing
	Measuring and reporting of the financial benefits from CE
	Lack of quick financial returns
	Attracting external financing

Source: Author’s systematisation

Figure 2 presents the assessments of the main types of barriers standing in the way of the successful implementation of circular economy-related projects. Measured on a scale of 10 to 100, assessing the importance of each group of obstacles, each of the studied projects is assigned a score. The arithmetic mean from the scoring of each company has allowed to reach a final score. The higher the score, the more significant the respective barrier is considered to be by the firms, as well as hampering the successful realisation of a project.



Source: Author’s systematisation

Figure 2. Barriers standing in the way of transition to a circular economy model

The highest weight is attached to the absence of consistency and integration among the various economic operators, which impedes the effective functioning of the supply chain. This is largely due to the practically vertical structure of our industrial system, which has spread over the recent years, where the cross-sectoral links are non-existent or very underdeveloped, all the more, so that cascading is one of the main traits of the circular economy.

The major barrier, however, is still to be found in cooperation rather than in technologies or the economy. The aim of the circular economy is a change at the system level: it should be able to operate all through the supply chains and industries. It requires a paradigm shift that could trigger continuous social transformation by distinguishing between prosperity and the consumption of natural resources and the decline of ecosystems.

It is also important to overcome the obstacles locally. Often the achievement of higher levels of recycling is limited by the administrative capacity, the lack of investments in the infrastructure of separate collection and recycling, and the insufficient use of the economic tools (such as disposal charges or pay-as-you-throw schemes); another serious challenge is the creation of overcapacity in the infrastructure of residual waste processing (including mixed waste). Among the challenges in this respect is whether the plant is situated close to recycling hubs or waste traders.

An obstacle facing the undertakings wishing to use secondary raw materials is the insecurity as regards the quality of these raw materials. Given the absence of common EU standards, establishing mixtures in the content or the fitness of high-quality recycling (such as plastics) could be difficult. Developing such standards would increase the confidence in secondary raw materials and recycled material, and would support the market.

An important factor in creating a dynamic market of secondary raw materials is sufficient demand, which depends on the use of recycled materials in the products and the infrastructure. Another persisting obstacle to the successful realisation of such innovative projects is the lack of funding. Although normally regarded as a basic problem and barrier, this research has revealed that resource availability is not a key hurdle. What must be taken into account here is the lack of ample information about the funding possibilities and the related quite complex and burdensome procedure. Significant support in this regard comes through the EU funding programmes such as the cohesion policy, the LIFE and the COSME programmes (the Programme for the Competitiveness of Enterprises and SMEs), and Horizon 2020. Of critical importance is the collaboration with various investment funds and accelerator programmes.

Levers promoting transformation

A shift to a circular economy is a change in the system. In addition to the consistent efforts affecting key sectors, as well as every stage of the value chain, conditions need to be created, whereby the circular economy could develop and resources deployed. Table 4 outlines the advantages of this model for ecological transformation.

Table 4. Advantages of circular economy

<i>Key characteristics</i>	<i>Enabling factors</i>	<i>Social and economic advantages</i>	<i>Environmental advantages</i>
<ul style="list-style-type: none"> • Less input and use of natural resources 	<ul style="list-style-type: none"> ✓ Eco-design ✓ Responsible consumption: 	Enhanced competitiveness	Restricting resource consumption (raw materials, water, energy)
<ul style="list-style-type: none"> • Increased share of renewable and recyclable resources and energy 	<ul style="list-style-type: none"> - repair - reuse of products and components. - remanufacture ✓ Recycling: - use of recycled materials as secondary raw materials; 	Reduction and rationalization of company costs on raw materials and materials	by minimizing their inefficient use, increasing recycling and reuse, thus preserving the natural capital
<ul style="list-style-type: none"> • Reduced emissions 	<ul style="list-style-type: none"> - well-functioning markets for secondary raw materials ✓ Functionality economy: -focus on offering product–service systems rather than product ownership ✓ Eco-innovation ✓ Ecofiscal instruments ✓ Governance, skills and knowledge ✓ Economic incentives and finance 	Relative reduction of insecurity in resource procurement and guaranteeing greater sustainability	Suspending programmed product obsolescence
<ul style="list-style-type: none"> • Reduced the part of waste 		Possibility for entering new areas of economic activity (recycling, refurbishment and maintenance, technological innovations)	Reducing greenhouse emissions and countering climate change
<ul style="list-style-type: none"> • Keeping the value of products, components and materials in the economy 		Creating accompanying jobs	Ecosystems maintenance and preservation
		Enhanced social image	

Source: Author’s systematisation

This transition is an opportunity for our economy to address a number of challenges, become more resilient and able to meet the challenges of climate change and the conservation of natural resources. It creates new job opportunities and gives Bulgaria competitive advantages.

Private investments in the country within the group of economic sectors of relevance to a circular economy are estimated at some 81million euro or 0.18% of the country’s GDP. These figures are above the average for Europe, which is 0.12%.

These sectors employ some 59 thousand people generating around 521 million euros in value-added, which increases by 1.2%.In order to encourage the ecological transformation of the economy and to establish lastingly new business practices based on the circular economy principles, a much more active and consistent public policy is required. This policy could focus on:

- 1- more efficiently incorporating adequate institutional mechanisms for monitoring and control ensuring that ecological standards are strictly applied and a shift to practices based on the circular economy principles;
- 2- more consistent and far-reaching investment policy geared towards the needs to prevent and deal with environmental crises;
- 3- Encourage (including with economic incentives) projects related to technological process innovation, new products, and materials leading to “greening” of industrial productions and prolonging the product lifecycle

4- investments in key resources and natural capital such as water, renewable energy, marine resources, biodiversity and ecosystem services, sustainable agriculture, forests, waste, and recycling. They could be turned into areas of future economic growth and world markets.

Innovations will play a key role in this change in the system. In order to redefine the models of production and consumption and transform wastes into high value-added products, we will need new technologies, processes, services, and business models that would shape the future of our economy and society. Therefore the support of scientific research and innovations will be an essential factor for promoting the transition. The 2016-2017 Work Programme of Horizon 2020 includes an important initiative called Industry 2020 in the Circular Economy, which grants over 650 million euros for innovative demonstration projects in support of circular economy needs and industrial competitiveness in the EU.

A key reference in this direction is the innovative Strategy for Smart Specialisation over the period 2014-2020, where a major objective is stimulating technological modernisation in the production sector. A basic financial tool in support of this policy is the Innovation and Competitiveness operational programme – 500 million levs have been earmarked under both its axes in support of increasing energy efficiency and the rational use of resources in enterprises.

Thus, for instance, the cohesion policy funds are directed at an increasing number of programmes in support of the reuse and repair, streamlining production processes, product design, and SMEs. The European Strategic Investments Fund (EFSI) is one of the instruments that can be used to finance these investments. Along with the European Investment Bank (EIB) and the European Consulting Centre on Investment, the Commission will take action to promote applications for financing and will support the development of projects and investment platforms related to the circular economy, such as in the area of plastics and mineral resources recycling. Furthermore, circular economy projects can benefit from the EIB consultancy and funding mechanisms under the programme InnovFin(EIB,2018). The Commission will expand the scope of the Innov'fin instruments that more innovative projects related to the circular economy could become eligible for financing.

Conclusion

Establishing and above all expanding the use of the circular economy model, encouraging the corporate policies in this direction (largely motivated by economic competitiveness interests) could have a considerable synergic impact on the environment, ecology, and the quality of life. Mobilising the business in this direction is becoming a vital factor and opportunity for increasing competitiveness among companies in a highly dynamic and competitive market.

The circular economy model is becoming the main pillar of the ecological transformation of today's economy. Institutions such as G-7, the Club of Rome, the United Nations Standing Committee on Environment, and the EU have reached a consensus that it is a new opportunity to promote the principles of sustainable growth.

At the European Commission level, this policy is most evident in the area of resource efficiency, reducing the economy's reliance on scarce primary raw materials and minimising wastes. The ambition is to 'close the cycle' by applying new business strategies (multi-r) and innovative practices of ecosystem relevance.

The circular economy offers concrete solutions to these challenges through new business models involving recycling, reuse, eco-design, and renovation. It, therefore, is a chance to break the link between ‘value-added growth and increased use of non-renewable resources’ by providing solutions which are both reducing damage to the environment as well as creating new jobs.

As a summary of what has been said so far, we can outline five main courses along which the circular economy model could be realised:

- A targeted investment policy combining the benefits of the European funds (ERDF, EAFRD, Horizon 2020, LIFE+), national financing (the Innovation and Competitiveness programme), and encouraging public-private partnership;
- Putting environmentally responsible business practices at centre stage and fostering corporate environmental responsibility – methodological support and raising the awareness and public perception of good practices in the area of sustainable consumption of resources;
- Increased awareness and cooperation among firms – programmes and forums promoting the benefits of circular economy and in particular SMEs eco-design;
- Active policy of sustainable territorial and regional development – local, municipality-supported initiatives (competitions, centres for attracting and financing innovative environmental projects, joint public-private partnerships), to combine corporate policies and the objectives of sustainable development;
- Accompanying institutional reforms, including change of educational programmes geared to preparing staff for green jobs.

Recognising that the shift, which characterises the current stage of development, is rather an expression of a slow, consistent, however imperative metamorphosis, and less so a situation of economic disruption, identifying the barriers to this change and the levers that could speed it up, is of great value. Inasmuch as the circular economy is a strategy for regional territorial sustainable growth, the role of local authorities, and the cooperation among the economic operators within a region is of primary importance.

Albeit slowly, Bulgaria has been witnessing quite a serious market of products that can be recycled and resold as raw material. This, coupled with the market for reusable components, shapes a new niche that is yet to be developed.

The study presents only a few examples of successful pilot projects, attempting to outline the common between them. Classifying the most common obstacles and exploring the levers for the successful realisation of similar environmentally responsible business practices, and the benefits from them will continue to be the object of future research. An issue that remains to be addressed is whether, while optimising the currently dominant system and making it more resilient, we may well be running the risk of ruling its fundamental transformation out altogether.

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