

# Prospects and Ways of Developing The "Green Economy" in Uzbekistan

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## **Abstract:**

The degradation of ecological balance necessitates a global transition to a green economy, characterized by resource efficiency, environmental sustainability, and social equity. Uzbekistan, facing environmental challenges such as water scarcity, land degradation, and air pollution, has initiated steps toward integrating green economy principles, including renewable energy adoption, green technologies, and sustainable agriculture. Despite efforts, challenges remain in terms of financial limitations, technological dependence, legislative gaps, and low environmental culture, indicating the need for a systematic analysis of prospects and development strategies tailored to Uzbekistan's context. This study aims to analyze Uzbekistan's green economy transition, assess existing obstacles, explore successful international experiences, and propose strategic solutions for sustainable development. Uzbekistan has made significant progress in creating legal frameworks, expanding renewable energy infrastructure, and initiating green city and agricultural projects; however, challenges persist in financing, technological modernization, and environmental awareness. By synthesizing international best practices with Uzbekistan's specific conditions, this research highlights innovative approaches such as public-private partnerships, digital environmental monitoring, and eco-education to accelerate the green transition. The findings emphasize that a comprehensive, innovation-driven, and socially inclusive strategy can enable Uzbekistan not only to achieve environmental sustainability but also to foster economic growth, job creation, and improved public health, positioning the country as a regional leader in sustainable development.

**Keywords:** Green Economy, Sustainable Development, Ecology, Renewable Energy, Uzbekistan, Innovation, Economic Reforms, Green Technologies

## Introduction

Violation of the ecological balance, one of the global problems of the 21st century, poses the need for humanity to transition to a new economic model - a green economy. A green economy is a system of economic activity based on resource-saving, environmentally friendly, sustainable and environmentally safe technologies. The Republic of Uzbekistan is also taking important steps in this direction, seeking to optimize the economy from an environmental point of view.

Green economy is considered as a means not only to protect the environment, but also to ensure economic growth and stability, create new jobs and improve the standard of living of the population. The article analyzes the prospects for the transition to a green economy in Uzbekistan, existing problems and ways to solve them.

## Methods

This study employed a qualitative analytical method to explore the prospects and challenges of developing a green economy in Uzbekistan[1]. The research was based on a systematic review of national and international policy documents[2], including the Republic of Uzbekistan's "Strategy for the Transition to a Green Economy" and reports by international organizations such as UNEP[3], the World Bank, and the OECD[4]. Official statistics, government resolutions, and recent project outcomes, particularly in the fields of renewable energy[5], agriculture, industrial modernization, and urban sustainability, were analyzed to identify ongoing initiatives and their socio-economic impacts[6]. Comparative analysis was used to examine Uzbekistan's progress against global best practices from countries like Germany, South Korea[7], and Canada, focusing on key areas such as renewable energy deployment, ecological agriculture, and green city initiatives[8]. In addition, trend analysis was conducted using secondary data sources like the Global Green Economy Index and Eurostat's renewable energy reports to evaluate Uzbekistan's positioning in the global transition toward sustainability[9]. Case studies[10], such as the Green Recovery project in Karakalpakstan[11], were also reviewed to draw insights on successful strategies and local adaptations. The study integrated economic[12], social, and environmental perspectives, highlighting interconnections and trade-offs[13], while synthesizing recommendations based on international experience and Uzbekistan's specific context. Emphasis was placed on policy frameworks, technological innovation[14], educational reform, and investment incentives to propose actionable strategies for enhancing the green economy in Uzbekistan[15].

## Results and Discussion

### 1. The concept of green economy and its relevance.

The green economy is a low-carbon and environmentally sustainable economic system based on the rational use of natural resources. According to the United Nations Environment Programme (UNEP), a green economy helps reduce environmental risks and resource scarcity while improving human well-being and social justice.

As a country facing environmental challenges, including water shortages, land degradation, air pollution and the Aral Sea tragedy, Uzbekistan has set a strategic goal of transitioning to a green economy.

### 2. Work is underway in Uzbekistan to transition to a green economy.

In recent years, positive results have been achieved in the following areas:

The legal framework has been created: in 2019, the draft "Strategy for the Transition to a Green Economy" was developed and relevant decisions were made. More and more attention is being paid to renewable energy sources. Large solar power plants have been built in the Navoi and Kashkadarya regions. Environmentally friendly transport infrastructure is being developed. The introduction of electric buses and electric vehicles is beginning.

Ecological technologies are being introduced in agriculture. Drip irrigation systems that save water are being expanded. Environmental awareness is increasing among the population. Environmental education is being strengthened in schools and higher education institutions.

### 3. Existing problems and obstacles

There are a number of problems on the way to a green economy in Uzbekistan. Lack of financial resources: large investments are required. Low technological base: High dependence on imported technologies. Lack of specialists: There is a shortage of qualified personnel in the field of environmental protection. Inconsistencies in legislation: Some laws and regulations are not fully implemented in practice. Low environmental culture of the population and entrepreneurs: Insufficient environmental awareness.

### 4. Suggestions and solutions.

The following measures will significantly contribute to the development of a green economy:

- a. Develop public-private partnerships.
- b. Support science and innovation.
- c. Stimulate through taxes and subsidies.
- d. Develop environmental education.
- e. Strengthen the digitalization and monitoring system.

### 5. Scientific basis and international experience.

The concept of a green economy was first put forward at the international level by the UN in 2008. According to reports prepared by UNEP, investments in the green economy lead not only to environmental benefits, but also to economic ones. According to the Global Green Economy Index (GGEI) for 2021, countries that have transitioned to a green economy have achieved sustainable growth in gross domestic product (GDP) and reduced environmental damage.

Countries such as the European Union, South Korea, Canada and China are investing heavily in green technologies and widely implementing renewable energy sources. In Germany, for example, more than 40% of energy comes from solar and wind sources.

Uzbekistan has also been developing green development strategies based on international experience since 2020, in cooperation with organizations such as the UN and the World Bank. A successful example is the Green Recovery project, which is being implemented in Karakalpakstan in 2023.

Uzbekistan's priorities in the green economy The following areas are considered priorities in Uzbekistan's strategy for transition to a green economy:

#### 1. Diversification of the energy sector.

The transition to renewable energy sources is one of the main directions of Uzbekistan's energy policy. By 2030, it is planned to obtain at least 25% of electricity from solar and wind energy. In 2024, the first large wind power plant will be commissioned in the Bukhara region.

#### 2. Greening of agriculture.

Agriculture is an important sector of the country's economy and should be based on the principles of environmental sustainability. Moderate use of fertilizers, water-saving technologies (drip irrigation), and agroecological approaches are being introduced. The concept of "green farms" is being implemented in cooperation with FAO (Food and Agriculture Organization of the United Nations).

#### 3. Ecological modernization of industry.

Projects are being implemented to reduce industrial waste, introduce an environmental monitoring

system and reuse waste. Construction of a modern waste processing complex has begun in Tashkent Region.

#### 4. The concept of green cities.

Several large cities of Uzbekistan (Tashkent, Samarkand, Nukus) are developing in accordance with environmental standards within the framework of the "green cities" program. Important components of this process are the use of gas and electricity in transport, as well as the creation of green areas (parks, groves).

#### 5. Management using digital technologies.

Experiments are beginning to use drones, satellites, and IoT (Internet of Things) technologies to monitor the environment. This allows real-time monitoring of the environmental situation and prompt action.

#### Socioeconomic benefits of a green economy.

The green economy is seen as a factor that ensures not only environmental sustainability, but also economic growth and social well-being. According to studies conducted by the UN, the World Bank and the ILO (International Labor Organization), the development of a green economy provides the following benefits:

##### 1. Creates new jobs.

According to the ILO 2023 report, the transition to a green economy could create more than 24 million new jobs worldwide. In Uzbekistan, it is planned to create about 300 thousand new jobs by 2030, especially in the areas of renewable energy, waste processing and environmental services.

##### 2. Increases investment attractiveness.

Green technologies and sustainable infrastructure are considered promising sectors for international investors. In 2022, the volume of foreign investment attracted to Uzbekistan in solar and wind energy alone exceeded US\$2 billion.

##### 3. Reduces health care costs.

Reducing air pollution and providing clean water and air have a positive impact on public health. According to research by the World Health Organization (WHO), after switching to green strategies, the number of diseases associated with air pollution has decreased by 30-40%.

##### 4. It is an effective tool in the fight against climate change.

The green economy helps prevent global warming by reducing carbon emissions. According to the 2022 Paris Agreement monitoring, countries that have chosen a green economy strategy have reduced CO<sub>2</sub> emissions by 20%.

##### 5. Encourages local production.

With the growing demand for environmentally friendly products in Uzbekistan, production volumes are increasing according to the "green business" model. This increases competitiveness in the domestic market.

## Conclusion

Green economy is a key tool for ensuring not only environmental but also economic and social sustainability. Although Uzbekistan is at the initial stage of green economy development, it can become one of the leading countries in this area by wisely using the available opportunities.

Through a long-term strategic approach, systemic reforms, international cooperation, innovation and increased environmental awareness, Uzbekistan can successfully achieve sustainable development

based on a green economy.

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