



## BUILDING A SUSTAINABLE FUTURE: UZBEKISTAN'S GREEN ECONOMY INITIATIVES AND STRATEGIC PRIORITIES

*DSc, Professor, Umarova Guzal Gayratovna*

*Tashkent State University of Economics*

*ORCID: 0009-0006-9421-0640*

[umarovaguzal79@mail.ru](mailto:umarovaguzal79@mail.ru)

***Ergasheva Farangiz Ulugbek qizi***

*Tashkent State University of Economics*

*ORCID: 0009-0008-0397-9724*

[ergashevafarangiz0511@gmail.com](mailto:ergashevafarangiz0511@gmail.com)

**Abstract:** *in recent years, the idea of a "Green Economy" has become very important for many countries as a key approach to securing a sustainable future. The world can no longer overlook the serious environmental and climate problems it faces. This is why many nations are now adopting new ways to address these challenges, with the green economy seen as one of the most reliable solutions. It offers a path not only to protect natural ecosystems but also to ensure a better future for upcoming generations. This article discusses the main causes of rapid climate change to highlight why moving towards a green economy is so necessary. It also focuses on Uzbekistan's steps in this direction, examining the country's goals, strategies, and initiatives for building a green and sustainable economy. As a developing nation, Uzbekistan is working on reducing greenhouse gas emissions, creating new job opportunities, and improving its environmental conditions through sustainable methods.*

**Keywords:** *green economy, Uzbekistan, sustainable development, environment, greenhouse gas emissions, sustainable future, innovative strategies, renewable energy sources.*

## ПОСТРОЕНИЕ УСТОЙЧИВОГО БУДУЩЕГО: ИНИЦИАТИВЫ И СТРАТЕГИЧЕСКИЕ ПРИОРИТЕТЫ «ЗЕЛЁНОЙ ЭКОНОМИКИ» УЗБЕКИСТАНА

*д.э.н., профессор, Умарова Гузал Гайратовна*

*Ташкентский государственный экономический университет*

***Эргашева Фарангиз Улугбек кизи***

*Ташкентский государственный экономический университет*

**Аннотация:** *в последние годы идея «зелёной экономики» приобрела особое значение для многих стран как ключевой подход к обеспечению устойчивого будущего. Мир больше не может игнорировать серьёзные экологические и климатические проблемы. Именно поэтому многие государства сегодня внедряют новые способы их решения, рассматривая зелёную экономику как одно из наиболее надёжных решений. Она предлагает путь не только к сохранению природных экосистем, но и к обеспечению лучшего будущего для грядущих поколений. В данной статье рассматриваются основные причины стремительных климатических изменений, чтобы подчеркнуть необходимость перехода к зелёной экономике. Также анализируются шаги Узбекистана в этом направлении, включая цели, стратегии и инициативы страны по построению «зелёной» и устойчивой экономики. Как развивающееся государство, Узбекистан*

работает над сокращением выбросов парниковых газов, созданием новых рабочих мест и улучшением экологической ситуации посредством устойчивых методов.

**Ключевые слова:** зелёная экономика, Узбекистан, устойчивое развитие, окружающая среда, выбросы парниковых газов, устойчивое будущее, инновационные стратегии, возобновляемые источники энергии.

## BARQAROR KELAJAK QURISH: O'ZBEKISTONNING "YASHIL IQTISODIYOT" TASHABBUSLARI VA STRATEGIK USTUVOR YO'NALISHLARI

*i.f.d., professor, Umarova Go'zal G'ayratovna  
Toshkent davlat iqtisodiyot universiteti  
Ergasheva Farangiz Ulug'bek qizi  
Toshkent davlat iqtisodiyot universiteti*

**Annotatsiya:** so'nggi yillarda "yashil iqtisodiyot" g'oyasi ko'plab mamlakatlar uchun barqaror kelajak qurishda muhim omil sifatida e'tirof etilmoqda. Dunyoda yuz berayotgan jiddiy ekologik va iqlim muammolari endilikda tobora keskin tus olayotganini inkor etib bo'lmaydi. Shu sababli ko'plab davlatlar ushbu muammolarni hal qilishning yangi usullarini qo'llamoqda, yashil iqtisodiyotni targ'ib qilish va rivojlantirish esa eng ishonchli yechimlardan biri sifatida qaralmoqda. Bu nafaqat tabiiy ekotizimlarni asrash, balki kelajak avlodlar uchun ham yanada yaxshi istiqbolni ta'minlash imkonini beradi. Ushbu maqolada tezkor iqlim o'zgarishining asosiy sabablariga e'tibor qaratilib, yashil iqtisodiyotga o'tishning naqadar zarurligi ta'kidlanadi. Shuningdek, unda O'zbekistonning ushbu yo'nalishda amalga oshirayotgan qadamlariga, mamlakatning maqsadlari, strategiyalari va tashabbuslari tahlil qilinadi. Rivojlanayotgan davlat sifatida O'zbekiston ham issiqxona gazlari chiqindilarini kamaytirish, yangi ish o'rinlari yaratish va ekologik sharoitlarni barqaror usullar orqali yaxshilash ustida faoliyat olib borayotgani yoritiladi.

**Kalit so'zlar:** yashil iqtisodiyot, O'zbekiston, barqaror rivojlanish, atrof-muhit, issiqxona gazlari chiqindilari, barqaror kelajak, innovatsion strategiyalar, qayta tiklanuvchi energiya manbalari.

### Introduction.

In today's rapidly advancing world, where technology and science are evolving at an unprecedented pace and life is becoming increasingly digitized, paying attention to the state of our environment has become more important than ever. Addressing the growing environmental challenges and finding sustainable solutions is no longer a choice but a necessity. In this context, the global movement towards a "green economy" is gaining momentum, with both developed and developing countries not only supporting green economy strategies and principles but also actively implementing them into practice. For this reason, it is crucial to first understand what a green economy is and how it can help us tackle environmental problems. A green economy is defined as an economic model that prioritizes the efficient use of limited natural resources while also promoting sustainable methods for extracting and utilizing these resources to meet the unlimited needs of humanity. The shift towards a green economy also aligns with the concept of a low-carbon economy, which is built on the responsible consumption of resources and minimizing environmental harm caused by human activities. The possibility of transitioning to a green economy was first brought into global focus during the Los Cabos Summit in Mexico in 2012. Later, on December 2, 2022, the President of the Republic of Uzbekistan approved the National Program for the transition to a green economy, aiming to ensure sustainable economic growth until 2030. The primary goals of this program are enhancing labor productivity and ensuring the effective use of natural resources. However, the pathways to achieving a green economy differ from country to

country. For example, Denmark, recognized as a global leader in green technologies, focuses on advancing wind power, biomass energy, and solar energy solutions. China, on the other hand, is steering towards a sustainable future not only through groundbreaking technologies but also through strict environmental regulations and international collaborations. Uzbekistan, too, is making significant strides toward becoming a green economy. According to the Presidential Resolution on the approval of the “Strategy for Transition of the Republic of Uzbekistan to a Green Economy for 2019–2030” (Decree, 2019), the country has set ambitious goals such as improving energy efficiency and reducing the carbon intensity of its GDP by 2030. One of the important issues addressed in Uzbekistan’s green economy strategy, alongside improving the labor market and developing new methods of sustainable energy extraction, is the Aral Sea disaster, which remains one of Central Asia’s most severe environmental crises. The excessive and inefficient use of water resources, especially for cotton irrigation, has caused the catastrophic shrinkage of the Aral Sea. The strategy outlines comprehensive measures to mitigate this problem and seeks long-term, sustainable solutions. Moreover, the modernization of technologies and the advancement of digitalization are highlighted as crucial areas that need significant development to ensure Uzbekistan’s successful transition to a green economy.

### Literature review.

In their research titled “Current State, Problems and Solutions of the Green Economy Policy in Uzbekistan”, Tadjiboev, Mirzakarimova, Haydarov, and Achilov (2024) analyzed several critical challenges faced by Uzbekistan in its transition towards a green economy. The authors identified key issues such as insufficient financing, lack of comprehensive regulations and legal frameworks, and low public awareness regarding environmental policies. Their recommendations emphasize the necessity of allocating substantial financial resources for the development of these sectors, which could facilitate a smoother transition to a green and sustainable future.

Similarly, in another study, Shodmonov (2025), under the supervision of Mustafakulov, explored “Challenges and Opportunities in Implementing Green Economy Indicators in Uzbekistan’s Industrial Sector under the Fourth Industrial Revolution”. Their research highlights that in the era of Industry 4.0, digital modernization is essential for achieving targets such as reducing energy intensity and lowering greenhouse gas emissions by 2030. The study emphasizes the importance of deploying modern technologies, including the Internet of Things (IoT), Artificial Intelligence (AI), automation, and big data analytics, to enhance performance in key industrial sectors such as oil and gas, metallurgy, and chemicals.

In the article “Green Economy: Is It a Path to Sustainable Economic Growth for Uzbekistan?”, Saydullayev (2023) argues that the transformation from a traditional economy to a green economy presents significant challenges for Uzbekistan, as well as for other developing countries. His research identifies a major barrier as the potential negative impact on real incomes, stemming from environmental protection policies such as carbon taxes and additional fees for the exploitation of natural resources.

Further, Isakulova, Usmanova, and Saidvaliyeva (2024) in their research titled “Transition to a Green Economy in Uzbekistan: Prospects and Challenges for the Development of Renewable Energy”, conducted a comprehensive analysis of the factors influencing green economy development. Their findings underscore the role of ecological innovations in accelerating the transition process, highlighting the importance of establishing targeted energy tariffs and green financial instruments to enhance investment attractiveness in this sector. They also advocate for liberalizing the energy market to foster the efficient adoption of advanced energy and renewable technologies.

Additionally, Sangirova, Shadieva, Raimjanova, Umurzakova, and Akramova (2024), in their study “Green Economy Development in the Republic of Uzbekistan”, emphasize that the

duration and complexity of the transition to a green economy vary from country to country, influenced by diverse economic, technological, and regulatory factors. For instance, they cite Denmark's extensive use of biomass, wind, and solar energy, positioning it as one of the pioneering countries set to eliminate fossil fuel dependency in the near future. Conversely, China is approaching its green economy goals by integrating innovations in green technologies, infrastructure, and stringent environmental regulations.

Avdzhi (2022) also contributes to this discourse by noting that the shift to alternative energy sources and the establishment of a new technological foundation is a highly individualized process for each country, necessitating significant time and strategic planning to achieve meaningful progress.

### Research methodology.

This research is grounded in both theoretical and methodological scientific approaches, using document analysis and an in-depth review of existing materials. The first part of the study focuses on identifying and explaining the reasons behind the urgent need to shift towards a green economy, highlighting its importance for global sustainability. To support this explanation, a visual cycle diagram was introduced to clearly illustrate the processes and impacts of climate change.

The second part of the research is dedicated to analyzing Uzbekistan's efforts in transforming its economy towards an environmentally-friendly model. This section examines the country's current position, strategies, and initiatives, providing a detailed analysis supported by official documents and agreements signed since 2019. Additionally, the paper outlines Uzbekistan's specific goals aimed at achieving a green economy by 2030, presenting them through visual illustrations for better clarity and understanding.

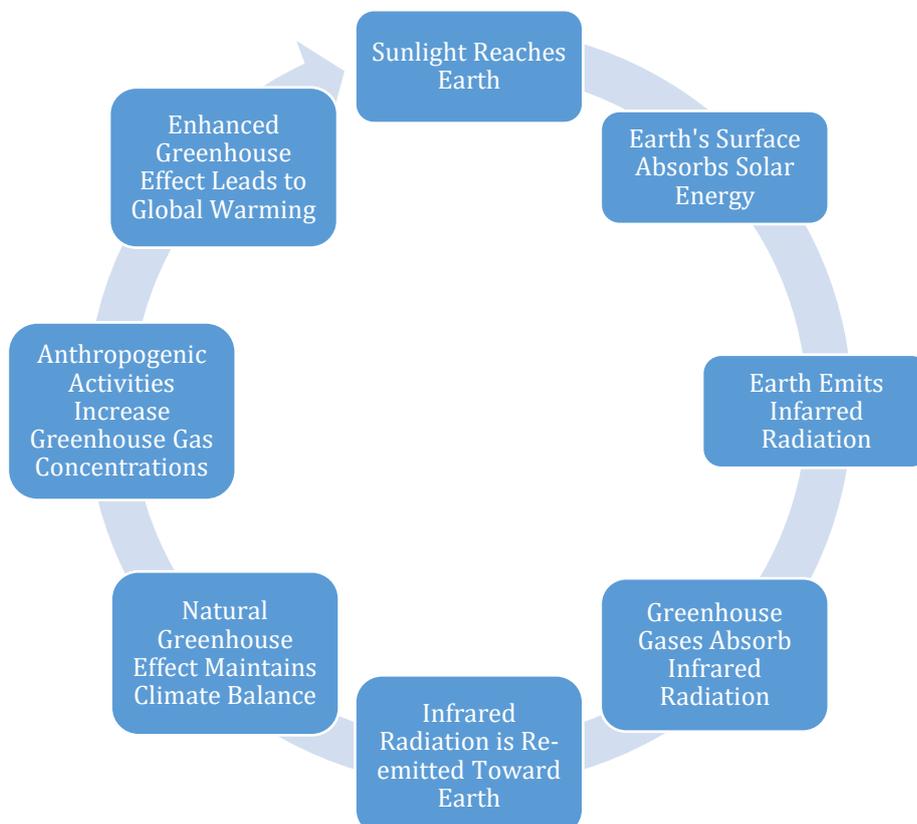
### Analysis and discussion of results.

*The Impact of Climate Change on Global Sustainability: A Key Driver for Green Economy Transition.*

One of the primary drivers behind the transition to a green economy is the urgent need to address climate change. Climate change refers to the long-term alteration of global weather patterns, largely driven by human activities. Among the most pressing consequences of climate change is global warming — the continuous rise in Earth's average temperatures, which poses serious threats not only to human societies but also to ecosystems, flora, and fauna. Global warming has far-reaching negative impacts on ecosystems, food security, water availability, and agricultural productivity. For example, by 2023, global temperatures had risen by approximately 1.2°C compared to pre-industrial levels (IPCC, 2021). This increase has been a significant factor in the alarming rise of extreme weather events. Over recent decades, the world has witnessed an unprecedented surge in natural disasters — from record-breaking storms and devastating floods to prolonged droughts and uncontrollable wildfires affecting various regions (IPCC, 2007). To fully understand the gravity of the problem, it is essential to explore how and why the climate is changing. Scientific evidence overwhelmingly shows that human-related activities are the primary cause of recent climate shifts. The rapid industrialization of the modern era has led to the establishment of countless factories and industries, many of which release vast amounts of carbon dioxide (CO<sub>2</sub>) and other harmful gases into the atmosphere during production processes. These gases accumulate in the atmosphere, trapping heat and contributing to the greenhouse effect. While carbon dioxide is the most prominent greenhouse gas, three other gases also play a pivotal role in intensifying the greenhouse effect: methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and chlorofluorocarbons (CFCs).

- Carbon dioxide, which naturally exists in the atmosphere, is released through both natural processes — such as volcanic eruptions — and human activities, including the burning of fossil fuels and large-scale deforestation (NASA, 2024).
- Methane is primarily emitted from wetlands, landfills, and rice paddies, as well as from livestock manure. However, an even more concerning source of methane emissions is the transportation sector, where it is released during the extraction and use of fossil fuels (NASA, 2024).
- Nitrous oxide is largely produced through agricultural activities, particularly the use of synthetic and organic fertilizers, and certain industrial processes (NASA, 2024).
- Chlorofluorocarbons, unlike the other gases mentioned, are synthetic compounds that do not occur naturally. They have been widely used as refrigerants, solvents, and aerosol propellants (NASA, 2024).

The excessive accumulation of these greenhouse gases in the atmosphere disrupts the natural balance of energy exchange between the Earth and space, trapping heat and intensifying the greenhouse effect. This process significantly accelerates global warming and contributes to the ongoing climate crisis. It's a well-known fact that the Earth receives heat and energy from the Sun. However, this process is not as simple as it might seem. Approximately one-third of the Sun's energy is immediately reflected back into space by the ozone layer and other atmospheric particles, which act as a filter, blocking harmful radiation such as ultraviolet rays from reaching the Earth's surface. The remaining two-thirds of solar energy passes through the atmosphere and is absorbed by the land, oceans, and air, driving essential processes like heating and evaporation. Under natural conditions, the Earth continuously releases the heat it absorbs, maintaining a balanced cycle of energy intake and release. However, human activities—particularly the burning of fossil fuels and deforestation—have led to an excessive buildup of greenhouse gases in the atmosphere. These gases, such as carbon dioxide, methane, and nitrous oxide, trap heat that would otherwise escape back into space.



**Figure 1. Greenhouse Effect**

As a result, this dense layer of gases acts like a giant blanket, preventing the Earth from cooling down efficiently. This disruption to the natural energy flow is what we refer to as the "greenhouse effect." Over time, the accumulation of these gases not only intensifies global warming but also damages the ozone layer, further worsening the planet's ability to regulate its temperature.

*The Transition Process and Goals of the Green Economy in Uzbekistan.*

Uzbekistan has undertaken a series of legislative and strategic measures aimed at facilitating its shift towards a green economy. A major milestone in this direction was the adoption of the "Strategy for the Transition to a Green Economy for 2019–2030", which was officially approved by the government in 2019. That same year, Uzbekistan entered into an agreement with Masdar, a prominent energy company from the United Arab Emirates, to construct a solar power station. This facility, designed with a 100 MW capacity, is projected to supply electricity to approximately 31,000 households and prevent the emission of 150,000 tons of CO<sub>2</sub> into the atmosphere annually (Saydullayev, 2023). Additionally, between 2019 and 2020, within the scope of the national "One Million Trees" initiative, around 3.8 million tree saplings were planted across the country (Saydullayev, 2023). This large-scale afforestation effort plays a critical role in enhancing air quality through increased oxygen production, thus supporting Uzbekistan's broader environmental objectives and reinforcing its commitment to becoming a greener nation.

Such ambitious projects signify Uzbekistan's proactive approach toward achieving global environmental targets. These actions reflect the country's growing recognition of planetary boundaries and its dedication to fostering an eco-conscious lifestyle among its population. Furthermore, the Presidential Decree (2025) on the "State Program for the Implementation of the Strategy "Uzbekistan — 2030" in the Year of Environmental Protection and Green Economy", outlines several key goals to be achieved by 2025. These include the development of 100,000 hectares of green zones on the dried seabed of the Aral Sea and expanding forest plantations in the Aral Sea region to reach 2.1 million hectares. Other targets involve increasing the nation's total forested area to 4.1 million hectares and expanding the share of protected natural territories to 14.5 percent of the country's land. The program also emphasizes utilizing untapped potential in areas such as eco-tourism, nursery cultivation, and the production of medicinal plants, which can simultaneously contribute to environmental preservation and create new income opportunities for the local population. Moreover, Uzbekistan plans to attract no less than \$30 million in funding from international financial institutions to establish public "in-vitro" laboratories, as well as to provide loans for private entrepreneurs to set up their own laboratories in regions such as Karakalpakstan, Bukhara, Surkhandarya, Jizzakh, Fergana, and Tashkent. These initiatives represent only a fraction of the comprehensive strategy aimed at facilitating the country's sustainable development and ecological transition.

The priority directions of Uzbekistan's green economy policy have been identified as follows:

–Diversifying agricultural production to strengthen resilience against climate-related risks: Meaning that growing a wider variety of crops and farming in ways that help farmers better cope with the challenges brought by changing weather patterns.

–Implementing sustainable pasture management practices: Using new and smarter methods to take care of grazing lands so they remain productive without being overused or damaged.

–Expanding tree plantations with species that are tolerant to climate change: Planting more trees that can survive in harsh and shifting climate conditions to keep greenery alive in the long term.

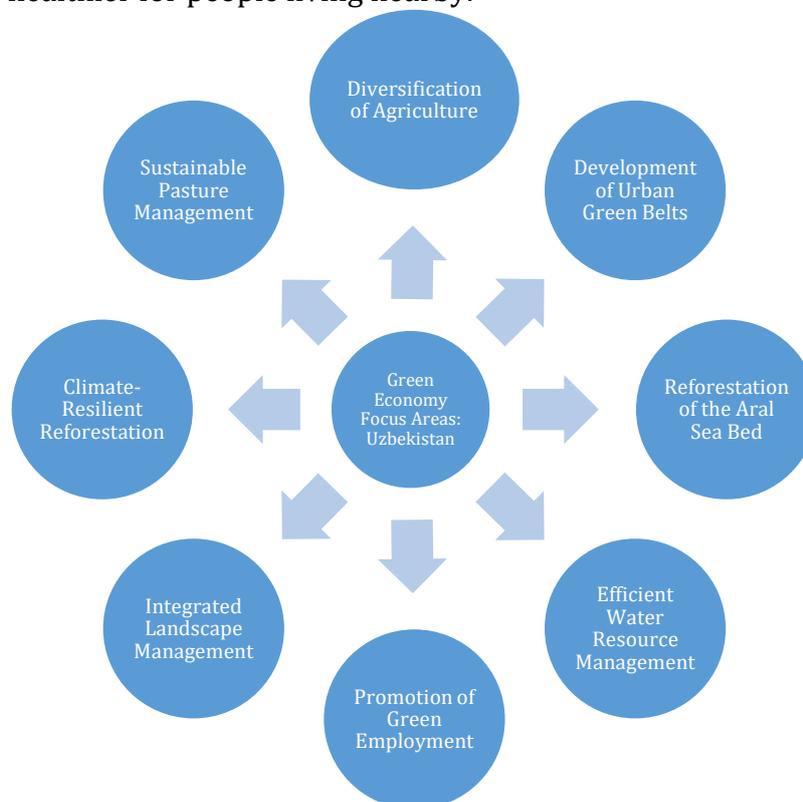
–Developing and enforcing a landscape management plan to replace traditional sectoral approaches with a holistic, ecosystem-based strategy: Planning land use by looking at the bigger environmental picture, making sure all parts of nature work together instead of managing sectors separately.

–Increasing employment opportunities through “green job” programs and enterprises based on the sustainable use of natural resources: Creating new job opportunities that not only provide income but also protect and responsibly use the country's natural resources.

–Establishing scientifically grounded water intake limits from water bodies to reduce overall water consumption and address water scarcity challenges: Setting clear rules on how much water can be taken from rivers and lakes to make sure we use water wisely and avoid running out.

–Reclaiming forest lands on the dried seabed of the Aral Sea: Replanting forests on areas where the Aral Sea has dried up, with the goal of bringing life back to the damaged environment.

–Creating “green belts” around urban centers in the Aral Sea region and near major industrial zones: Surrounding cities and factories with green spaces to clean the air and make the environment healthier for people living nearby.



**Figure 2. Key Priority Areas of Uzbekistan's Green Economy Policy**

In addition, attracting foreign investments into various sectors of the green economy is expected to significantly enhance Uzbekistan's capacity to implement these strategies effectively. Given the country's rapidly growing population, it becomes increasingly important to generate new employment opportunities, particularly within the green economy, to secure a sustainable and prosperous future for Uzbekistan.

### **Conclusion**

In conclusion, the transition to a green economy has become a critical necessity for both developed and developing countries, driven largely by the escalating challenges of climate change, which are intensified by human activities that release harmful emissions into the atmosphere and contribute to the greenhouse effect. This research, using Uzbekistan as a

case study, has explored the strategies and initiatives being implemented to build a sustainable and environmentally responsible future. Although Uzbekistan officially initiated its green economy transition in 2019 by approving the “Strategy for Transition to a Green Economy for 2019–2030,” the country has already made significant progress in embracing eco-friendly policies and practices. It is important to acknowledge that transitioning to a fully green economy is a gradual and complex process; however, Uzbekistan is steadily advancing towards its strategic objectives. With the frameworks and priorities currently guiding its development, Uzbekistan is well-positioned to achieve notable results by 2030, reflecting its firm dedication to environmental sustainability and long-term development goals.

### Summary and suggestions.

It should be highlighted that Uzbekistan, one of the developing countries, is making strides towards becoming a green economy country. In this case, a bright example can be the fact that with the sign and initiative of the President of the Republic of Uzbekistan, the year 2025 is declared as “The Year of Taking Care of the Environment and Green Economy.” Nonetheless, in order to achieve the desirable results in the sector of Green Economy, the following recommendations and suggestions will be given:

- Uzbekistan, in order to foster the implementation of green economy policy, should pay attention to digitalization and integrating cutting-edge technologies. With the help of this initiative, a huge amount of work that is currently maintained by human labor can be accomplished in a short period of time with little effort. On the other hand, as a result of climate change, the integration of modern technologies such as solar panels and wind power can give the country strong benefits.

- Next, the diversification of crop development can also provide the effective usage of land. Uzbekistan, which is considered to be a country popular for its abundant crops and harbor, can adapt to changing climate patterns.

- This point is regarded to be one of the main aspects, which is enhancing population literacy and awareness about environmental problems. The integration of green economy subjects into universities and schools, along with the launch of environmentally friendly projects and initiatives, can significantly improve the situation.

- It should be outlined that cooperation with overseas countries, especially those that are in the process of moving to a green economy, can foster the transition. The reason behind this idea is the exchange of ideas and cultural differences. Countries can help each other and receive benefits for their own progress by cooperating together.

- The last but not the least recommendation would be building a system inside the government that fully corresponds to the criteria of the green economy. If only a few sectors are led in an environmentally friendly way while others are not, it can be an overwhelming process to build a green economy country.

Taking everything into consideration, there is still room for improvement in the case of Uzbekistan. But with the help of a strategic and systematic approach, Uzbekistan has a huge potential to go beyond the frame and show fully dedicated results by realizing its powerful potential.

### References:

A. Avdzhi, (2022). *Green energy transition in Uzbekistan. Word in Science 3.*

Decree (2019). *Of the President of the Republic of Uzbekistan No. PQ-4477 dated October 4, "On the approval of the Strategy for Transition to a Green Economy of the Republic of Uzbekistan for 2019-2030."* Available at: <http://lex.uz//uz/docs/7582760>

Decree (2025). *Of the President of the Republic of Uzbekistan No. DP-16 dated January 30, "On the state program for the implementation of the strategy "Uzbekistan — 2030" in the "year of environmental protection and green economy."* Available at: <http://lex.uz//uz/docs/7375421>

IPCC (2007). FAQ 1.3: What is the greenhouse effect? Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report: Climate Change - Working Group I. Available at: [https://archive.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/faq-1-3.html](https://archive.ipcc.ch/publications_and_data/ar4/wg1/en/faq-1-3.html)

IPCC (2021). Summary for Policymakers. In: *Climate Change: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.

Isakulova, B., Usmanova, L. and Saidvaliyeva, D., (2024). Transition to a green economy in Uzbekistan: Prospects and challenges for the development of renewable energy. *E3S Web of Conferences*, 574, 01004. Available at: <https://doi.org/10.1051/e3sconf/202457401004>.

NASA (2024). The causes of climate change. NASA Science: Earth Science. Available at: <https://science.nasa.gov/climate-change/causes/>

Sangirova, U., Shadieva, D., Raimjanova, M., Umurzakova, N. and Akramova, N., (2024). Green economy development in the Republic of Uzbekistan. *BIO Web of Conferences*, 130, p.08028. Available at: <https://doi.org/10.1051/bioconf/202413008028>

Saydullayev, A., (2023). Green economy: Is it a path to sustainable economic growth for Uzbekistan? *British Journal of Global Ecology and Sustainable Development*, 15(April), pp.129-136. ISSN 2754-9291.

Shodmonov, R.G. and Mustafakulov, S.I., (2025). Challenges and opportunities in implementing green economy indicators in Uzbekistan's industrial sector under the Fourth Industrial Revolution. *Yashil Iqtisodiyot va Taraqqiyot*, (4), pp.76-87.

Tadjiboev, Z.M., Mirzakarimova, M.M., Haydarov, H. and Achilov, A., (2024). Current state, problems and solutions of the green economy policy in Uzbekistan. *Journal of Hunan University (Natural Sciences)*, 51(12), pp.147-153.