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Saidakhmad Abdumalikovich Abdunazarov

Jizzakh Polytechnic Institute  
candidate of economic sciences, associate professor,  
head of the Department of Economics and Management

## DEVELOPMENT OF A GREEN ECONOMY: PROBLEMS AND SOLUTIONS

**Abstract:** The green economy has been recognized as a completely new science in recent years. This direction is gaining popularity in the study of economics based on a combination of several subject areas - economic theory and ecology and green economics, occupies a new direction in scientific knowledge. The article examines the development of a green economy in Uzbekistan.

**Key words:** green economy, natural resources, greening, energy resources.

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### Introduction

A green economy is an economy that aims to return end-use products to the production cycle. A green economy is aimed at the economical consumption of those resources that are currently subject to depletion, for example, minerals (oil, gas) and the rational use of natural resources. The Uzbek clean technology industry is currently at the initial stage of commercializing the available scientific potential.

One of the main challenges in the green economy is to change people's views on energy consumption. Then energy-saving technologies will become in demand, smart energy-efficient houses will appear. Already today, in the Republic of Uzbekistan (RUz), certain actions are being taken to protect the natural environment. The strategy of Uzbekistan's transition to a "green" economy involves an increase in the share of renewable sources, access of 100% of the population to inexpensive energy supply, the development of electric transport and the creation of an effective waste recycling system [1].

On October 4, President RUz Shavkat Mirziyoyev approved the Strategy for Uzbekistan's transition to a green economy for 2019-2030. The strategy emphasizes the low level of energy efficiency of the economy, irrational consumption of natural

resources, slow technology update, weak participation of small businesses in the implementation of innovative solutions for the development of a green economy hinder the achievement of priority national goals and objectives in the field of sustainable development of the among the targets for the implementation of the strategy are to reduce the specific greenhouse gas emissions per unit of gross domestic product by 10% from the 2010 level, to bring the share of renewable energy sources to more than 25% of the total electricity generation, to provide access to modern, inexpensive and reliable energy supply to 100% of the population and sectors of the economy, expanding the production and use of motor fuel and vehicles with improved energy efficiency and environmental friendliness, as well as the development of electric transport, the introduction of drip irrigation technologies on an area of up to 1 million hectares and an increase in yields to 20-40% of crops cultivated on them [2,3].

The implementation of the strategy will contribute to better governance in the field of energy efficiency of the economy, rational use and conservation of natural resources, reduction of greenhouse gas emissions, access to green energy, creation of green jobs and climate resilience.

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The priority directions of the strategy are to increase the energy efficiency of the basic sectors of the economy [4]:

In the electric power industry: reconstruction and modernization of generating capacities of operating power plants with the introduction of highly efficient technologies based on steam and gas and gas turbine plants, complete equipping of power consumption systems with automatic control and metering devices.

In the field of heat power engineering: introduction of new technologies for generating heat energy, modernization and reconstruction of outdated boiler equipment, equipping consumers with modern metering devices, using solar collectors for heating water in boiler houses.

In the oil and gas industry: reduction of losses of natural gas during its production, processing, transportation and distribution due to the modernization of compressor stations, low and medium pressure gas distribution networks, as well as the gas transmission system with the introduction of effective technologies to control the loss of hydrocarbon resources (SCADA), the introduction of alternative energy sources at oil and gas production facilities.

Diversification of energy consumption and development of the use of renewable energy sources[5]:

- In the field of renewable energy sources: improving tariff policy and approving ceiling tariffs for the purchase of electricity, modernizing and restructuring the power supply system, localizing the production of equipment for generating energy from renewable energy sources.

- In the field of construction and maintenance of buildings: implementation of state programs to improve the energy efficiency of buildings, including the reconstruction of multi-story residential buildings, revision at least once every 5 years of building codes in the direction of stricter energy efficiency requirements, the widespread introduction of a "closed" heat supply system for central heating, development system of differentiated tariffs to create incentives for energy saving; introduction of energy efficient standards for household equipment.

- In the transport sector: expanding the production and use of vehicles with improved energy efficiency and environmental friendliness in accordance with Euro 4 and higher standards, electric vehicles, cars with hybrid engines, gas-fueled, ensuring the phase-out of the use of hydrocarbon fuels and stimulating the development of electric transport, development and development of new transport and logistics systems, development of road infrastructure.

Adapting and mitigating the effects of climate change, improving the efficiency of natural resource use and preserving natural ecosystems.

- In the field of water management: prevention of further salinization and deterioration of land

quality, construction and reconstruction of hydraulic structures, pumping stations and reservoirs, widespread use of ICT and innovations in water management and the use of energy-efficient and water-saving technologies for irrigation of crops [6].

- In the field of agriculture: restoration of degraded pastures, diversification of crops, prevention of pollution of water sources with agricultural waste, breeding of highly productive breeds of animals and plant species resistant to salinization, drought and other hazards and risks.

- In the field of solid waste (MSW) management: the development of sanitary cleaning infrastructure aimed at full coverage of the population with services for the collection and removal of solid waste, the creation of an efficient and modern solid waste processing system, the use of solid waste facilities in the form of sources of alternative energy.

The implementation of the strategy will involve state and economic management bodies, local executive authorities, citizens' self-government bodies and other civil society institutions, international organizations, the private sector, as well as the population[7].

Back in December 2008, a directive was adopted by the European Parliament, according to which 27 EU countries plan to bring the use of alternative energy sources to 20% of the total by 2020.

In some European countries this figure is already exceeding 20%. In Denmark, for example, wind energy alone provides 21.3% of the total energy in the grid, in Sweden and Finland, 20-25% of heat generation comes from biomass. Worldwide annual growth rates in the use of solar energy are on average 60%, wind energy - 30%. The advantages of the priority use of alternative energy sources for all countries are undeniable: environmental friendliness, no emissions, and the breadth of the spectrum of renewable energy sources.

The possibilities of alternative energy sources are extremely relevant. In comparison with the EU countries and the USA, the use of renewable energy sources in the Republic of Uzbekistan today is at a low level. The current situation can be explained by the sufficient availability of fossil energy carriers (natural gas). One of the main obstacles to equipping generating capacities based on solar panels or wind turbines is the absence of a provision on an incentive tariff at which the state would purchase electricity generated from them.

In addition, there are no statistics on the number of wind turbines or solar panels involved in industry or agriculture. At the beginning of 2010, the total capacity of wind turbines in Russia was 18 MW, which is equal to only 0.008% of energy generating facilities in Russia (220 GW). For four years, this figure has increased by only 4 MW. The wind energy fund consists of 1,600 small installations with

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capacities ranging from 0.1 to 30 kW and 10 large wind farms providing 90% of the total capacity [8].

There are more than 20 wind turbine manufacturers in the country, but they all work in the field of medium and small generators - no more than 500 kW. Whereas in the Russian Federation the absence of domestic consumption of solar energy can be explained by the fact that there are sufficient levels of solar radiation in the Russian Federation, in the Russian Federation they are in South Siberia, the South-West, and the Far East. As a result, in the first half of 2010, the total capacity of the operating photovoltaic plants was no more than 1 MW.

Hydrogen energy, in spite of the large theoretical backlog, continues to be without commercially available products. In 2008, at the state level, a goal was set - by 2020, to reduce the energy intensity of the country's economy by 40%. Today, the main problems with energy consumption in the country are the arrangement of energy meters in the private sector and in industry[9,10].

Projects in the field of management of storage and transmission of electrical energy in Uzbekistan are still less developed. It is necessary in the country to introduce smart energy systems into the existing structure of electricity transportation.

The green economy is precisely the tool that facilitates the transition to sustainable development. The United Nations Environment Program (UNEP) defines a "green economy as contributing to improved well-being and social justice, while significantly reducing environmental risks and environmental deficits[11].

Another more complex definition of a green economy is one in which vital links between the economy, society and the environment take place, and in which production processes and consumption patterns are transformed while contributing to waste reduction, pollution and efficiency. use of resources, materials and energy, revitalize and transform economies, create decent employment opportunities, promote sustainable trade, reduce poverty and improve equity in income distribution.

A powerful incentive for the greening of economic activity in market conditions is the growth in demand for environmentally friendly products from both households and other entities.

Market, including the state. Analysis of the processes, factors and conditions for the formation of the aggregate "green" demand, the results of which are necessary for the scientific substantiation of the essence, structure and functions of the mechanism for stimulating the greening of the economy.

According to the statistical report of the independent non-profit research institute for organic farming FiBL, published in 2017, the global organic farming market has grown for the period 2000–2015 4.5 times, amounting to \$ 81.6 billion in 2015. The

USA is the leader in terms of retail sales (47%), the combined share of European countries is 38%.

It is expected that the countries with the highest consumption of eco-products per capita are Switzerland (262 euros per year) and Denmark (191 euros). Sweden, France, Luxembourg, Austria and Germany are also among the top ten leaders in this indicator that is countries characterized by an active environmental policy and a high level of environmental culture of the population. As the researchers note, the motives for purchasing organic products can vary.

In the United States, the main motive is rather selfish - taking care of their own health, while in Germany the population is more concerned with the state of the natural environment.

In July 2020, a regional ministerial conference on the "green" economy was held in Tashkent, where four directions were named towards the ecological well-being of the republic:

- Development of a program that provides for the rational use of energy, work to minimize greenhouse gas emissions, reduces waste generation, restore and save ecosystems. Energy consumption is mainly in cities (75 percent). Uzbekistan has ratified the Paris Agreement and assumed obligations to reduce emissions to standard values. The transition to a green economy is aimed at coordinating labor sectors within the framework of government programs. For example, in the transport sector, the expansion of the use of alternative "green" fuels (mainly liquefied gas and synthetic fuels from plastics).

- The second area is related to the global Sustainable Development Goals, seven of which are environmental.

- Mitigation of negative consequences associated with global climate change, which is intensifying in the Central Asian region due to the drying up of the Aral Sea.

One of the important priorities voiced in the President's Address to the Oliy Majlis is the increased attention to environmental issues, especially in the Aral Sea region.

The agro-ecotourism project "My garden in the Aral Sea" is being implemented in Uzbekistan, aimed at eliminating the consequences in the region and increasing the number of tourists.

Expanding the use of renewable energy sources Uzbekistan has great potential for the development of wind and solar energy. Projects are already being implemented that will allow increasing the share of renewable sources to 30% in ten years.

In Uzbekistan, the GEFF (Green Economy Financing Facility) project provides funding, advice and grants to private companies to improve their competitiveness through high-performance technologies and practices.

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A green economy minimizes not only the use of energy and water in production and consumption, but also the negative impact on the environment and climate.

The GEFF is supporting this transition by providing financing for investments in Green Technologies:

- Technologies that minimize energy use
- Technologies that generate energy from renewable sources
- Technologies that protect water resources.

In accordance with the GEFF agreement, the EBRD provides loans to participating local financial institutions (partner banks) to refinance private borrowers. These funds are being invested in projects that minimize the impact on climate, in line with the EBRD's global strategy to transition to a green

economy, reduce greenhouse gas emissions and improve energy efficiency.

GEFF Uzbekistan is supported by a dedicated team of consultants from among engineers, environmental, finance and marketing experts who will offer partner banks and their client's direct support and advice throughout the life cycle of a green project using best-in-class technologies. The customer support package is free of charge

Technical assistance is provided by a local GEFF team that assists companies at various stages of project development, investment appraisal and project implementation. This helps to identify the best solutions and ensure the successful financing of quality green economy projects.

In turn, Ipak Yuli Bank received a credit line of \$ 5 million from the EBRD to finance private companies in the green economy.

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