

**ICEST 2020**  
**International Conference on Economic and Social Trends for Sustainability of**  
**Modern Society**

**THE IMPLEMENTATION OF GREEN ECONOMY TOOLS IN**  
**RUSSIAN UNIVERSITIES**

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***Abstract***

This article is devoted to the problems of green economy in Russia. With the main green economy tools having been defined, it has become obvious that universities should encourage environmental initiative within the walls of its academic buildings and halls of residence. By exercising their main prerogative, the education of new specialists and young people, universities must show through their own example the advantages of green tools, the possibilities of their use and the results of environmental initiatives. This article outlines the main problems of applying and implementing green tools. Having analyzed the experience of Russian universities, the author hypothesizes that certain internal and external factors influence the tools that Russian universities implement in their educational institutions. As a result, it has become clear what barriers and obstacles eco-initiators encounter in their way. The aim of this study is to show how important the transition to the green economy is and how much it depends on each person working at the university.

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**Keywords:** Green economy, education, green economy tools, Russian universities.



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## 1. Introduction

The fact that the world leading economies are actively transforming into green economies is aligned with the topicality of the study. Every year, more and more developed and developing countries concerned with environmental challenges and climate change increase the use of green economy tools. When promoting decarbonization policies, first, the states introduce various green economy tools in the state and municipal organizations, and then support small and medium-sized businesses which form the basis of the market economy. A high percentage of the presence of green tools is noted in the university campuses.

As for Russia, the system of organization and implementation of environmental practices in universities is not developed. Often, environmentally-oriented and active student organizations face with various problems when implementing green economy tools.

## 2. Problem Statement

This article addresses the following issues:

- application of green economy principles in Russia;
- implementation of green economy tools in Russian universities;
- barriers encountered when implementing green economy tools in Russian universities.

### 2.1. Application of Green Economy Principles in Russia

Investors often consider the level of development of green economy in the country as a key factor for foreign investments. Responsible investment is becoming more and more relevant. It is an approach to investment which incorporates environmental, social and governance (ESG) factors in investment decision-making to better manage the risks of sustainable and long-term return on investment (PwC, 2019). According to the Global Investors for Sustainable Development (GISD) Alliance, created by the United Nations (UN) in 2019, the volume of responsible investment assets increased by 34% from 2016 to 2018 and amounted to 30.7 trillion US dollars (Pankov, 2019). This shows how important the green economy and its principles are for the development of the economic potential of the country under existing conditions. Again, in Russia the transition to the green economy is being deferred. This is due to the structure of the Russian economic system based on the oil industry and insufficient state support provided for the development of small and medium-sized businesses.

### 2.2. Implementation of Green Economy Tools in Russian Universities

To make green economy popular with the public, it is necessary to introduce appropriate tools and train people to use them first and foremost in budgetary state institutions. Along with the teaching and administrative staff of the university, the students are introduced into a separate closed system where they train themselves to exhibit environmentally responsible behavior and study the opportunities and effects of the introduction of green economy tools. In some Russian universities, students came up with an idea of waste sorting on the territory of university buildings and campuses. This indicates the interest that young people take in environmental issues.

### **2.3. Barriers Encountered When Implementing Green Economy Tools in Russian Universities**

Despite the initiative that Russian students take, certain problems can be seen in the interaction between university management and green activists. In Russia, to help students implement environmental projects in universities, an all-Russia youth ecological union “The Association of Green Universities of Russia” was established. Its activity is aimed at reducing the obstacles that arise between initiative students and university management when implementing green economy tools.

## **3. Research Questions**

This article studies green economy tools which are used to facilitate integration of environmental objects into the state’s economic system.

The tools are as follows:

- educational activities;
- renewable energy sources (RES);
- waste management system;
- water resources management system;
- sustainable (green) transport;
- organic farming in agriculture, reforestation;
- energy efficiency in housing and communal services (Ivanova & Levchenko, 2017).

### **3.1. Educational Activities**

One of the main tools for introducing environmental initiatives is targeted public messages related to ecological problems and their solutions, the so-called educational activities. These may include social advertising, information and education events or cultural events, media publications. Russian population is often poorly informed about the issues related to green economy and ecology, and educational activities are mainly carried out in narrow professional circles.

### **3.2. Renewable Sources of Energy**

The active use of alternative sources of energy is due to the increased public interest in eliminating the negative environmental footprint, preserving the natural potential and slowing down climate change. Year by year, renewable sources of energy are becoming more accessible, reliable and cheap. In Russia, this tool is only beginning to be put into practice. Some regions are trying to switch to alternative energy and are actively looking for partners and investors.

### **3.3. Waste Management System**

Researchers and environmentalists have long been concerned about the garbage glut from human and commercial activities. In most developed and some developing countries, the separate waste collection principle (DSS) is already the norm of everyday life. People who care about their ecological footprint use the 3R concept (Reduce. Reuse. Recycle), thus, trying to reduce consumption, reuse and recycle. Unfortunately, conscious waste management is poorly developed in Russia.

### **3.4. Water Resources Management System**

Due to the rapid growth of the world's population, water consumption increases every year. Water scarcity is becoming more obvious, and the problem is growing more acute. Despite the fact that Russia is the second country in the world in terms of water resources, the distribution of water is uneven, so some regions are experiencing a shortage of fresh water. To coordinate water resources, an integrated management approach is adopted, which means a highly efficient use of fresh water with minimum wastage rates (Rasulzoda & Pulatov, 2012).

### **3.5. Sustainable (green) Transport**

Sustainable transport is becoming increasingly popular around the world which minimizes the impact on the environment by reducing carbon emissions into the atmosphere. In many Russian cities, the tram – a ground-based electric road – has been extensively used. Today, this type of transport is considered outdated and is being replaced by electric buses. In the central part of Russia, the bicycle road system is being actively developed. Electric cars are still a hard-to-reach transport.

### **3.6. Organic Farming in Agriculture, Reforestation**

The main direction of organic farming is the use of natural fertilizers and elimination of the negative impact of chemicals on soil. In the agricultural ecosystem there is a high interaction of soil, plants and animals grown for food, hence, the quality transition to organic farming directly affects the health of people. Worsening climate, intervention of the human factor lead to forest fires, therefore, reforestation plays an important role in environmental initiative. At the end of 2019, space-based monitoring registered about 10, 002 million hectares of forest areas in Russia affected by forest fires (Kobets, 2019).

### **3.7. Energy Efficiency in Housing and Communal Services**

Housing and communal services account for more than 70% of the country's electricity consumption, so the reorganization of this industry leads to a serious reduction in the negative impact on the environment. Energy efficiency includes such measures as construction of energy-saving buildings, application of new principles in terms of heating systems, as well as individual settings of electricity supply to the premises. In Russia, electricity consumption is controlled through electricity meters installed in residential premises (Osipova & Okorokov, 2015).

## **4. Purpose of the Study**

After analyzing possible tools used in the implementation of the green economy, it is necessary to understand which of them will be most effective if introduced in Russian universities. After reviewing the experience of already implemented environmental projects in Russian universities and spotting the difficulties which the student community faced with when implementing environmental initiatives, it is necessary to propose solutions to optimize green projects in universities.

## 5. Research Methods

The study includes the analysis of the main tools of the green economy which can be implemented in Russian universities, and the identification of difficulties that universities have when implementing the environmental initiative.

### 5.1. The Analysis of Green Economy Tools Used in Russian Universities

At the moment, the most famous organization focusing on the implementation of sustainable development program is an all-Russia ecological union “The Association of the Green Universities of Russia”. According to its official website, at the beginning of 2020, there are 96 teams from 36 regions of Russia, which makes 85 Russian higher education institutions that have successfully implemented green economy tools and continue to use them.

Green economy tools used by Russian universities are diverse. The author believes that their use depends on internal and external factors that affect an educational organization. Table 01 describes types of factors that influence the implementation of a certain green economy tool.

**Table 01.** Factors influencing the implementation of green economy tools in Russian universities

Type of factor	Description of factor	Example of a green economy tool	Example of implementation	University implementing the tool
<b>Internal factors</b>				
Profile-forming	The existence of a department for environmental work	Educational activity	Research laboratories, scientific conferences, publications in Russian and foreign journals	Department of environmental education and environmental management, Minin State Pedagogical University of Nizhny Novgorod (Minin University)
Infrastructural	Possibility for the reconstruction of a university building	Energy efficiency	Reconstruction of academic buildings, lighting replacement	National Research University “Higher school of Economics” (HSE)
Financial	The amount of funding for green projects and its limitations	Waste collection system	Installation of units for collecting various waste fractions	Minin State Pedagogical University of Nizhny Novgorod (Minin University)
<b>External factors</b>				
Administrative	Support and promotion of environmental initiatives at the level of municipalities and regions	Waste collection system	Creation of infrastructure for SWC (separate waste collection) based on the one that exists in the region	Northern (Arctic) Federal University named after M.V. Lomonosov
Partnership	Availability of regional sponsors and partners	Reforestation	Sponsored seedling tree planting	Rubtsovsky Institute (branch) of the Altai State University

Source: compiled by the author from (Bobylev et al., 2019; Kudasheva, 2019)

When determining the factors, the author used public resources published after the implementation of environmental initiative in Russian universities as a guide. It is worth noting that waste management system is most widespread, available and less costly. Out of almost 90 green universities, 51 have separate

waste collection (Kudasheva, 2019). The most difficult factor to implement is infrastructure as it involves reconstruction of buildings to completely transform economic activities into green economy tools. It includes not only the replacement of equipment, such as switching to energy-saving light bulbs, installing sensor faucets, but also insulation of the facades of the buildings, expansion of window and door openings, replacement of pipelines, etc. Of the external factors, the administrative factor is worth noting, since the attitude of the management to the implementation of green economy tools differs from region to region. The city administration of Arkhangelsk has a positive attitude towards the implementation of environmental initiatives. Supposedly, it helped the Northern (Arctic) University named after M.V. Lomonosov to take the leading position in the rating of the greenest universities in Russia in 2020 according to ECA, an interregional environmental public organization.

In addition to the tools described in Table 01, some universities are implementing a water management system through the use of water-saving technology. Installation of water meters and sensor faucets helps to save water, which significantly reduces expenditures on building maintenance. This practice was introduced in the main building and new buildings of Saint Petersburg State University (Kudasheva, 2019).

Sustainable (green) transport is being actively used by universities in which academic buildings are located at a certain distance. For instance, Perm National Research Polytechnic University has installed bicycle parking facilities next to some of its halls of residence and academic buildings for transport connection between them, thereby reducing the number of shuttle buses (Bobylev et al., 2020).

Having analyzed the experience of Russian universities, we can note that the initiative to implement green tools is growing. For this purpose, the Association of Green Universities conducts eco-quests to help students acquire new knowledge, build leadership skills and develop environmental thinking as well as to demonstrate methods for implementing green tools.

## **5.2. Identification of Barriers Impeding the Implementation of Green Economy Tools in Russian Universities**

There are a number of significant barriers which hinder the initiative to implement green economy tools in Russian universities. The most significant ones are:

- poor awareness of environmental issues – some students and teachers still believe that environmental problems are insignificant and there is nothing they can do about it personally;
- low involvement of university management – many initiative groups note that facility (maintenance) department is reluctant to contact and unwilling to change the usual course of work;
- difficulties in finding partners – the selection of organization that the university will work with when implementing certain tools may delay the process for an indefinite period;
- insufficient financial resources – budget funding does not include environmental expenditures for universities, and extra-budget funds may not be enough to implement some green economy tools.

The abovementioned barriers greatly delay the implementation of environmental projects. Surely, educational activity carried out by regional administration will expand the environmental initiative and remove a number of difficulties. Therefore, the introduction of green economy tools is a complex task which must be solved at the state level.

## 6. Findings

In the course of work, green economy tools have been reviewed and those that are implemented in Russian universities have been identified. The author has defined the factors influencing the implementation of green economy tools.

It is worth mentioning that the most effective tools are those in which students will be directly involved and will understand that their activities are aimed at improving the ecological situation of the region. The author believes that introducing SWC in universities will instill environmental responsibility much more effectively than energy efficiency or water saving as such tools will be taken for granted, and students' participation in them is indirect.

Despite this, university management must think about the environmental footprint of their institutions and implement the tools in a comprehensive manner and in cooperation with an initiative group of students and teachers, and to support these actions with educational activities.

## 7. Conclusion

Principles and concepts of the green economy are becoming integral to the life of people all over the world. To deny this fact, and even more so, to ignore it, means to remain outside the trends of the world development.

Russian universities must actively take up the initiative of sustainable development, implement green economy tools in their maintenance work and infrastructure to instill new eco-habits in young people, to reduce ecological footprint, which will lead to upgrading the university rating in the global educational system.

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