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## AZERBAIJAN–GEORGIA: STRATEGIC COOPERATION IN RENEWABLE ENERGY POLICY

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**Summary:** *Against the backdrop of global climate change, energy security concerns, and the pursuit of sustainable development goals, the transition toward renewable energy sources has accelerated in recent years. The South Caucasus region, distinguished by its rich natural endowments and strategic location, has also been affected by this transformation and is increasingly becoming an active participant in the process. Two countries of the region—Azerbaijan and Georgia—rank among those possessing substantial renewable energy potential. Effectively harnessing this potential, both states are regarded as countries that have been successfully implementing renewable energy policies.*

*The article aims to examine Azerbaijan–Georgia cooperation in the field of renewable energy. Within the scope of the study, the legislative framework governing renewable energy cooperation, as well as implemented and planned projects, were analyzed through document review and comparative analysis methods. Drawing on both primary and secondary sources, the scientific novelty of the research lies in analyzing bilateral cooperation in renewable energy through the theoretical lens of liberal institutionalism and providing a comprehensive perspective on the impacts of this cooperation on both bilateral and regional collaboration.*

**Keywords:** *Azerbaijan, Georgia, renewable energy, green energy cooperation, energy security*

### Introduction

Energy is one of the fundamental needs of modern societies and a direct determinant of economic growth and quality of life. In their article “The Future of Renewable Energy in Developing Countries,” Esin Esra Şahin and Okyay Uçan define energy in technical terms as “the capacity to perform work” [14]. Since the Industrial Revolution, nonrenewable fuels such as coal, oil, and natural gas have served as the primary sources for meeting energy demand. However, the finite nature of these resources, their contribution to carbon emissions, causing environmental degradation, and their adverse effects on global climate change have driven humanity toward the search for renewable and sustainable energy alternatives. In this context, renewable energy sources have gained prominence due to their potential to provide clean and continuous energy production.

The increasingly severe effects of global warming have compelled countries worldwide

to limit the use of conventional energy sources, thereby enhancing the significance of alternative energy options. This global challenge has prompted shifts in national energy policies and, alongside measures adopted by international organizations, has accelerated the green transformation of corporations. According to Ahsen Saçlı, sustainable energy is of critical importance for the sustainability of life on Earth [13]. From this perspective, it has become one of the priority issues considered by states.

Many scholars agree that renewable energy sources will be used more effectively in the future. For instance, Muhammed Kula argues that renewable energy sources, developed as alternatives to depleting energy resources, are expected to occupy a much larger share of the global energy mix in the coming years [9].

Renewable energy sources include hydro-power, solar, wind, geothermal, wave, biomass, and others. Both Azerbaijan and Georgia are co-

ountries endowed with abundant renewable energy resources. The purpose of this article is to examine the renewable energy policies of these two countries and their cooperation in this field.

Approaching the subject from a neoliberal theoretical framework, the article conceptualizes energy cooperation between the Republic of Azerbaijan and Georgia through the lens of asymmetric interdependence. According to the theory of interdependence advanced by Robert Keohane and Joseph Nye, the expansion of economic and technical ties between states also fosters political cooperation. When one party holds a more advantageous position than the other, the relationship assumes an asymmetric character, resulting in a higher degree of dependence for the weaker party. In this regard, considering Azerbaijan's role as a major exporter of conventional energy, a leading regional actor, and the primary initiator of both traditional and renewable energy projects, Azerbaijan–Georgia energy cooperation can be characterized as asymmetrically interdependent.

The research is conducted through content analysis and comparative analysis of the legislation of international institutions, Azerbaijan, and Georgia regarding renewable energy policies, as well as annual reports of the relevant ministries of both countries. In addition, renewable energy investments in both states are examined, and agreements concluded to establish cooperation in this field are analyzed. It is anticipated that the renewable energy policies of the two states will facilitate meeting their energy needs through renewable sources, while cooperation in this area will contribute to their national economies and to Europe's energy security.

### **Azerbaijan's Renewable Energy Policies**

Azerbaijan's favorable geographical location and climatic conditions enable the extensive utilization of environmentally friendly and renewable energy sources. Considering that the country experiences an average of approximately 270 windy days and 300 sunny days per year, it can be argued that Azerbaijan possesses significant potential for the development of solar and wind energy. Given that nearly 60 per-

cent of the country's territory consists of mountainous terrain, wind energy stands out as a more cost-effective, environmentally cleaner, and practically inexhaustible option compared to other alternative energy sources such as solar, hydropower, geothermal, and biomass energy.

Azerbaijan ranks among the countries with high renewable energy potential. According to 2024 data, the country's technical potential for renewable energy resources is estimated at 135 GW onshore and 157 GW offshore. The economically viable potential amounts to approximately 27 GW in total, of which wind energy accounts for 3,000 MW, solar energy for 23,000 MW, biomass energy for 380 MW, and hydropower potential from mountain rivers is estimated at 520 MW.

Since 2004, Azerbaijan has undertaken various initiatives in the field of renewable energy, in the same year, a State Program on the utilization of renewable energy sources was adopted [4]. In recent years, the implementation of green energy policies in line with the requirements of the contemporary era has become one of the state's key priorities. In the policy document "Azerbaijan 2030: National Priorities for Socio-Economic Development," clean environment and "green growth" are identified as one of the five national priorities [2]. Similarly, within the framework of the "Socio-Economic Development Strategy of the Republic of Azerbaijan for 2022–2026," clean environment and green growth are defined as fundamental strategic directions [5].

In parallel with these initiatives, by Presidential Decree No. 2620 dated 3 May 2021, the territories liberated from occupation were declared "green energy zones" [6]. Furthermore, the Socio-Economic Development Program of the Nakhchivan Autonomous Republic for 2023–2027 envisages the implementation of projects involving the construction of solar and wind power plants [12]. All these policy measures aim to position Azerbaijan not only as a producer and exporter of traditional energy resources but also as a producer and exporter of green energy. In this context, the target has been set to increase the share of renewable energy in electricity

generation capacity to 30 percent by 2030 [2].

The declaration of 2024 as the “Year of Solidarity for a Green World” reflects the state’s consistent and determined policy in this field. Moreover, the hosting of the COP29 International Climate Conference in Azerbaijan serves as a clear indication of the country’s sensitivity to climate change issues. Azerbaijan’s efforts to combat climate change have been highly appreciated by the international community.

### **Georgia’s Renewable Energy Policies**

Georgia is among the countries that have taken significant steps toward the development of the renewable energy sector. The country ranks among the world’s leading states in terms of water resources per capita and is home to more than 26 000 rivers, approximately 300 of which are suitable for hydroelectric power generation [7]. Georgia’s total wind energy potential is estimated at 1,450 megawatts (MW), with an average annual electricity generation capacity of approximately 4,160 million kilowatt-hours (kWh).

From a technical and economic perspective, Georgia’s hydropower resources allow for the implementation of 2 286 projects, which together are expected to generate around 30 terawatt-hours (TWh) of electricity annually. In addition, the country possesses more than 250 natural and artificial geothermal sources located across 44 geothermal fields, over 80 percent of which are situated in western Georgia. Geothermal waters are primarily used for residential heating and agricultural activities, such as greenhouse farming [7].

Georgia’s wind energy potential is estimated at approximately 1,500 MW, corresponding to an average annual electricity generation capacity of about 4 TWh [11]. In terms of solar energy, many regions of the country experience between 250 and 280 sunny days per year, indicating that Georgia has considerable potential for both solar photovoltaic (PV) and solar thermal energy production.

In 2009, the Directive on the Promotion of Energy Use from Renewable Energy Sources was adopted. Subsequently, in June 2015, a new Energy Policy entered into force in Georgia.

The primary objective of this policy was to establish a comprehensive long-term national vision extending to 2030, with a particular emphasis on the utilization of renewable energy sources. This vision later served as the foundation for the formulation of short-term, medium-, and long-term strategies.

Within this framework, Georgia set the target of meeting 30 percent of its total energy consumption from renewable energy sources by 2020 and of implementing the requirements of the Renewable Energy Directive. Accordingly, the policy aimed to identify relevant policy and investment measures and to estimate the potential costs associated with their implementation.

In December 2019, the Law on the Promotion of Energy Production and Use from Renewable Sources was adopted. This legislation provides an effective legal and regulatory framework for projects developed under the build–own–operate (BOO) principle, offering investors access to attractive export markets and granting third parties free access to the electricity grid.

Furthermore, by Government Resolution No. 403 dated 2 July 2020, a support mechanism introducing market premium payments was established for hydropower, wind, and solar power plants with a capacity exceeding 5 MW.

Considerable progress has been made in the development of alternative energy sources in Georgia, particularly in the production and export of hydropower, wind, and solar energy. In 2020, the share of renewable energy sources in Georgia’s total energy supply was recorded at 19.5 percent, of which 15 percent was generated by hydropower plants and 5 percent derived from biomass-based energy, primarily wood and agricultural residues used for heating purposes [11]. Due to the country’s limited fossil fuel reserves, Georgia’s energy security largely depends on renewable resources, especially hydropower.

As of 2021, 81 percent of electricity generation in Georgia was supplied by renewable energy sources, predominantly hydropower and a single wind power facility. In the same year, seven large hydropower plants used to balance seasonal fluctuations in electricity production

accounted for 42 percent of total national generation. Georgia's only wind power plant, the Kartli Wind Power Plant, became operational in 2016 and operated with a high capacity factor of 46 percent in 2021 [1].

In recent years, there has been a notable increase in activities in this sector. In his annual report to parliament, Georgian Prime Minister Irakli Kobakhidze announced that the Asian Development Bank (ADB) had approved a grant-based Technical Assistance Package worth USD 104 billion to support Georgia's efforts to develop green hydrogen. According to the Prime Minister, the country faces a strategic task: "By 2030, national energy production must exceed consumption, and all necessary steps are being taken to achieve this goal"[15].

The Prime Minister also noted that a total of 284 contracts have been signed for the construction of new power plants: "Of these agreements, 214 relate to hydropower plants, 26 to wind power plants, and 44 to solar power plants" [8].

### **Azerbaijan–Georgia Green Energy Cooperation**

Within this framework, the projects that have been implemented and those currently planned have laid the groundwork for the emergence of new cooperation platforms and have given a new direction to the long-standing transit partnership between Azerbaijan and Georgia. In this context, at the end of 2022, the Strategic Partnership Agreement on the Development and Transmission of Green Energy was signed in Bucharest between the Governments of the Republic of Azerbaijan, Georgia, Romania, and Hungary, aiming to facilitate the transmission and supply of electricity generated from renewable energy sources from Azerbaijan and Georgia to Europe [3].

The agreement stipulates that the parties will support the expansion of existing infrastructure to enable the transmission of electricity produced from renewable energy sources via Georgia to Romania and Hungary, and subsequently to other European countries. To this end, the parties committed to joint action in the design, construction, and operation of a submarine

electricity transmission line across the Black Sea. Possessing significant economic and environmental potential, this project represents a comprehensive roadmap with a high capacity to strengthen the Azerbaijan–Georgia strategic partnership, expand regional cooperation in the field of green energy, and contribute to the energy security of both the region and Europe.

In February 2024, the establishment process of the Green Energy Corridor Power Company, which will assume responsibility for managing the Black Sea Submarine Energy Cable Project, was completed in Bucharest with the participation of the transmission system operators of Georgia, Azerbaijan, Romania, and Hungary.

The Black Sea submarine cable project is set to directly connect Georgia and Romania and, in a broader context, to integrate the electricity systems of the South Caucasus and Southeastern Europe, making it one of the largest infrastructure projects of its kind. The total length of the submarine cable will exceed 1155 km (1,115 km offshore and 40 km onshore), with a voltage capacity of 525 kV and a transmission capacity of 1,300 MW. The project also includes the installation of an optical fiber communication cable along the corridor in which the submarine electricity cable will be laid. The completion of the Black Sea submarine electricity cable is planned for 2030 [10].

On 4 April 2024, a Memorandum of Understanding on Cooperation in the Transmission and Trade of Green Electricity was signed between the Ministry of Energy of the Republic of Azerbaijan, the Ministry of Economy and Sustainable Development of Georgia, the Ministry of Energy and Natural Resources of the Republic of Türkiye, and the Ministry of Energy of the Republic of Bulgaria. The signing ceremony took place within the framework of the 11th Ministerial Meeting of the Southern Gas Corridor Advisory Council and the 3rd Ministerial Meeting of the Green Energy Advisory Council [10]. According to the document, the energy ministries of the four countries will contribute to strengthening cooperation between the public and private sectors in order to explore opportu-

nities for the modernization of energy systems and to implement investment projects aimed at expanding the transmission and trade of electri-

city. The memorandum also encompasses measures to enhance energy infrastructure and to promote the use of renewable energy sources.

### Conclusion

Renewable energy is not merely an alternative form of energy supply, it has increasingly become a fundamental pillar for environmental, economic, and social sustainability. In this context, it is imperative for countries, including Azerbaijan and Georgia, to effectively utilize their existing potential and prioritize the green transition within their energy policies. Both countries possess significant renewable energy resources, and harnessing this potential can yield more effective outcomes not only at the national level but also through regional cooperation mechanisms.

The theoretical framework adopted in this study—neo-liberalism combined with the asymmetric interdependence approach—provides an explanatory basis for analyzing Azerbaijan–Georgia green energy cooperation. According to the interdependence theory of Robert Keohane and Joseph Nye, increasing energy linkages between two states deepen not only economic interests but also political and institutional cooperation. In this relationship, Azerbaijan’s relative superiority in energy production and export endows the cooperation with an asymmetric character, while Georgia’s role as a transit country creates a mutually dependent but unequal relationship between the two parties.

Within this framework, the Black Sea Submarine Electricity Cable Project, which aims to transport the renewable energy capacity of Azerbaijan and Georgia to European markets, represents not only a technical infrastructure initiative but also a strategic cooperation model institutionalizing regional interdependence. This project generates economic benefits for both Azerbaijan and Georgia and contributes to Europe’s energy security, establishing a multi-layered interdependence in the energy sector.

Furthermore, the agreements signed between Azerbaijan, Georgia, Turkey, and Bulgaria on the transmission and trade of green electricity exemplify significant steps that support state green energy policies and strengthen regional integration. These agreements demonstrate, in line with the neo-liberal institutionalist perspective, how international cooperation mechanisms can be developed in a manner consistent with the economic development objectives of states. Consequently, Azerbaijan–Georgia green energy cooperation can be understood as a strategic partnership model shaped by asymmetric interdependence, supporting regional stability and sustainable development.

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## AZƏRBAYCAN–GÜRCÜSTAN MÜNASİBƏTLƏRİNİN YENİ İSTİQAMƏTİ: BƏRPAOLUNAN ENERJİ SAHƏSİNDƏ STRATEJİ ƏMƏKDAŞLIQ

**Samirə Həbibbəyli**

**Xülasə:** *Qlobal iqlim dəyişiklikləri, enerji təhlükəsizliyi və dayanıqlı inkişaf məqsədləri fonunda son illərdə bərpa olunan enerji mənbələrinə keçid sürətlənmişdir. Zəngin təbii ehtiyatları və strateji mövqeyi ilə seçilən Cənubi Qafqaz regionu da bu transformasiyadan təsirlənməkdə və prosesin fəal iştirakçısına çevrilməkdədir. Bərpa olunan enerji mənbələri baxımından zəngin potensiala malik regionun iki dövləti olan Azərbaycan və Gürcüstan son illərdə həyata keçirdikləri layihələr nöqtəyi-nəzərindən bərpa olunan enerji siyasətlərini uğurla həyata keçirən ölkələr kimi qiymətləndirilir.*

*Məqalənin məqsədi Azərbaycan-Gürcüstan münasibətlərinin yeni istiqamətlərindən biri kimi inkişaf etdirilən bərpaolunan enerji sahəsində əməkdaşlığın araşdırılmasıdır. Tədqiqat çərçivəsində bərpaolunan enerji əməkdaşlığına dair qanunvericilik bazası, həyata keçirilən və nəzərdə tutulan layihələr sənədlərin öyrənilməsi, müqayisəli təhlil və retrosektiv metodlar əsasında incələnməmişdir.*

*Məqalənin elmi yeniliyi bərpaolunan enerji sahəsində ikitərəfli əməkdaşlığın liberal instiutualizm nəzəri çərçivəsində təhlil edilməsi, habelə ikitərəfli və regional əməkdaşlığa təsirlərinə dair bütöv baxış bucağının qazandırılmasıdır.*

**Açar sözlər:** *Azərbaycan, Gürcüstan, bərpaolunan enerji, yaşıl enerji əməkdaşlığı, enerji təhlükəsizliyi*

## НОВОЕ НАПРАВЛЕНИЕ АЗЕРБАЙДЖАНО-ГРУЗИНСКИХ ОТНОШЕНИЙ: СТРАТЕГИЧЕСКОЕ СОТРУДНИЧЕСТВО В СФЕРЕ ВОЗОБНОВЛЯЕМОЙ ЭНЕРГИИ

Самира Габиббейли

***Аннотация:** На фоне глобальных изменений климата, проблем энергетической безопасности и целей устойчивого развития в последние годы значительно ускорился переход к использованию возобновляемых источников энергии. Регион Южного Кавказа, отличающийся богатыми природными ресурсами и стратегическим геополитическим положением, подвергаясь трансформации, и становится активным участником данных процессов. Азербайджан и Грузия, обладающие значительным потенциалом в сфере возобновляемой энергетики, в последние годы рассматриваются как государства, успешно реализующие политику в области возобновляемых источников энергии с точки зрения осуществляемых и планируемых проектов.*

*Целью статьи является исследование сотрудничества между Азербайджаном и Грузией в сфере возобновляемой энергетики, как одного из новых направлений двусторонних отношений. В ходе исследования были рассмотрены законодательная база сотрудничества в области возобновляемых источников энергии, реализуемые и планируемые проекты на основе изучения документов, были применены сравнительный анализ и ретроспективный метод.*

*Научная новизна статьи заключается в том, что анализ двустороннего сотрудничества в сфере возобновляемой энергетики проводился в рамках теоретического подхода либерального институционализма, а также его влияния на формирование целостного взгляда на двустороннее и региональное сотрудничество.*

***Ключевые слова:** Азербайджан, Грузия, возобновляемые источники энергии, сотрудничество в области зеленой энергетики, энергетическая безопасность*