

MAJOR CHALLENGES IN GEORGIA'S ENERGY SECTOR MANAGEMENT

Summary. *The inevitability of compatibility with global energy infrastructure, introduction of the cutting-edge digital technologies and many other innovative steps have required the transition of energy sector development in Georgia to a new stage and stake it in the face of many challenges.*

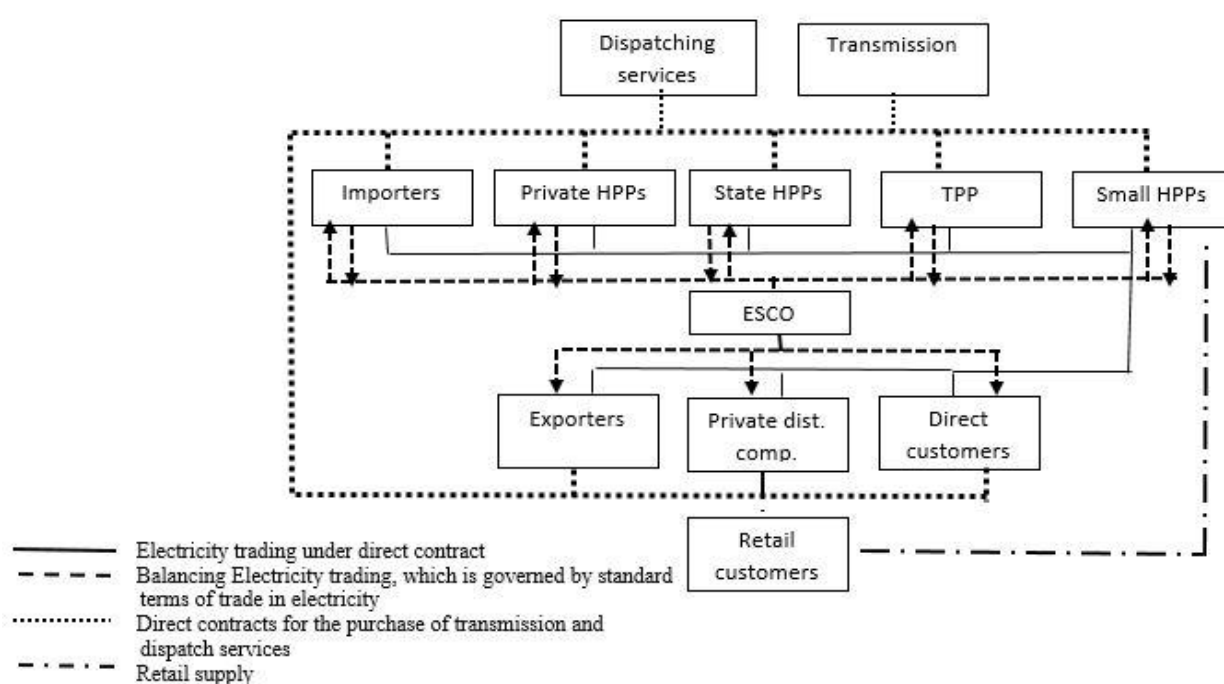
Key words: *Energy Market Liberalization, Blockchain Technology, Smart Contract.*

Introduction. One of the real factors in the growth of the country's economy is the development of electric utility industry, which forms the basis for the formation and development of the industry-based structure of the economy. The level of national economy and energy supply of population is largely dependent on the power industry. Without its adequate development, it will be a little chance of not only to revive the country's economy, but it will endanger its independence. The country has repeatedly suffered economic downturns. In addition, the economic situation has exacerbated problems in the energy sector, and the energy crisis has in turn contributed to the deepening economic downturn. It is clear that, under such conditions, a scientific study of the ongoing reform and strategic problems of power sector and, hence, the identification of development opportunities, is relevant both theoretically and practically[1].

Purpose. The purpose of the study is to identify challenges in Georgia's energy sector, assess foreign trends and formulate relevant recommendations.

Results. As a result of significant reforms in the Georgian electric utility industry over the last decade, the energy market structure has undergone significant changes. Currently, the sector is deregulated and three main areas of activity - generation, transmission and distribution are separated. The new market structure clearly defines the functions of all key market players.

Figure 1. *Electricity market structure:*



Source: (Georgian State Electrosystem, 2019-2029 Report) [4]

Those are:

- Ministry of Economy and Sustainable Development of Georgia, which defines the state policy on development of electricity market and energy sector in general;
- Georgian National Energy and Water Regulatory Commission (GNERC), which is an independent regulatory authority, issues electricity generation, transmission, dispatch and distribution licenses and sets appropriate tariffs;
- JSC Georgian State Electrosystem – the transmission and dispatch licensee;
- Electricity System Commercial Operator (ESCO).

Stability of economic development cannot be attained without continuously developing energy sector. However, it should be emphasized that most of the technical equipment is mechanized, automated and designed based on the use of electricity. In the electricity utility industry, both traditional and alternative energies are undergoing radical changes. At the same time, several large-scale processes are developing simultaneously. This is, firstly, a significant increase in the share of alternative energy in some countries; secondly, the use of coal and oil to generate energy is decreasing, and the proportion of capital distribution for fossil fuels needed for power generation is changing. Thirdly, technological changes condition a change in both the generation and transmission and distribution of electricity[2].

The implemented and ongoing reforms in the Georgian energy sector are the basis for raising the country's energy security, concluding comprehensive trade area agreement with the EU and participating in the European Energy Community.

Georgia's commitments to join the European Energy Community oblige us to develop the legislative framework necessary for the process of liberalization of the local energy market. The liberalization of the energy market in Georgia envisages approximation to the standards of Energy Community, and this process should be largely implemented by the introduction of effective market principles on energy efficiency. Georgia is taking the first steps towards energy market liberalization. The success or failure of this process depends on many factors, including the current state of energy markets, the degree of their regional integration, the country's overall investment environment, and so on.

The international experience shows that in case of implementation of the right energy policy, the liberalization of the electricity market will positively reflect in the efficient and ecological functioning of the electricity system. Energy market liberalization, as one of the components of Georgia's European choice, will make the local energy system more transparent, liberal, diversified, resilient and environmentally friendly. However, in order to achieve such results, in order to attract private investment in the energy sector, it is necessary to have a stable macroeconomic environment in Georgia. It also requires a holistic approach to the energy sector liberalization process, where first of all the political influence on each sector branch should be excluded, which can impede the establishment of market principles. And then, the relevant government agencies need to work more intensively to attract local or international private investment in the energy sector.

In Georgia, both the primary energy consumption and electricity consumption per capita are much lower than in the EU and the worldwide consumption on average. The main reason for this is the low level of development of electricity generation in Georgia. Consequently, since the country's economic policy is to encourage production, the construction of new generation facilities should continue. However, the role of energy in the development of the country as one of the sectors of the economy should be clearly and unequivocally understood. Foreign investments play an important role in the Georgian economy. It is believed that the leading role of the energy sector is to attract investment in the country's economy. Over 4 billion US dollars is expected to be invested in the energy sector over the next few years. However, it is necessary to liberalize the electricity market, which will increase competition and attract more investment.

Based on the study of the state of the energy sector in Georgia under modern conditions, there are three major challenges facing it:

1. Transition to renewable energy sources and diversification of supply create both new opportunities and challenges for the global energy infrastructure. The share of renewable energy in the market is increasing rapidly, resulting in the use of various energy sources; the installed capacity of the power plants will double in the next ten years; the so-called distributed generation share is increasing. However, the positive results are accompanied with new challenges that lead to a change in the business model and regulation policies of power transmission and distribution companies so as not to pose a risk to safe and reliable power supply.
2. The introduction of digital technologies into the energy system creates both new opportunities and new threats. On the one hand, digital technologies allow the creation of smart and interconnected networks, reducing energy prices. On the other hand, such technologies create the possibility of cyberattacks that prejudices the security of power systems[3].
3. Balancing energy supply and consumption leads to a new order. The development of alternative sources, as well as the slowdown in economic growth in China and India, have led to changing supply channels. Geopolitical changes, new distribution of powers and changes in the energy trade ways bring new challenges and opportunities in terms of energy security.

Conclusion. In light of the challenges in the energy sector, in order for the energy sector to function properly, flexibly, and in line with the changing world, it is necessary to:

- Assess the strategic goals and objectives of Georgia's energy market, which will identify its strengths and weaknesses;
- Implement the reforms in the energy market structure;
- Introduce an electronic auction that will simplify the relationship between generation sources and end users;
- Introduce blockchain technology-based electronic smart contracts as the main legal document of the (electronic auction) agreement.

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