New challenges of the Georgian energy sector and their legal regulation

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Abstract.
The energy sector is of crucial importance in the sustainable economic development process of Georgia and the growth of the population's well-being. Our country is not distinguished by excess reserves of energy resources. However, due to its geopolitical location, we have a significant electricity and gas transit function between Europe and Asia. The global processes of recent years, the Covid-19 pandemic and the Russia-Ukraine war, have put the energy sector in front of new challenges. The issue of highlighting the problems of energy security and efficiency, increasing the energy sector competitiveness, utilizing renewable energy sources, and developing recommendations for the legal regulation improvement of energy markets was on the agenda. The paper highlights the new challenges of the energy sector of Georgia; The possibilities of launching a new organized model of the electricity and natural gas market are analyzed; The results of the current legal reforms in the energy sector are discussed.

Keywords:
energy sector
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**Introduction.** The Covid-19 pandemic and Russia's military aggression in Ukraine demonstrated the need for sustainable energy sector development. The need to improve the management and legal regulation of the energy sector was on the agenda, as well as fully utilizing the energy potential; promoting the development of customer-oriented systems and their implementation; implementing competitive energy markets; Ensuring proper conditions for efficient and reliable operation of energy networks.

Among the 17 goals of sustainable development defined by the United Nations, one of the main goals of Georgia's development is to ensure universal access to affordable, reliable, stable, and modern energy. It is necessary to find and use alternative renewable resources, which will become a source of meeting the increased demand for energy. Sustainable energy is essential to strengthen the economy and achieve justice [1].

**Aim of research.** The purpose of the study is to highlight the challenges in the energy sector of Georgia, to develop recommendations for the improvement of the legislation on the legal regulation of issues in the electric energy and natural gas sectors, and to increase the competitiveness of the energy sector.

**Methodology.** In the research process, using quantitative-statistical methods, relevant scientific economic and legal literature, statistical data, annual reports are analyzed, and important findings reflecting the current reality are discussed.

**Literature review.** The World Energy Trilemma Index is the countries' energy policy evaluation indicator, according to which Georgia ranks 77th among 128 countries. Georgia's rating of B (75/100) in the energy equality dimension is due to the availability and low prices of electricity and other fuels. The low level of the energy security dimension is caused by limited supplies and growing dependence on imports [2].

A significant function of energy, as the most important branch of the economy, is to fully satisfy consumer demand and provide economic benefits for the country. For this, it is necessary to improve the energy export-import balance and develop the infrastructure, which in turn should be based on
the requirements of energy security and the principles of economic expediency. In recent years, the import of electricity exceeds the export and contributes to the outflow of foreign currency from the country. The increase in imports reduces the country's energy independence and represents a significant challenge [3]. Statistical data confirm that the price of imported electricity is lower than the price obtained by the renewable energy projects development, which hinders the private sector's interest in actively using renewable energy sources [4].

Against the background of irreversible economic progress, energy consumption in Georgia is increasing every year. From the beginning of the 21st century until today, energy consumption in the country has grown by about 90%. The largest consumers of electricity are industry (30%) and the commercial sector (30%), followed by the household sector (20%). Up to 18% of electricity is consumed free of charge by Russia-occupied Abkhazia, which is quite high and has a negative impact on the Georgia energy sector [5].

It is notable that 10% of the electricity consumed in Georgia and almost 100% of the natural gas and oil products are imported. The main part of the demand for electricity in Georgia is met by local generation facilities, hydro, and thermal power plants. Due to seasonality, hydroelectric power plants produce the maximum energy (more than 98%) in May-July and the minimum (about 46-53%) in December-February. Therefore, a large part of the demand for electricity in winter is covered by imports. Georgia imports electricity mainly from Russia, Azerbaijan, and Turkey. As for natural gas, Georgia mainly receives it from Azerbaijan. The country has significant hydropower potential, which, if used correctly, will allow it to reduce dependence on electricity and gas imports [5].

According to the Georgia Ministry of Economy information, there are currently 202 renewable energy projects (153 hydro, 18 wind, and 31 solar power plants) in various development stages [6]. Unfortunately, the use of renewable energy resources in Georgia is small, which is mainly due to the lack of technology and funding, both from the state and the private sector. The negative attitude of part of society...
(environmentalists) towards the construction of hydroelectric power stations remains a problem. The entire energy system needs to be updated and improved. For this purpose, the government developed a strategic document – the energy policy of the state of Georgia [7]. The document includes the visions, priorities, and measures of the energy policy of Georgia, as well as the main directions of energy security, which will become the basis for improving the regulatory legal framework of the field. Its implementation ensures the supply of sufficient quantity, high quality, and various types of energy at an affordable price.

Discussion/Results. As the population grows, so does the demand for energy, which in turn leads to a shortage of already limited resources and exacerbates the problems associated with climate change. The immediate challenges in the energy sector of Georgia were particularly affected by the Covid-19 pandemic. In March 2020, electricity consumption in the local market decreased by 8% compared to the same month of the previous year. However, these data do not adequately reflect the final results of the economic crisis, as the severe restrictions, which had a significant impact on all sectors of the economy, continued in the following years [8].

In 2022 in response to Russia's invasion of Ukraine, the European Union decided to accelerate the transition to renewable energy sources. According to the new plan of the European Union (REPower EU), the critical dependence on Russian fuel should be removed in the near future. The European Commission also notes that "the European Union is ready to help Ukraine, Moldova, and Georgia to be provided with reliable and sustainable energy" (European Commission, 2022) [9]. Azerbaijan's role in the Russian gas replacement imported into the European Union is also highlighted. In order to reduce dependence on electricity from Russia, on December 17, 2022, an agreement was signed in Bucharest on the construction of the world's longest underwater electricity transmission line, which will ensure the export of green energy from Azerbaijan to the European Union. The Black Sea submarine electric cable project will connect the electrical systems of Georgia-Azerbaijan-Romania and Hungary. It is important that Georgia is represented in the project not only as a transistor but also as an exporter. [6]
In order to improve the sustainability of the Georgia energy system and to establish it as a regional hub of electricity generation and transit, a ten-year network development plan for 2022-2032 was developed. That is a strategic document to ensure a stable, reliable, economical, and efficient transmission system at any stage of development, which will ensure grid security, sufficient transmission capacity for the renewable energy sources integration in the grid, and will facilitate the exchange of electricity with neighboring countries.

In recent years effective steps have been taken to reflect European directives and regulations in national legislation. The reforms aim to further strengthen the energy sector's efficiency, competitiveness, and security of supply. The obligations under the Association Agreement are being implemented step by step, and the necessary regulations are being introduced in the energy sector. The legislative changes are aimed at strengthening the competitive environment, which in turn will contribute to the growth of economic benefits from the sector. The management and supervision of the energy sector in Georgia are carried out by the Ministry of Economy and Sustainable Development, other public agencies, the Parliament, sectoral agencies, and regulatory bodies.

In order to legally regulate issues in the electric energy and natural gas sector, the law was adopted by the legislative body on July 31, 1997 (the Law of Georgia "On Electric Energy and Natural Gas") [10]. Initially, only the issues of electric energy and natural gas were regulated by the mentioned law. Later, it was amended, and water supply was added to the scope of regulation, although the name of the law remained the same. With the amendments of August 6, 2008, the goals of the law were added to the creation of the necessary legal bases for the supply of stable drinking water for all categories of consumers.

On December 27, 2019, the Parliament of Georgia adopted a new law On Energy and Water Supply, and the July 31, 1997 law On Electricity and Natural Gas was declared invalid [11]. According to the first article of the new law, a legal framework was created to consider and implement the requirements of various legal acts of the European Union in
the legislation of Georgia. These acts are:


b) Regulation N714/2009(EC) of July 13, 2009, on conditions for access to cross-border electricity exchange systems, which repealed Regulation (EC)N1228/2003;

c) Directive N2005/89/EC of January 18, 2006, on measures to ensure the security of electricity supply and investments in infrastructure;


Our country joined the founding agreement of the Energy Union in 2017 and has undertaken to establish open and competitive electricity markets. It was after this that a new era of adoption of laws and subordinate normative acts began in Georgia. The purpose of these innovations is to establish an effective regulatory base and prepare for the opening of electricity markets in the future.

The transformation of energy markets and ongoing energy reforms in Georgia have entered an active phase. For the opening of wholesale and retail markets, modern technologies are introduced in order to create an environment conducive to competition. The process of testing local electricity markets in different countries of the world has started. The main subject of the reform is the consumer, who should have the right to free choice. The Georgian National Energy and Water Supply Regulatory Commission (GNERC) has been protecting the interests of consumers in Georgia for years. On July 22, 2003, significant changes were made to the Law of Georgia On National Regulatory Bodies [12], in particular, the Office of the Public Defender of Consumer Interests was created to protect the interests of consumers. Also important is GNERC's resolution #6, dated July 5, 2012, On the Rules of Commercial
Quality of Services Provided by the Electricity Distribution Licensee, which was declared invalid as of August 31, 2016 [13]. On the basis of Resolution #13 of July 25, 2016, the Commercial Quality of Service Rules [14] was enacted, which were also declared invalid as of December 28, 2018. As of today, Resolution #20 of June 28, 2021, On Quality of Service [15] is valid. On the basis of this normative act, service conditions and standards were established, and in case of their violation, licensees are required to pay compensation for the benefit of users (the amount, rules, and conditions are described in the annexes of the named resolution). Also notable was GNRC's introduction of such an innovation as the commercial quality program, which means that the regulator will monitor in real-time the activities of companies on written applications submitted by consumers. In particular, applications filed in utility enterprises are assigned a so-called unique code, through which users can receive from GNRC complete information on each action taken by the company. In the near future, GNRC is determined to further improve consumer rights and intends to create a portal for consumers where they will receive complete information on supply interruptions, their own consumption, send statements to companies, and complain to GNRC. By the fall of 2023, a supplier selection platform is planned, with which the consumer will be able to see all valid offers for electricity supply through the website. Study them and choose the one that offers more favorable conditions.

A clear example of a one-touch service is connecting a new user to the network process, which is under the observation of studies by international authoritative organizations. It is significant that Georgia took an honorable place among the five countries of the world according to the number of the fewest contacts in connecting a new user to the network process [16].

In order to increase access to the services of utility companies, GNRC has also introduced the Justice Home service for the basic services of regulated companies. The service of the House of Justice can be obtained in the branches and public centers of the House of Justice throughout Georgia, which makes it much easier for the user to receive the
service. It is notable that the service includes the Legal Entity of Public Law Digital Governance Agency, LEPL House of Justice, and LEPL National Public Registry Agency. Within the framework of this project, the memorandum signed between the Commission, the House of Justice, the Public Registry, the State Services Development Agency, and the Data Exchange Agency provides the opportunity to develop new services.

A significant challenge was also in simplifying the relationship between the customer and the service enterprise, informing the customer through a short text message, and introducing an electronic receipt. The uniform service standard and the introduction of remote services based on these standards gave us the opportunity to replace the printed receipt with an electronic one, in particular, in all three sectors, the method of delivering the electronic receipt by text message was determined [16].

The so-called net metering, introduced by GNERC Semek in 2016, was also an interesting offer for consumers, which means that household and non-household consumers have the right to install a renewable energy power plant of up to 500 kilowatts on the roof of their house. To generate electricity himself, consume it, and give the surplus to the electricity supplier. With this innovation, the user is literally helping to replace the household with renewable energy sources.

Energy studies have shown that solar power plants on the roofs of buildings can meet about 25% of the total consumption of the European Union, which will partially change the energy dependence on Russia. That is why the European Union considers solar energy a great strategy. Rooftop solar infrastructure may become mandatory for commercial and public buildings from 2027 and for new residential buildings from 2029. In the new energy market model, consumers have lots of power and responsibility. The more kilowatts generated on the roof of one's house, the less imported electricity will be needed.

It is believed that wind and solar energy are relatively difficult to predict. Balancing the network is a challenge for decentralized trading development and system operators. It is assumed that by 2030 is possible to integrate 100% of the potential of wind and solar energy into the network in Georgia.
Currently, 26 licensees are operating in the electricity sector in Georgia, including production - 21, distribution - 2, transmission - 1, and market operation - 2. Unlicensed activities in the electricity sector include electricity production by a small power plant, supply, trade (including import and export), administration of a platform of bilateral agreements, and operation of a closed distribution system [17].

GNERC plays a significant role in the practical implementation of the legislation related to renewable energies and energy efficiency, which is manifested in the priority access of renewable energy sources to the network, as well as the charging of network access costs in full or in part to network operators. It is notable that GNERC, based on the Law of Georgia On the Promotion of Production and Use of Energy from Renewable Sources, in 2021 also approved the procedure for issuing the certificate of origin of electricity [17].

In accordance with the Law of Georgia On Water User Organizations of December 26, 2019 [18], the competence of the commission in the field of irrigation services includes the approval of the methodology for determining the tariffs for the services provided by the primary water user and the determination of the tariff until December 26, 2023, within four years from the enactment of the law, as well as - irrigation Based on the terms of the service agreement, consideration and resolution of disputes arising between the parties. In addition, the commission must determine the amount of the regulation fee and approve the manner of payment of this fee. Currently, intensive work is being done with various sector stakeholders to implement the powers defined by the law for the commission.

Conclusion and recommendations. Finally, as a conclusion, it can be said that the article discusses the European aspirations of Georgia and the prospects for the development of the local energy sector. As a result of the research, it was revealed that in order to overcome the challenges of the energy sector, it is necessary to strengthen partnership relations with the member states of the region and the European Union, and the Energy Union. The participation of
investors, international institutions, sector participants, and citizens in achieving the goals set by the energy policy is particularly significant.

Sound regulatory legislation will support competitive energy pricing and technological progress. It is necessary to consistently reflect the European directives and regulations in the national legislation, fulfill the obligations imposed by the association agreement, reduce dependence on energy imports, diversify import sources and routes, and implement free market mechanisms.

It is significant to increase public awareness of renewable energy production and its benefits and encourage solar and wind energy use in family farms and small businesses.

Reforms implemented in the energy sector of Georgia, taking into account the best European practices and established approaches in the Georgian market, will contribute to the growth of the country's energy independence and economic development as a whole.

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