

ENERGY POLICY IN TAJIKISTAN IN THE CONTEXT OF TRANSFORMATION: DOMESTIC REFORMS AND REGIONAL COOPERATION

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Abstract: *The article examines the development of the energy sector of the Republic of Tajikistan as a key component of sustainable economic growth and national security. Particular attention is paid to the strategic priorities outlined in the 2024 presidential address, including the achievement of full energy independence. The study analyzes the large-scale modernization of energy infrastructure, including the reconstruction of major hydropower plants and the implementation of new projects such as the Rogun Hydropower Plant and the Sebzor HPP. The increasing role of renewable energy, especially hydropower and solar energy, is highlighted in the context of global climate challenges. The paper also explores Tajikistan’s participation in international initiatives, particularly the CASA-1000 project, as an important factor in regional energy integration. In addition, the article provides a comprehensive theoretical analysis of the key factors influencing energy security, including resource, economic, institutional, technological, environmental, and social dimensions. It is concluded that a systematic and integrated approach to managing these factors is essential for ensuring a stable, sustainable, and resilient energy system in Tajikistan.*

Keywords: *energy security, Tajikistan, energy independence, hydropower, renewable energy, Rogun HPP, CASA-1000, energy policy, sustainable development, green energy, infrastructure modernization*

The energy sector of the Republic of Tajikistan has occupied a central place in state policy in recent years, serving as the foundation for the country's sustainable economic and social development.

This sector is considered fundamental, largely underpinning the progress of all other sectors, as well as improving the population's standard of living and quality of life. In his Address to the President of the Republic of Tajikistan, Emomali Rahmon, “On the Main Directions of Domestic and Foreign Policy”, presented on December 28, 2024, development priorities were clearly outlined, including achieving energy independence as one of the key strategic goals of the state.

The head of state emphasized that the people of Tajikistan have a moral right to a dignified life, and energy development plays a decisive role in ensuring this right. In this regard, the Government is consistently implementing a policy aimed at the efficient use of all available resources, particularly the potential of green energy. Thus, the strategic vision






for energy development forms the basis for practical steps to strengthen the country's energy security [5].

The logical continuation of these priorities has been the active development of energy infrastructure. In recent years, the country has undertaken large-scale construction and modernization of energy facilities. Reconstruction of the Norak and Kairakkum hydroelectric power plants, costing 6.9 billion somoni, and construction of the Sebzor hydroelectric power plant, costing 700 million somoni, continued. The modernization of two units at the Norak and three at the Kairakkum hydroelectric power plants was completed, and in 2025, the upgrade of three more units at the Kairakkum plant was completed, increasing its capacity to 174 megawatts. Simultaneously, the modernization of one unit at the Norak hydroelectric power plant provided an additional 40 megawatt capacity increase, and construction of the 11-megawatt Sebzor hydroelectric power plant was completed. Thus, through these projects alone, the country's energy capacity has increased by approximately 180 megawatts by 2025. These measures not only expanded production potential but also created a solid foundation for the further transition to sustainable energy [8, p. 195].

In this context, the development of green energy as a strategic direction has acquired particular significance. It should be noted that by this time, approximately 98% of Tajikistan's electricity was generated from hydropower, making the country a global leader in clean energy production. In the face of global climate change, the country has placed its emphasis on further developing renewable energy sources, and in 2025, construction began on a 200-megawatt solar power plant in the Sughd region. Thus, environmental sustainability has become an integral part of energy policy and has strengthened the country's position on the international stage.

Continuing with the theme of increasing energy potential, strategically important national projects should be highlighted. The construction of the Rogun Hydroelectric Power Station (HPP), a major project of national significance, has occupied a special place in the country's energy strategy. Work on the project has been carried out at an accelerated pace: over the past two years alone, more than 9 billion somoni have been allocated from the state budget for these purposes, and the total volume of work completed has exceeded 50%. The government actively attracted international financial resources, collaborating with development partners and financial institutions. In particular, efforts were underway to attract 33 billion somoni in concessional funds, a significant portion of which were grants. Agreements were signed with six organizations totaling approximately 10 billion somoni, and their financing began in 2025. It is expected that, starting in May 2027, thanks to the commissioning of the Rogun HPP and the cascade of stations on the Vakhsh River, the country's electricity deficit will be completely eliminated, allowing Tajikistan to achieve





complete energy independence. The implementation of this project has thus become a key link in achieving long-term strategic goals [6].


Along with domestic energy development, expanding international cooperation has become an important focus. Alongside the development of its domestic energy infrastructure, Tajikistan actively participated in international projects. One such project was CASA-1000, aimed at transmitting electricity from Central Asian countries to South Asia. A key milestone was the commissioning of the 500 kV Datka-Sughd transmission line on March 31, 2025. On May 15, 2025, a regular meeting of the project's Intergovernmental Council was held in Dushanbe, attended by representatives from Tajikistan, Kyrgyzstan, Pakistan, and Afghanistan, as well as international organizations. It was noted that construction work in Tajikistan and Kyrgyzstan had been completed, while in Pakistan and Afghanistan it was in its final stages. During the meeting, the project's technical code, which is key to synchronizing and integrating the energy systems of Central and South Asian countries, was approved, and a number of important documents were signed. Thus, international initiatives have strengthened the country's energy security and facilitated its integration into the global energy system.

However, to fully understand the results achieved and development prospects, it is necessary to examine the theoretical aspects of energy security. Ensuring energy security requires not only infrastructure development but also a thorough analysis of the factors influencing its condition. While general conditions can be viewed as a relatively stable environment, energy security factors act as dynamic and interconnected forces that directly influence the stability of the energy system. As R. Shao notes, their combination is complex and requires a systematic approach to analysis [9, p. 108]. Consequently, effective policy in this area is impossible without considering the diversity of these factors.

First and foremost, the material basis of energy security is formed by resource and energy factors, including the volume of reserves and production of traditional resources, the potential of renewable energy sources, and the diversification of supplies. For the countries of Central Asia, water and energy potential are of particular importance, as emphasized in the research of A.K. Usenova [11]. In turn, economic and financial factors determine investment activity and the sustainability of the industry, including price dynamics, capital availability, and demand levels. As V.V. Lebedev notes, geopolitical conditions have a significant impact on the economic parameters of energy security [3, p. 229]. Thus, the economic and resource components are closely interrelated and require integrated management.

Further development of this topic leads to an analysis of the institutional, legal, and geopolitical factors shaping the regulatory environment for the energy sector. Legislative stability, regulatory effectiveness, and international cooperation are becoming key





conditions for the industry's sustainability. Integration processes, including the formation of common energy markets, are viewed as an important tool for strengthening energy security [4, p. 314]. Consequently, the political and legal environment plays no less a role than economic and resource factors.

Particular attention in modern conditions is paid to technological factors, the significance of which is rapidly increasing. The development of innovation, digitalization, and the implementation of smart grids increase the efficiency of energy systems, but simultaneously create new risks. In particular, this concerns cybersecurity and technological dependence. Modern energy systems are becoming vulnerable to cyberattacks, requiring a comprehensive approach to protecting infrastructure. Ignoring these threats can lead to serious disruptions even with fully functional facilities, emphasizing the need to establish technological sovereignty. At the same time, the influence of environmental and climatic factors is increasing, transforming from secondary considerations into key elements of energy policy. Tightening environmental standards, the effects of climate change, and international sustainable development requirements directly impact the generation structure and investment decisions [2, p. 25]. Thus, the environmental agenda is becoming an integral part of strategic planning in the energy sector.


In conclusion, the importance of social and personnel factors, which link energy security to human capital, should be noted. The level of professional training, public perception of energy projects, and the availability of energy resources significantly impact the sustainability of the industry. As E.A. Israilova and D.V. Lichkovakha emphasize, it is human capital that determines the system's capacity for innovation and efficient operation [4, p. 314]. Consequently, the development of human resources is a prerequisite for long-term energy security.

Thus, energy security is shaped by a complex and interconnected system of factors that require not only consideration but also active management. In the context of the global energy transformation, Tajikistan, by implementing large-scale infrastructure projects and developing international cooperation, is laying the foundation for a sustainable, adaptive, and secure energy system of the future.

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