

KEY CHALLENGES OF GEORGIA'S ELECTRICITY MARKET

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Abstract.

After signing a Protocol "Concerning the Accession of Georgia to the Treaty Establishing the Energy Community", Georgia took obligations to transform its Energy Markets. Accession Protocol envisages mandatory changes of electricity market by implementing so-called Third Energy Package. Respective requirements have to be implemented within the outlined deadlines. Georgia's Energy Market must go through major transformation towards fully competitive and liberalized market model by 1 January 2020.¹

The paper discusses Georgia's Electricity Market, including advantages and challenges it faces. The advantages of electricity sector of Georgia include its large hydro potential, interconnections with neighboring countries, good geographical location, etc. However, there are challenges and risks such as significant winter deficits of electricity, which is produced by hydro power plants and have to be filled by imports and thermal power plants in order to meet demand, difficulty in attracting foreign investments to the sector because of legal uncertainties, supply of electricity to occupied territory of Abkhazia and more.

The paper studies current electricity market structure and discusses main challenges of the sector, which is going through major reforms in order to fulfill all the obligations country has undertaken. Among this challenges are guaranteed power purchase agreements, which were introduced as a renewable energy support mechanism, electricity supply to Abkhazia – cost of which is not paid, customer protection etc.

Key words: *Energy Markets, Challenges, Reforms.*

Introduction

Georgian Energy System is integrated in the Caucasus Region due to its geographical location, conducting electricity exchange with the neighboring countries. In terms of further integration of the electricity market, the energy sector cooperates with the neighboring partners in the Republic of Turkey, Russian Federation, Azerbaijan and Armenia, ensuring both safe and secure operations as well as export/import and transit of electricity as well as mutual assistance in the emergency situations.

Currently we can say that Georgia has a well-functioning power sector. Electricity generation largely relies on hydropower. This factor unfortunately creates distinct seasonal deficit and to fulfill its consumption demands Georgia needs to import electricity from neighboring countries, specifically from Russian Federation, Azerbaijan and Turkey. The wholesale electricity market is based on bilateral agreements, whereas security of supply is guaranteed mainly through gas-powered thermal power plants (TPPs), and large hydro plants with big water storage.

As for the renewable energy, country has well-developed hydropower generation and has recently started using its wind energy potential. In the future it is intended to start using other sources of renewables such as solar energy. At this moment, Georgia has already developed a special law dedicated to renewable energy, which is already in force. Currently some other provisions regulating various features of renewable energy are set out in primary and secondary legislation. Presently, the electricity sector of Georgia is regulated by various legislative acts, which include the Law on Energy and Water

¹ This deadline was postponed until 1 July 2021 due to some major reforms in the sector.

Supply, adopted on 27 December 2019, Order №77 of the Minister of Energy on Approval of Electricity (Capacity) Market Rules, adopted on 30 August 2006 etc.²

Under current legislation, we can consider that Georgia's Electricity Market consists of three types of markets: 1. Direct Contract Market; 2. Balancing Market; 3. Guaranteed Capacity (Reserve) Market.³

Direct Contract Market is based on bilateral agreements between the sellers and buyers, which become effective upon registration with GSE (Georgian State Electrosystem – transmission system operator and dispatch licensee). The wholesale electricity market participants are electricity transmission and dispatch licensees and the qualified enterprises, which include power plants, distribution licensees, small power plants, importers, exporters, Electricity Market Operator – ESCO (JSC Electricity System Commercial Operator), final customers and wholesale suppliers. Any person willing to participate in wholesale trade must register as qualified enterprise with ESCO.

Currently, the wholesale electricity trade takes place either through the direct contracts, when the contract is signed between the qualified enterprises or through ESCO. If wholesale electricity trade is conducted through ESCO it's considered as balancing electricity^{4 5}. According to current legislation balancing electricity is traded through the Standard Conditions of Direct Contracts.

Direct contracts are concluded between the qualified enterprises through the negotiation. For Direct Contracts, one calendar month is considered as a settlement period. The period, volume and price of electricity supply should be determined in direct contract. If one of this information is missing, GSE will not register such contract. After registration of Direct Contract Georgian State Electrosystem is obliged to provide ESCO with one original copy of the Direct Contract. ESCO needs copies of Direct Contracts in order to fill its database of registered contracts and further use the information for the settlement. (Three copies should be registered with dispatch licensee – GSE).⁶

In current model of electricity market of electricity trade on the balancing market is carried out only through ESCO, based on negotiation or standard conditions of Direct Contracts. For this purpose ESCO prepares standard terms of Direct Contracts, which should be approved by the Regulatory Commission (GNERC) and registered by dispatch licensee (GSE).⁷

SCO manages balancing market in order to balance the difference between the actual generation/consumption and the contracted volumes of Direct Contracts. ESCO calculates the volume and price of balancing electricity monthly, for the settlement period and daily for the operative information.

As for Guaranteed Capacity (Reserve) Market, guaranteed capacity serves to the stability, safety and reliability of the Country's energy system. According to the current legislation a power plant or the power plants, which are identified by the Government of Georgia, could be the Guaranteed Capacity source. Presently there are five guaranteed capacity sources with total capacity of 622 MW and installed

² Secretariat's compliance report on Georgia; Energy Community; Implementation: Georgia; <https://www.energy-community.org/implementation/Georgia.html>

³ www.esco.ge

⁴ Balancing electricity – electricity (capacity) purchased and/or sold by qualified enterprises, which is used to meet actual needs of buyers and sellers, and to balance the contracted amount of the electricity stipulated in direct contract).

⁵ LAW OF GEORGIA ON ELECTRICITY AND NATURAL GAS; Article 2 – Definitions; paragraph z¹⁵; http://esco.ge/files/data/Legislation/Law_of_georgia_on_electricity_and_natural_gas_eng.pdf

⁶ The Electricity (Capacity) Market Rules; Article 9. Mandatory Registration of the Direct Agreement at the Dispatch Licensee; paragraph 2; subparagraph “B”; http://esco.ge/files/data/Legislation/Market_rules_eng.pdf

⁷ This model and current electricity market structure will continue to work till 1 July 2021. After that new electricity, market model will come into force, were market participants would trade through Energy exchange and balance their portfolios on balancing market platform, which will be organized by TSO.

capacity of 874 MW.^{8 9} Guaranteed capacity trade take place only through ESCO, based on the standard conditions of direct contracts approved by the Regulatory Commission. Commission determines the provision period and the price of guaranteed capacity for each guaranteed capacity source on daily basis. Guaranteed Capacity sources are at the disposal of the dispatch licensee. They are paid for their standby mode (as a guaranteed capacity payment) and operate to provide the stability of the system in this regards. All determined guaranteed capacity sources consume so-called “social gas”.

On 14 October, 2016 Georgia signed Protocol “Concerning the Accession of Georgia to the Treaty Establishing the Energy Community”, undertaking obligation to implement mandatory rules in energy sector in compliance with European Union Energy Acquis. Respective requirements have to be implemented within the set deadlines. Georgian Energy Market must go through major transformation towards fully competitive and liberalized market model by 1 July 2021. In order to meet these requirements Georgian Parliament already has implemented the law of Georgia on Energy and Water Supply, which was prepared in coordination with Energy Community experts.

Although being a Contracting Party of Energy Community is one big step forward, for not only energy sector of Georgia, also the country itself, but it still brings some serious challenges, which should be overcome.

One of the main challenges through Georgia’s journey towards a competitive power market will be the long-term guaranteed power purchase agreements¹⁰ with electricity producers executed in past few year.

In 2008 power purchase agreements were introduced as a way to promote and develop Georgia’s renewable energy potential. The main document regulating promotion of renewables is “State Program Renewable Energy 2008” adopted by the government. The document stipulates rules and procedures applicable to develop new renewable energy sources in the country and provides incentives for investors in terms of fixed price and guaranteed power purchase agreements. According to the document electricity from renewable sources must be sold domestically for ten years after commissioning during the three months of the winter period.¹¹ This measure was introduced in order to attract investors and develop new sources of renewable energy.

According to the applicable legislation, ESCO (the Electricity Market Operator), as the representative of the Government, is responsible to conclude with the investor company the agreement on guaranteed purchase of power, generated by the newly constructed power plant under the terms agreed upon by the Government of Georgia and the investor company based on the Memorandum of Understanding.¹² Since introducing this mechanism 40 guaranteed power purchase agreements have been signed between ESCO and the investor company and 18 power plants have been put into operation

⁸ G-POWER" LTD AIR TURBINE TPP;
"GEORGIAN INTERNATIONAL ENERGY CORPORATION" LTD ENERGY UNIT N:3 GARDABANI TPP;
"GEORGIAN INTERNATIONAL ENERGY CORPORATION" LTD ENERGY UNIT N:4 GARDABANI
TPP;"MTKVARI ENERGY" LTD ENERGY UNIT N:9 GARDABANI TPP;
"GARDABANI THERMAL PLANT" LTD COMBINED TPP.

⁹ www.esco.ge

¹⁰ So-called PPAs;

¹¹ State Program “Renewable Energy 2008” about Approval of the Rule to Enable the Construction of Renewable Energy Sources in Georgia; Georgian Government Decree N107 18 April 2008;
http://esco.ge/files/data/Legislation/decrees_107_final.pdf

¹² ABOUT THE APPROVAL OF THE RULE OF EXPRESSING INTEREST IN TECHNICAL AND ECONOMICAL STUDY OF THE CONSTRUCTION, OWNERSHIP AND OPERATION OF THE POWER PLANTS IN GEORGIA; GEORGIAN GOVERNMENT DECREE №214 21 August 2013;
http://esco.ge/files/data/Legislation/decrees_214_eng.pdf

already.¹³ Legislation stipulates that the volume of electricity to be purchased is whole electricity generated by the power plant or 20% of the actual electricity annually generated by power plant and released at the busbar. Purchase period varies from 10 up to 15 years from the date of putting the power plant into operation. Purchase months also vary according to power purchase agreement. It can be three, six, eight or even twelve months. The electricity generated from newly built power plant may be sold to any buyer in Georgia based on freely negotiated prices, and/or to ESCO based on the guaranteed power purchase agreement at fixed price.

As we can see a major issue for further development of competitive market in Georgia, it is the presence of long-term guaranteed power purchase agreements. Phasing them out from the market is not easy to manage. Of course, when the mechanism was introduced at that point it worked. It helped country to enhance energy security and export potential. Since 2008 Georgia has 29, new hydropower plants and 22 still have to be constructed, but if we talk about full liberalization of the market and competitive prices, guaranteed power purchase agreement practice should end. A new mechanism should be introduced in order to integrate existing guaranteed power purchase agreements into the new market model. The investment climate should be further improved by creating a transparent and stable regulatory regime.

Another worried issue of Georgian Power System is electricity supply to the occupied territory of Abkhazia, which remains big challenge for the sector. Current legislation provides that the region should be supplied with the electricity generated by Enguri HPP and Vardnili HPP Cascade, located in the Abkhazia region. Enguri HPP and Vardnili HPP Cascade are Georgia's two biggest regulatory hydro power plants.¹⁴ Region of Abkhazia is considered as the specific customer. Abkhazia does not pay the cost of consumed electricity and it is considered as bad debt.

In some cases, when the volume of electricity generated by Enguri HPP and Vardnili Cascade HPPs is less than the consumption of Abkhazia and there is not sufficient electricity for supply. ESCO (the Electricity Market Operator) fills the deficit by the balancing electricity or the electricity which is imported from Russia by ESCO. In this case, the electricity supply to Abkhazia is financed from working capital of ESCO, which Enguri HPP and Vardnili HPPs are obliged to compensate by supplying the equal energy to ESCO in summer months.¹⁵ It should be noted that in recent years the consumption of Abkhazia has increased drastically.

There were few suggestions regarding Abkhazia issue, for example that the cost of electricity supplied to Abkhazia should be covered by the Government of Georgia from the state budget, or the cost should be imposed on all customers of Georgia by including it in the tariff, but none of them were realistic. In the process of forming new electricity market of Georgia some different solution should have been considered taking into account political situation in the country, so on 16 April 2020 Government of Georgia adopted the "Electricity Market Concept", which regulates not only issue regarding supply to Abkhazia, but also transitional period of the market and new Electricity Market Model of Georgia.

¹³ PROMOTION OF CONSTRUCTION OF NEW POWER PLANTS; GUARANTEED POWER PURCHASE AGREEMENTS SIGNED WITH ESCO IN ACCORDANCE WITH THE MEMORANDUMS;

<http://esco.ge/en/electricity/promotion-of-construction-of-new-power-plants>

¹⁴ LAW OF GEORGIA ON ELECTRICITY AND NATURAL GAS; Article 49⁵ – Supply of electricity to the occupied territories;

http://esco.ge/files/data/Legislation/Law_of_georgia_on_electricity_and_natural_gas_eng.pdf

¹⁵ The Electricity (Capacity) Market Rules; Article 38. Issues to be Regulated for the Transitional Period with Regards to these Rules; http://esco.ge/files/data/Legislation/Market_rules_eng.pdf

“Electricity Market Concept” rules that electricity needed for supply to Abkhazia should be purchased on organized markets, within the framework of Wholesale Public Services.¹⁶

Last but not least, when discussing new market model, customer protection in terms of tariffs should be a priority. While opening market and introducing new trading mechanisms such as day-ahead market or intraday market we should not forget that this would have an impact on electricity tariff, which may increase. So in order to avoid drastic changes in tariff various supporting schemes should be developed. This will protect all household customers and small enterprises including vulnerable ones, which are in actual financial needs.

The adoption of the Law of Georgia on Energy and Water Supply by the Parliament of Georgia in December 2019 laid the foundation of the legislative base. After this date, the Government of Georgia adopted the "Electricity Market Model Concept" on 16 April 2020. On 11 August 2020, the Georgian National Energy and Water Regulatory Commission approved the "Electricity Day Ahead and Intra Day Market Rules". It is worth saying that the legislative framework in the field of energy fully meets the requirements of the European Union and corresponds to the Third Energy Package. Beyond that, simulations of new market model are actively made, there are different trainings for all market participants to enhance their knowledge and experience. This, in the future, will help market players to understand their new roles in the liberalized market.

To sum up, the electricity sector of Georgia has many challenges and many opportunities. Country should take advantage from its geographical location and its unused hydro potential, as well as incorporate new energy sources in its Energy Sector. However, much effort is needed to make use of the opportunities that exist, considering all the challenges electricity market faces.

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