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# Investments to Develop Business Models and Projects in the Circular Economy

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**Abstract.** The development of a sustainable economy and the efficient use of resources are now playing an increasingly important role in the circular economy. Unlike the linear economy, the economy contributes to keeping the value of products, materials, and resources in the economy as long as possible, while at the same time reducing both waste volume and raw material consumption and their environmental impact. The topicality of the research is illustrated by the limited amount of natural resources, climate change and sustainable economic growth, which is pursued by both countries and companies. It is in the economic interest of society as a whole to use existing resources in the best possible way. In addition, the introduction of the circular economy is expected to open up broad opportunities for economic growth for both businesses and consumers. The transition to a circular economic business model requires investment. Funding can be raised through different types of projects, but there is little or no information available in the public area about where and how to obtain financing for circular economy-related projects and what are the general benefits for the company from environmentally-friendly activities.

## 1 Introduction

The development of a sustainable economy and the efficient use of resources are now playing an increasingly important role in the circular economy. Unlike the linear economy, the economy contributes to keeping the value of products, materials, and resources in the economy as long as possible, while at the same time reducing both waste volume and raw material consumption and their environmental impact. Further increases in the use of recycled resources and the implementation of the circular economy will also lead to increased human employment, creating new business opportunities, driven by increased demand for recycled resources, and increased lifestyles of “zero waste” [1–6]

Global trends show that the world's acquisition of material resources has doubled since the 1980s. In addition, it is projected to reach 100 billion tons in 2030, while doubling by 2050. In order to ensure sustainability at the end of 2015, the European Commission adopted a Circular Economy Action Plan, but the transition to a circular economy is not possible without targeted national policies and investments to promote it. For this reason, the

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European Commission committed more than €10 billion of public funding for the transition to the circular economy between 2016 and 2020. However, there are currently not enough state-directed measures in Latvia to develop a secondary materials market which plays a key role in the circular economy. At present, the only successful instrument is the Natural Resources Tax, which is expected to increase to EUR 50 per ton in 2020. At the same time national, municipal, and economic operators are investing significant resources in the development of waste management infrastructure in order to contribute to the recovery of resources from waste. Major projects are currently being introduced in Latvia for the development of both polymers and glass recycling capacity, in which it is intended to introduce a deposit system in Latvia – the possibility of transferring certain categories of drinks to residents for recycling. Consequently, it is also intended to increasingly involve citizens in the implementation of the circular economy, which would also contribute to the development of circular economic solutions for replacing these identified types of packaging and goods with a more environmentally-friendly nature.[1, 4 – 8]

The implementation of business models and projects for a sustainable circulation economy is currently very topical in Latvia, so it is necessary to promote business opportunities and the willingness to invest. At present, there is little or no access to information on where to obtain funding and the benefits of the company from the introduction of circular economic projects. In this study it is essential to identify where to obtain funding for such projects and business models and how to encourage business investment in sustainable solutions. [9 – 11]

The transition to a circular economy is not possible without a purposeful public policy, as well as investments to promote it. Funding can be raised through different types of projects, but there is a little or no information available in the public area about where and how to obtain financing for circular economy-related projects and what are the general benefits for the company from environmentally-friendly activities. The aim of this research: To study into existing possibilities of funding for small and medium-sized enterprises in order to promote and develop circular economy business models in Latvia.

## 2 Methods

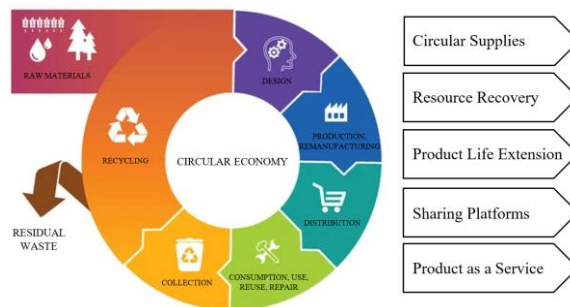
In the course of the study, the following study methods were applied: Quality method – analysis of theoretical and scientific literature; *Eurostat* data processing with the Microsoft Power BI tool; conducting and processing interviews; developing a project idea, mathematical method – calculation and analysis of financial indicators; logically – constructive method – developing conclusions and proposals.

## 3 Results and Discussion

### 3.1 Circular economy, business models and key action directions

Although there are many concepts in the circular economy and there is not one specific definition that would define it, various explanations include a new way of creating value, extending the lifetime of products and moving waste from the end of the supply chain to the start – in fact, using resources more efficiently and more than once. In line with eco-industrial development, a circular economy is understood to be the “realization of closed loop material flow in the whole economic system” [12]. Another definition states that a circular economy is the circular (closed) flow of materials and the use of raw materials and energy through multiple phases” [13]. According to one of the leading developers of circular economy principles, the Ellen MacArthur Foundation: “The circular economy is basically restorative

and regenerative and constantly aspires to preserve products, components, and materials at their highest durability and value by distinguishing the technological and biological cycle” [14]. On the other hand, the European Parliament describes this as a model of production and consumption, which includes the sharing, renting, re-use, repair, recovery, and recycling of existing materials and products for as long as possible, thereby, extending the life cycle of products [7]. In order to replace the traditional economic model and facilitate the transition to a circular economy, it is necessary to plan mutually-compatible preconditions throughout the material life cycle, or at all stages of the value chain consisting of the extraction, development, production, distribution, use, collection, and processing of raw materials, see Fig. 1.



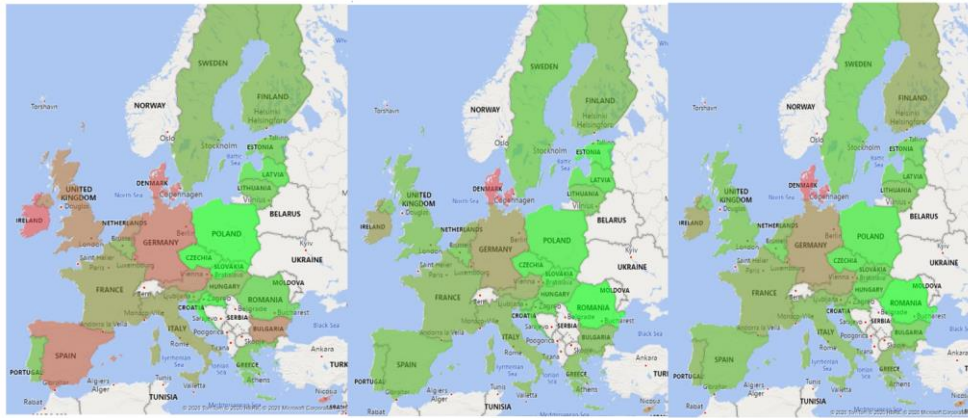
**Fig. 1.** Graphical explanation “What is a circular economy?” created by authors, based on the European Parliament model (2019).

A circular economy is seen as the economy’s development direction expected to lead to a more sustainable development and a harmonious society. The circular economy is a fundamental change in the traditional economic model and an important way to change the economic growth pattern and achieve a balance among economy, resources, and environment. [15, 16].

New business models can be implemented individually or in combination to achieve resource productivity growth, increase differentiation and added value for the customer during the process, and reduce costs. The theory examined allows authors to further organize a study and structure data analysis.

### 3.2 Data processing with the Microsoft Power BI tool

Global and EU waste volumes are increasing from year to year, but there are also examples of good countries that have reduced the amount of waste per capita over time. In order to find out which EU countries can be referred to as good practitioners authors carried out data analysis in Microsoft Power BI between 2002 and 2018, see Fig. 2. The data were derived from the Eurostat website [17]. For Greece, Cyprus, and Ireland, data are available up to 2017. The resulting data was reflected in the map chart, where the red-coloured countries denote the largest amount of waste per capita (kg), and the light green the smallest. In order to see national changes over the above period, the authors of the work have created a picture of three map charts, where the first (from the left) is about 2002, the second is for 2011 and the third for 2018.



**Fig. 2.** Waste by EU country, kg / Per capita 2002, 2011, 2018, created by authors.

According to the map charts created, the changes in the amount of waste produced by EU countries (kg) per capita over the years concerned can be compared to the corresponding colour. Comparing 2018 with 2002, it can be concluded that the amount of waste generated per capita (kg) has been significantly reduced by countries such as Bulgaria, Ireland, the United Kingdom, the Netherlands, and Spain, but has been reduced by a number of other EU countries.[18]

The statistics for the reduction of waste (kg) per capita in the countries mentioned above were analysed and a table was set up to make them more transparent. Results obtained allow the planning of Investments to Develop Business Models and Projects in the Circular Economy.

### 3.3 Conducting and processing interviews

Four experts in this field were interviewed in order to assess the feasibility of implementing business models and projects in Latvia and to clarify the level of awareness of both society and business about the circular economy.

By analyzing the views of industry experts, and based on research into the scientific literature and Internet resources, the authors of the work conclude that there is currently a need to educate SMEs in the circular economy – they lack both general information and motivating information and easily-accessible information on how to switch to one of the circular economic business models and how and where to raise funding for their project ideas and marketing ideas. Consequently, the authors of the work have developed a project idea that would ensure that the necessary information is available to businesses and contribute to the realization of their business ideas.

### 3.4 Developing a project idea

The topicality of a project idea is highlighted by the EU Green Classification or Taxonomy Regulation, as a sustainable business is expected to be the norm in the coming years. This means that companies will have to move to sustainable solutions, including business models that match the circular economy. The planned activities of the project are shown in Fig 3.

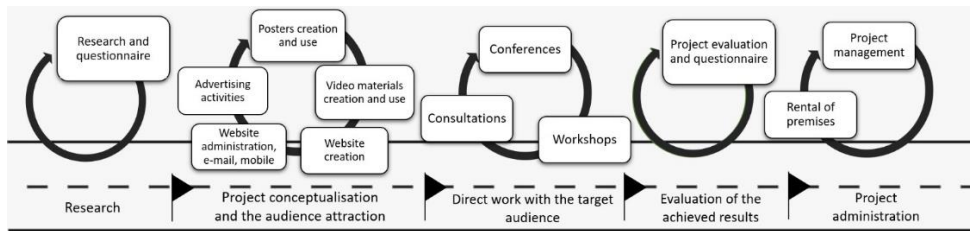


Fig. 3. Project stages and activities created by the authors.

**Purpose** – To create a motivating and supportive environment for companies transitioning to circular economy solutions, and to create and distribute informative materials about circular economy business models and their financing opportunities.

**Mission** – To promote the availability of information and support, and to promote the involvement of more SMEs in Latvia for a transition to circular economy business models.

**Vision** – To be a reliable and easily-accessible platform, promoting sustainability and competitiveness in Latvian companies, and become a driving force for companies to make a faster transition to a circular economy.

In order to find the most appropriate financial support instrument for the project, the authors of the work carried out a study into the possibilities for supporting funding for the implementation of business models and projects in the circular economy. It is concluded that the LIFE EC financial instrument program is the most relevant. As the idea of the project developed by the authors of the work focuses on supporting communication, dissemination, and awareness-raising, this potential project corresponds to the LIFE “traditional” type of project in the priority area of the Environment sub-program “Environmental Management and Information” (European Commission, 2020). This sub-program does not set a limited deadline to be included in the project so the project could last for two years, according to the authors' forecasts, in order to achieve the objectives pursued and to obtain results.

### 3.5 Mathematical method – calculation and analysis of financial indicators

The investments forecast to implement the project idea created by the authors are EUR 121 420.59. Figure 4 shows the distribution of these investments according to the sources of funding and the stage of the project at which the corresponding part of the financing is received. [19–23]

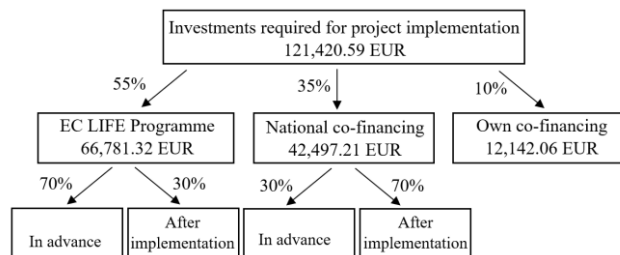


Fig. 4. Project financing scheme created by authors.

Following the calculation of the project evaluation, indicators are concluded that the project should be supported as it increases its organizational value by, EUR 44739.90 and the investment efficiency ratio of 41,80% is high. For the realization of this project, the Investment Allowability Index (PI), which is  $1.42 > 1$ , also supports the realization of this project.

## 4 Conclusions and proposals

Faster transition to a circular economy is hindered by a lack of motivation, available resources and understanding of companies. At present, companies that are not purposefully interested in it lack information about the possibilities of receiving financing, as well as financial benefits.

The general public today has too superficial an idea of the nature of the circular economy due to the lack of information presented in an easy and understandable way.

Currently, the most important thing in evaluating loans from financial institutions is the viability of the idea, which has not yet perceived environmental sustainability.

The EU Taxonomy will make a positive impact on the transition to a circular economy among companies, as a unified regulatory framework will be established on the conditions for allocating funding to business models with criteria for environmental sustainability.

In Latvia, there is a need to create and distribute informative materials in order to educate and encourage SMEs to develop circular economy solutions.

The **State Education Content Center** can ensure the promotion of the principles of circular economy in the general education program by including them in the science subject program in primary schools and the economics subject program in secondary schools or by organizing lectures and workshops within the traditional “project weeks”.

The **Ministry of Environmental Protection and Regional Development of Latvia**, in cooperation with The **Investment and Development Agency of Latvia** can develop and present information on the volumes and examples of circular economy business models and projects that have already been implemented, as such data are not currently available.

The **Ministry of Environmental Protection and Regional Development of Latvia**, in cooperation with The **Investment and Development Agency of Latvia** and **Altum**, can promote companies' awareness of the EU Taxonomy as, according to experts, the Taxonomy will have a major impact on companies' future policies in the near future.

Many thanks for the opportunity to conduct and publish this research to BA School of Business and Finance (Latvia) and Laboratory of Efficiency and Effectiveness with a research project “Management of Circular Business Models and Projects within Economy of Latvia”. The results of the scientific study are included in the monograph “**Management of Circular Business Models and Projects within Economy of Latvia**” published in Latvian.

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