



**“ASSESSMENT OF THE ECONOMIC EFFICIENCY OF DEVELOPING RENEWABLE
ENERGY SOURCES IN UZBEKISTAN”**

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Abstract. The article analyzes the economic efficiency of developing renewable energy sources, in particular solar and wind energy, in Uzbekistan. Based on the urgency of preserving natural resources and maintaining ecological balance in the context of globalization, the essence of the concept of "green energy" and its importance as a system that causes minimal damage to the environment and ensures energy independence are highlighted.

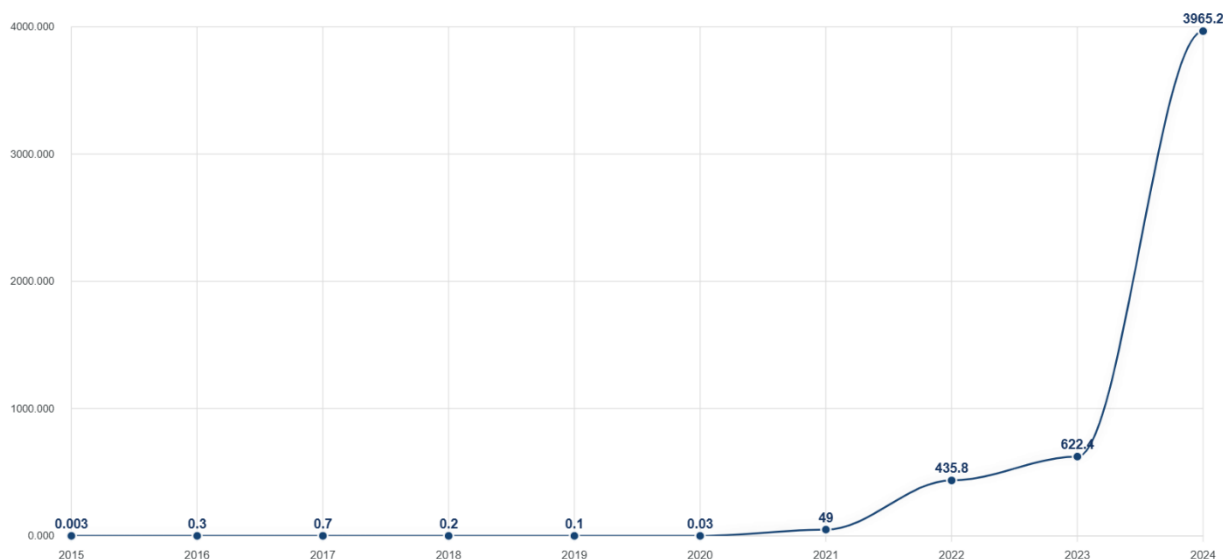
Keywords: renewable energy sources, green energy, economic efficiency, solar power plants, wind energy, energy security, "Uzbekistan - 2030" strategy, environmental sustainability, alternative energy, investments, solar energy volume, share of energy consumption.

In the current globalization of our economy, the preservation of natural resources and the maintenance of ecological balance are becoming very urgent issues. The Republic of Uzbekistan has a high potential for renewable energy sources, in particular in the fields of solar and wind energy. Therefore, the effective use of renewable energy sources is an important factor in ensuring economic stability, strengthening energy security and increasing environmental safety. Green energy is a system that causes minimal damage to the environment and uses renewable energy sources. Its main goal is to achieve energy independence, reduce carbon emissions and ensure environmental sustainability[1]. Based on this, countries around the world, including our country, are paying special attention to the creation of renewable energy sources. The results of current research in this area indicate the urgency of the issue of increasing the efficiency of alternative sources of energy other than traditional ones. In particular, we can mention the British economist and ecologist D. Steer, who studied the economic efficiency of renewable energy. He emphasized that investing in green energy not only protects the environment but also ensures economic stability in the long term. [2].

The “Uzbekistan-2030” strategy was approved by the Decree of the President of the Republic of Uzbekistan No. PF-158 dated September 11, 2023[3]. The fact that this strategy identifies the development of renewable energy sources as one of the priority areas further increases the importance of the reforms being implemented in this area. Within the framework of this strategy, the transition to a “Green Economy”, a sharp increase in the use of alternative energy sources, which are its basis, as well as the target indicators of increasing the capacity of renewable energy sources to 25 thousand MW and their share in total consumption to 40 percent, were set. Such actions will ensure the transition of our country to environmentally friendly energy and, as a result, increase the stability of energy supply.

As can be seen from the statistical data, it reflects the dynamics of the volume of electricity generated by solar power plants in the period from 2015 to 2024. This data serves as an important basis for analyzing the development trends of renewable energy sources, in particular solar energy.

According to the data in Figure 1, the amount of energy produced by solar power plants during 2015–2020 was almost zero. This period can be explained by the insufficient investment in the sector, the underdevelopment of infrastructure, and the stage of formation of the technological base. (Figure 1)

1-rasm**The volume of electricity generated by solar power plants¹**

Subsequently, a significant increase will be observed. That is, it is associated with the strengthening of state policy towards renewable energy sources, the attraction of foreign investments and the commissioning of modern solar power plants. Although the production volume in 2021 was low, this stage is significant as a starting point for development. It can be seen that the growth continued steadily in 2022–2023. During this period, the production volume increased several times, which indicates that the share of solar energy in the national energy balance is increasing. At the same time, an increase in technological efficiency and the commissioning of new projects also played an important role.

In recent years, there has been a sharp jump. The production volume has increased several times compared to previous years, reaching a maximum of 3965.2 million kWh. This indicates that large solar power plants are starting to operate at full capacity, and the principles of the "green economy" have become a priority in energy policy.

Based on this information, we can conclude that alternative energy sources have a high strategic importance in the future of our country's economy.

References

1. Mirzaev A. (2021). O'zbekistonda yashil energetika: muammolar va imkoniyatlar. Toshkent: Iqtisodiyot va innovatsiyalar nashriyoti.
2. Stern, D. I. (2004). Economic growth and energy. Encyclopedia of energy, 2(00147), 35–51.

¹ <https://siat.stat.uz/reports-filed/446/line-data>



3. Decree of the President of the Republic of Uzbekistan, “O‘ZBEKISTON — 2030” STRATEGIYASI TO‘G‘RISIDA 11.09.2023 yildagi PF-158-son.
4. <https://siat.stat.uz/reports-filed/446/line-data>