THE SUSTAINABLE DEVELOPMENT STRATEGY OF THE REPUBLIC OF AZERBAIJAN AS A TOOL FOR SUCCESSFUL ENERGY TRANSITION

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Abstract

This paper provides information on the state of the energy transition in the Republic of Azerbaijan and compares these indicators with countries around the world. It is shown that, according to international organizations, Azerbaijan's Energy Transition Index is higher than that of several countries with greater economic capabilities. The application of new public administration technologies, developed and implemented for the first time in the world in Azerbaijan, has ensured that the country generates the highest number of Energy Transition Index units per financial resource in the world.

Keywords: COP29, sustainable development administration, climate change, energy transition

Introduction

In recent decades, humanity has faced numerous environmental, social, humanitarian and political challenges. All these challenges are interconnected and have serious consequences, leading to economic, social, environmental and humanitarian losses. Global climate change is one of the most significant challenges facing humanity and may threaten its existence (Aliyev, 2023 and Climate Reports, 2024). As a result, combating global change is an important international task, the implementation of which is carried out using various instruments, including international agreements and conventions. The primary international legal document for combating global climate change is the "United Nations Framework Convention on Climate Change" (UNFCCC). This convention was adopted in 1992 and supplemented by the Kyoto Protocol in 1997 and the Paris Agreement in 2015 (United Nations Framework Convention on Climate Change, 1992). The progress of countries – parties to the convention in implementing the tasks in the field of global climate change is the subject of discussion at special UN Conferences (COP), which are held annually in various countries around the world. In 2024, this twenty-ninth UN Conference (COP 29) will be held in Baku. The choice of the capital of Azerbaijan as a platform for discussing such a global problem as the fight against climate change is based on the country's high reputation as an important international platform for discussing global problems. Baku has repeatedly acted as an international center for discussing global economic, social and humanitarian problems of sustainable inclusive development (Baku Humanitarian Forum, 2022).

The holding of the UN Conference on the Climate Changes (COP 29) in Baku in 2024 is also associated with the successes achieved by the Republic of Azerbaijan in the field of energy efficiency (Alakbarov & Lawrence, 2017). This article examines some of the processes

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of formation and development of the national strategy for energy transition of the country, which is the basis for combating global climate change. The indicators of energy transition in Azerbaijan compared with the energy transition indexes of the world countries.

The energy transition planning as a long-term policy

The year 2004 can be considered the basis of the modern concept of energy transition of the country, when in accordance with the Order of the President of the Republic of Azerbaijan Ilham Aliyev, a special national program for the use of alternative and renewable energy sources was approved in the country. It should be noted that this program was adopted in conditions when the country had to solve such important problems as the placement and provision of vital needs of about a million refugees and internally displaced persons, who at that time constituted 13% of the country's total population, the formation of a new modern security system capable of restoring territorial integrity and sovereignty throughout the country, the creation of an effectively functioning innovative economy based on the principles of sustainable development, capable of ensuring the solution of existing problems, the development of human potential for these purposes through the development of science, education, sports, culture, etc.

It is important to note that all of this occurred in a country that was energy self-sufficient and, moreover, a recognized global exporter of hydrocarbon resources. This means that the initiation of energy transformation in the Azerbaijan Republic was not a necessity arising from energy shortages, but rather a response to the goals of sustainable development aimed at preventing processes that lead to global climate change.

Energy transformation, which gained significant momentum in the Azerbaijan Republic following the adoption of a targeted national program in 2004, transitioned to institutional reforms in 2009. In accordance with Decree No. 123, dated July 16, 2009, by President Ilham Aliyev, the State Agency for Alternative and Renewable Energy Sources was established in the country. For successful energy transformation aimed at reducing impacts on global climate change, the State Strategy for the Development of Alternative and Renewable Energy, covering the period from 2012 to 2020, was of great importance. This strategy, approved by President Ilham Aliyev on December 29, 2011, by Decree No. 1958, facilitated significant progress in the energy transition. Overall, it should be noted that in the Azerbaijan Republic, over the past two decades, more than ten various decisions have been made at the state level, aimed at fostering sustainable development processes and fulfilling the country's international obligations under the UN Framework Convention, the Kyoto Protocol, and the Paris Agreement (United Nations Framework Convention on Climate Change, 1992).

The implementation of energy transition tasks required training of personnel capable of solving various problems related to global climate change based on knowledge in the field of sustainable development management. For this purpose, on June 4, 2015, the Cabinet of Ministers of the Republic of Azerbaijan adopted two Resolutions No. 213 and No. 214, which for the first time in world practice introduced a new specialty "sustainable development administration" into the nomenclature of higher education at the level of bachelors, masters and doctors of sciences. Several textbooks have been published on this specialty, which are the first in the world and have no analogues. Among them are "Fundamentals of Sustainable Development and Ecological Civilization Administration", "Fundamentals of Inclusive Development Administration", "Fundamentals of Human Development", "Fundamentals of Human Development and Ecological Civilization". All of these resources build knowledge and skills in the most modern technology of public administration, with a priority on the natural and social environment and corporate responsible decision-making.

The systematic efforts undertaken in the Azerbaijan Republic to reduce impacts on global climate change have led to progress in energy transition in the country.

Comparative assessment of energy transition efficiency

The country's achievements in the field of energy transition are reflected in the World Economic Forum Reports published in Geneva in 2023 and 2024 (Energy transition, 2023 and Fostering Effective Energy Transition, 2024). These reports contain information on the state of work in the field of energy transformation in countries around the world. A quantitative assessment of this indicator is given in the form of the Energy Transition Index. This index is calculated based on indicators that consider such parameters as the share of renewable energy sources, energy efficiency, greenhouse gas emissions, energy security, the state of the energy infrastructure, the level and conditions of investment in the energy sector, the state of the regulatory framework for energy transition, etc.

The report published in Geneva presented the energy transformation indices for 120 countries. The Republic of Azerbaijan with an index of 62 ranks 32nd in the world, which is a significant achievement. Azerbaijan's energy transformation index is higher than a number of countries that are members of the European Union and the Organization for Economic Cooperation and Development. Among the countries whose data are presented in the Figure is Italy, which is also a member of the group G 7 (Figure 1).

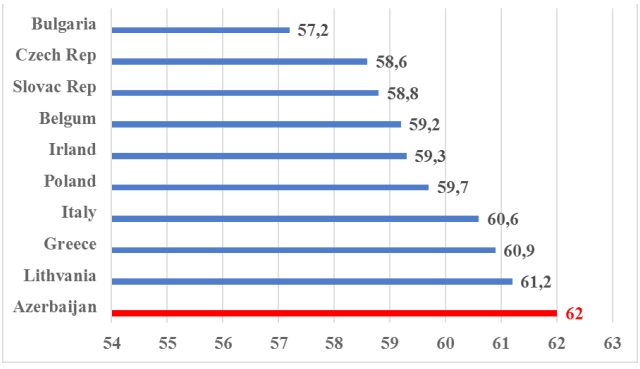

Figure 1. Energy transiation indices of the Republic of Azerbaijan and countries with high indicators in the field of economic development (Energy transition, 2023).

The countries whose data are presented in Figure 1 belong to the group of states with high economic potential. The GDP indicators in US per capita dollars taking into account the Purchasing Power Parity of these countries significantly exceed the economic

potential of Azerbaijan (GDP per capita, PPP, 2024). Despite this, the Energy Transition Index in Azerbaijan is higher than in the compared countries.

There is a simple rule in the management of sustainable development administration processes: in conditions of limited material and financial resources, high results can be achieved only through innovative public administration and on ground management technologies. Azerbaijan's successes in effectively managing the processes of energy transition are the result of applying innovative technologies in public administration for sustainable development. These methods of public administration, based on the application of a complex of synergetic, complementary, compensatory, resonant technologies, developed for the first time in the Republic of Azerbaijan, ensured the successful development of the country (Alakbarov, 2019 and Alakbarov, 2023). According to the World Economic Forum, the World Bank, the Republic of Azerbaijan is a world leader in the field of sustainable inclusive development, which is the most modern indicator of state development (GDP per capita, PPP, 2024 and The Inclusive Development Index, 2018).

The success of the Azerbaijan Republic in managing energy transformation processes is evident when analysing the effectiveness of energy transformation management in oil and gas producing and exporting countries (see Figure 2).

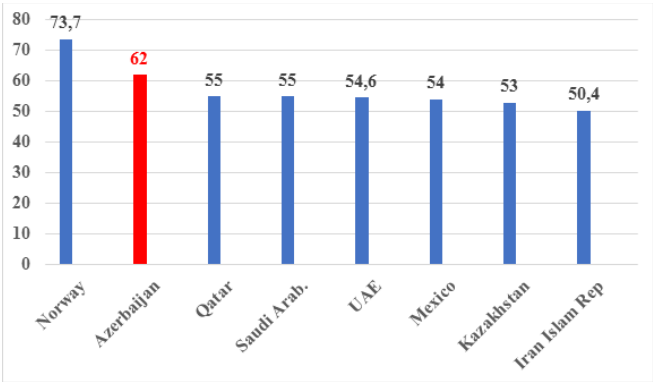

Figure 2. Energy transformation indices of the Republic of Azerbaijan and countries with high indicators in the field of economic development (Energy transition, 2023).

The data presented in Figure 2 shows that among hydrocarbon-producing and exporting countries, the Azerbaijan Republic ranks second in the world regarding the current state of energy transformation. Only Norway has a higher energy transformation index than Azerbaijan. However, the effectiveness of management processes aimed at preventing global climate change and mitigating unavoidable consequences is significantly higher in Azerbaijan than in Norway. According to data from the World Economic Forum and the World Bank published in 2023 and 2024, Norway generates 0.61 units of the Energy Transformation Index for every unit of GDP (1,000 US dollars, adjusted for Purchasing Power Parity). In Azerbaijan, the use of the same amount of material resources (1,000 US dollars, adjusted for Purchasing Power Parity) contributes to the formation of 2.62 units of the Energy Transformation Index. As seen, the effectiveness of resource management aimed at reducing impacts on global climate change in Azerbaijan is significantly higher than in Norway (Energy transition, 2023 and GDP per capita, PPP, 2024). It should be noted that the Republic of Azerbaijan is also characterized by a high energy efficiency (Alakbarov, 2019).

It should be noted that the Republic of Azerbaijan is a global leader in the effective management of material resources in order to ensure the energy transformation process. A comparative analysis of the data presented in Figures 3 and 4 illustrates this process.

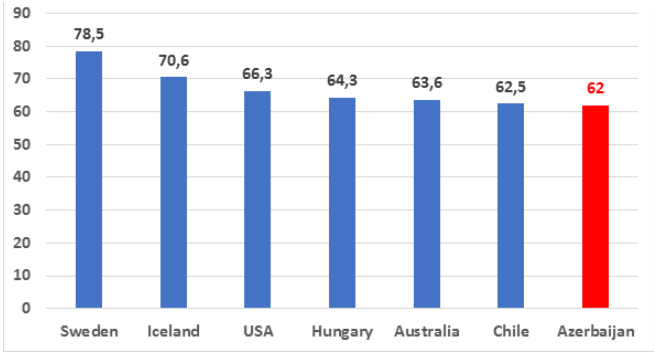

Figure 3. Energy transformation indices of countries with the highest indicators and the Republic of Azerbaijan (Energy transition, 2023).

The data presented in Figure 3 show that Azerbaijan has the lowest energy transformation index among the compared countries. According to this indicator, the country lags behind Chile by 21%.

However, the analysis of the data presented in Figure 4 shows that the greatest efficiency in organizing the management of material resources in order to reduce the impact of global climate change is demonstrated in the Republic of Azerbaijan.

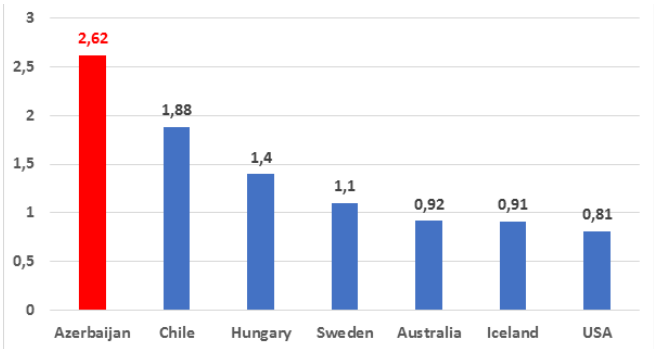

Figure 4. Energy Transformation Indices (ETI) formed by using one unit of GDP (1000 US dollars taking into account purchasing power parity) in countries with the highest ETI indicators and the Republic of Azerbaijan (Energy transition, 2023 and GDP per capita, PPP, 2024).

It is known that the Energy Transformation Index depends not only on the share of renewable energy sources in the total energy consumption of the country. When calculating the ETI, such indicators as energy efficiency, energy security, energy stability, greenhouse gas emissions, investments, legal support, etc. are taken into account. The innovations in public administration applied in the country, based on a set of synergistic, complementary and resonant technologies, ensure high efficiency not only in the implementation of tasks in the field of sustainable development, but also in ensuring the inclusiveness of this process. According to

international development institutions, the Republic of Azerbaijan, which ranks 75th in the world in terms of economic opportunities, ranks 25th in the world in terms of inclusive development indicators (The Inclusive Development Index, 2018).

Innovative technologies in the field of sustainable development management, first developed and applied in the Republic of Azerbaijan, are an important contribution to the fight against global climate change.

Conclusion

Research has shown that forward-looking planning of activities in the field of energy transition, initiated in the Republic of Azerbaijan in 2004, has significantly contributed to progress in this area. Azerbaijan's Energy Transition Index is higher than that of several countries with the more valuable economic capabilities. The new public administration technologies, which were first developed and implemented in Azerbaijan, have significantly improved the efficiency of material resource utilization to achieve the goals of the energy transition. Undertaken comparisons have shown that Azerbaijan generates more Energy Transition Index units per unit of GDP than the compared countries.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Peer-review

Externally peer-reviewed.

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Conflict of interest

No potential conflict of interest was reported by the author(s).

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