Main Directions and Results of the Commission’s Activities

1. Electricity Sector
   1.1. Development of the Regulatory Frameworks ........................................ 17
   1.1.1. Development of the Regulatory Frameworks ...................................... 17
   1.1.2. The Current Structure of the Market and its Participants .................... 18
   1.1.3. Monitoring the Functional, Legal and Ownership Unbundling .............. 20
   1.1.4. Main Characteristics of the Market .................................................... 20
   1.2. Licensing ......................................................................................... 34
   1.2.1. Licensing Applications and Amendments to the License Registry ............. 34
   1.2.2. The Results of the Technical Regulation of the Electricity Transmission and Distribution Networks .......................................................... 34
   1.3. Pricing and Tariff Regulation ............................................................. 41
   1.3.1. Legal and Methodological Basis ....................................................... 41
   1.3.2. Tariff Regulation and Current Tariffs of the Sector .............................. 42
   1.3.3. Comparative analysis of tariffs ......................................................... 43
   1.3.4. Analysis of Investment Project Implementation .................................... 43
   1.4. Renewable Energy and Energy Efficiency ........................................... 44
   1.4.1. Legislative Base on Renewable Energy and Energy Efficiency in Georgia 44
   1.4.2. Net-Metering Implementation Results ............................................... 46
2. Natural Gas Sector .............................................................................. 49
   2.1. Natural Gas Market ........................................................................... 49
   2.1.1. Regulatory frameworks ................................................................. 49
   2.1.2. Market structure and its participants ............................................... 50
   2.1.3. Functional, legal and ownership unbundling ...................................... 50
   2.1.4. Main characteristics of a market ..................................................... 51
   2.2. Licensing ......................................................................................... 57
   2.2.1. License applications and amendment in license registry ....................... 58
   2.2.2. Results of technical regulation ......................................................... 59
   2.3. Pricing and Tariff Regulation ............................................................. 60
   2.3.1. Legal and Methodological Basis ....................................................... 60
   2.3.2. Tariff Regulation and Current Tariffs of the Sector .............................. 61
   2.3.3. Comparative analysis of tariffs ......................................................... 64
   2.3.4. Analysis of Investment Project Implementation .................................... 64
3. Water Supply Sector .......................................................................... 69
   3.1. Regulatory Framework ....................................................................... 69
   3.2. General Overview of the Sector .......................................................... 69
   3.2.1. Licensing ...................................................................................... 70
   3.2.2. Service Coverage Area of the Licensees .......................................... 70
   3.2.3. Continuity of Water Supply and Metering ........................................ 70
   3.2.4. Proper Functioning of Water Supply Systems and Reliability ............... 71
   3.3. Drinking Water Availability Index ..................................................... 73
   3.4. Pricing and Tariff Regulation ............................................................. 73
   3.4.1. Legal and Methodological Basis ....................................................... 73
   3.4.2. Tariff Regulation and Current Tariffs of the Sector .............................. 74
   3.4.3. Comparative analysis of tariffs ......................................................... 74
   3.4.4. Analysis of Investment Project Implementation .................................... 74
4. Methodological Activities ................................................................. 79
   4.1. Development of Regulation ............................................................... 79
   4.2. Mystery Shopper Project ................................................................. 80
   4.3. Explanations of the Commission and Cooperation with other Public Authorities .......................................................... 81
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Dear Reader,

It is my pleasure to have an opportunity to present a report on the activities of the Georgian National Energy and Water Supply Regulatory Commission (hereinafter, the Commission) of 2017. 2017 has been an anniversary year for the Commission. It has been already 20 years that the Commission impartially and independently exercises its regulatory functions.

2017 has been distinguished by a number of challenges having international importance. Specifically, I would like to point out membership to the Energy Community. This fact imposes obligation of approximating regulatory acts of the sector with the respective legislation of the EU and is an important precondition for moving towards European energy model.

In 2017 the Commission has achieved one more success – the Commissioner, Giorgi Pangani has been elected as a president of the Energy Community Regulatory Board (ECRB). Within the same year the Commission became an observer of the Council of European Energy Regulators (CEER) that will enable the Commission to perform its activities in accordance with the European standards. Apart from the above-mentioned, the Commission has become one of the founders of the Network of European Water Regulators (WAREG).

One of the main results of the reforms undertaken in 2016–2017 by the Commission is the fact that in the World Bank “Doing Business 2018 Report” Georgia has advanced by 9 positions and is on 30th position instead of 39th.

The Commission constantly seeks to improve the legislation regulating Georgian energy sector, envisage international best practices, cooperate with the foreign energy and water supply regulatory authorities, international organizations and strengthen its capacities.

In 2017 important international projects have been carried out at the Commission. Specifically, I would like to emphasize the EU Twinning Project on “Strengthening the Capacities of Georgian National Energy and Water Supply Regulatory Commission in Market Monitoring and Regulatory Cost Audit”. The Commission has gained meaningful experience through this project.

I believe that we will be able to apply the acquired knowledge and experience in a proper manner that will be reflected in the development of better regulatory standards and efficient regulation of the energy and water supply sectors.

Hereby, let me present the report on activities of 2017. Hopefully, you will be able to receive interesting and comprehensive information. I expect 2018 to offer a number of important challenges and hope to address them successfully.

Sincerely,

Irina Milorava
Chair
In 2017 following events and trends have been identified in the Energy and Water Supply Sectors:

**Electricity**

- Internal consumption of the electricity has increased by 7.7% in comparison to the previous year and by 14.4% - in comparison to 2015.
- Based on the data of 2007-2017, the internal consumption of the electricity in Georgia is annually increasing by 4.4% on average;
- Electricity generation (bus bar delivery) has decreased by 0.4% in comparison to 2016 although it has increased by 6.8% in comparison to 2015;
- Based on the data of 2007-2017, generation (bus bar delivery) of the electricity in Georgia is annually increasing by 3.5% on average;
- The electricity consumed by the electricity distribution companies has been increased by 7.1% in comparison to previous year, and by 14.7% in comparison to 2015;
- Electricity consumed by direct customers has been increased by 17.8% in comparison to previous year and by 16.8% in comparison to 2015;
- Electricity delivered to Abkhazia has increased by 3.9% in comparison to the previous year and by 11.4% - in comparison to 2015;
- Electricity import in 2017 has tripled in comparison to previous year and has doubled in comparison to 2015. During the reporting year electricity import has exceeded electricity export by 2.2 times;
- Electricity export exceeds indicators of the previous year by 22.7% and indicators of 2015 - by 3.9%.
- Throughout the reporting year transit of 253.99 mln kW.h electricity took place from Azerbaijan to Turkey, whereas 6.67 mln kW.h has been transited from Russia to Turkey and 42.24 mln kWh – from Russia to Armenia;
- In 2017 actual losses of the electricity have constituted 7.05%, out of which 1.97% is the transmission network losses, 3% less compared to previous year and 5.09% is the distribution network losses, which is 5.55% more compared to previous year;
- Total installed capacity of the electricity has constituted 4,112.27 MW (Hydro - 3,165.17 MW, Thermal - 926.4 MW, Wind – 20.7 MW), that exceeds indicators of the previous year by 6.3%;
- Electricity distribution (supply) market is highly concentrated \( \text{HHI}_{2017} = 5,106.77 \), where market share of Energo-Pro Georgia JSC constitutes 62.34%, Telasi JSC – 34.82% and “Kakheti Energy Distribution” – 2.84%;
- Market shares for the tree largest power producers has been distributed in the following manner. Enguri HPP LLC – 31.52%, Vartsikhe HPP LLC – 9.93% and Gardabani TPP LLC – 7.28%. Herfindahl-Hirschman Index for the electricity generation-segment has reached \( \text{HHI}_{2017} = 1,512.2 \);
- Energo-Pro Georgia JSC has been divided into two regulated companies – Energo-Pro Georgia JSC (electricity distribution activity) and Energo-Pro Georgia Generation JSC (Electricity Generation activity);
- Energo-Pro Georgia JSC has purchased assets of Kakheti Energy Distribution JSC. The Commission has revoked the distribution license of the Kakheti Energy Distribution JSC and modified electricity distribution license of Energo-Pro Georgia JSC. Currently Energo-Pro Georgia provides services to 64.6% of the electricity retail customers in the country;
- During the reporting period the Commission has reviewed and after lengthy consultations consented to the five-year network development plans of Telasi JSC and Energo-Pro Georgia JSC for the first time. The abovementioned has been carried out by the Commission in accordance with the requirements of the Network Rules.
- Electricity generation licenses have been issued to Energo-Pro Georgia Generation JSC, Adjar Energy 2007 LLC (Khelvachauri HPP 1) and Adjaristskali Georgia LLC (Shuakhevi HPP).
- During the reporting year electricity generation facilities with 233.75MW installed capacity (including 3 small power plants) have been put into operation;
- During reporting year net-metering regulation applied to 28 micro-generation power plants with installed capacity of 0.2783MW;
• Amendments have been introduced to the Resolution № 14 of July 30, 2014 of the Georgian National Energy and Water Supply Regulatory Commission “On Approving Electricity Tariff Calculation Methodologies” based on which tariffs for electricity generation and transmission licensees are set for 3-year regulatory period;

• Amendments have been introduced to the Resolution № 15 of July 30, 2014 of the Georgian National Energy and Water Supply Regulatory Commission on “Approving Rules for Calculating Electricity Normative Losses” based on which the Commission has approved the Resolution № 34 of July 30, 2014 on “Electricity Normative Losses in Electricity Networks of the Georgian Energy System”. Those normative losses have been reflected into the 3-year tariffs of the companies set for 2018-2020;

• Conclusions and recommendations have been prepared on 10-year transmission network development plans of 2018-2028;

• The Commission has analysed and given its consent to the investment plans for 2018-2020 of Telasi JSC and Energo-Pro Georgia JSC that have been approved on the basis of the Commission’s decision;

• Consumption tariffs for customers of the electricity distribution companies – Telasi JSC and Energo-Pro Georgia JSC for 2018-2020 have been approved;

• Electricity generation tariffs for 10 licensees, electricity transmission tariffs for 3 licensees and electricity distribution, wheeling and consumption tariffs for 2 Licensees have been approved; Hereby, guaranteed capacity fees of 4 guaranteed capacity sources and electricity generation tariffs have been approved;

• During 2017 three electricity generation licensees have been issued and one electricity distribution license has been revoked;

• According to the World Bank Report Doing Business 2018 Georgia has advanced by 9 positions due to electricity getting index and is on 30th place.

Natural Gas

• In 2017 demand of Georgia on Natural Gas has increased by 3.6% in comparison to the previous year. The reason for it is mainly based on the increased demand in the household sector;

• 101,527 new customers have been connected to the natural gas distribution network in 2017. Total number of customers by the end of 2017 has constituted 1,157,127;

• In 2017 for the purpose of meeting demand of Georgia natural gas has been supplied (imported) by 3 suppliers. At this trading level Herfindahl-Hirschman Index of natural gas suppliers is 4,730 that indicates that the market is highly concentrated;

• At the wholesale level natural gas has been sold by 9 suppliers whose share on the market is 58%;

• In 2017 natural gas consumed by one household customer has constituted 827 cubic meters. This indicator exceeds indicators of 2016 by 0.12%;

• During winter period 95% of the natural gas consumed for household purposes is consumed by those customers (55% of the total customers) that are using gas fired heating systems;

• Amount of natural gas consumed by household customers varies according to the regions. In average, a single household customer consumes most of gas in Tbilisi, Samtskhe-Javakheti and Mtskheta Mtianeti;

• 123 populated areas have been added to the list of gasified areas, where the population can benefit with 400 GEL package of connection to the network. Respectively, by the end of 2017 usage of connection fee was possible already in 873 populated areas;

• One natural gas distribution license has been revoked in 2017 and amendments have been made to three distribution licenses;

• On the basis of new tariff setting methodology tariffs have been set for the first time for the gas transportation company and three largest distribution companies, KazTransGas JSC, Sakorggas JSC and Socar Georgia JSC.

• Daily peak load of the transportation system has been decreased by 3,6% and according to the data of 2017 it constituted 13,300 m3/day, from an hourly standpoint it has decreased by 0.3% and constituted 665 m3/hour;

• Calorific value of the natural gas in Georgia does not lag behind the same indicators of the European countries.
Water Supply

• Georgian National Energy and Water Supply Regulatory Commission has approved its Resolution №21 of August 20, 2017 on Approving Rules for Calculating Water Supply Tariffs that envisages implementation of three-year regulatory periods in water supply sector considering incentive-based principles;

• The Commission has consented to the investment plans of 2017-2020 of Georgian Water and Power LLC, Rustavi Water LLC and Mtskheta Water LLC submitted for the tariff setting purposes. Those investment plans aim at improving existing infrastructure and constructing new ones. This will significantly increase technical quality of service. The total amount of investments to be made by those companies has constituted 184,971,909.21 GEL;

• The Rules for Calculating Drinking Water Normative Losses have been approved under the Resolution №45 of December 26, 2017 of Georgian National Energy and Water Supply Regulatory Commission based on which amounts for drinking water losses have been defined for Georgian Water and Power LLC, Rustavi Water LLC and Mtskheta Water LLC;

• Amendments have been made to the Resolution №32 of November 26, 2008 on “Drinking Water Supply and Consumption Rules” by the Resolution №21 of July 21, 2017, according to which the whole set of provisions have been formulated anew. Specifically, terms, grounds and conditions of interrupting water supply due to non-payment have changed; new terms of providing response to the customers’ applications have been established; different templates of filling out bills and sending to the customers have been developed, etc.

• In comparison to previous year, the number of metered household subscribers has increased by 11.8%;

• A number of accidents per 1 km distribution network has been reduced approximately by 52.5%.

Others

• Memorandum of cooperation has been signed between the Commission and the Competition Agency of Georgia that aims at fostering efficient cooperation between the parties, seeking development of the competition in Georgia and maintaining and strengthening transparency of the competition policy;

• The project on “Providing Technical Assistance to the Georgian National Energy and Water Supply Regulatory Commission” funded by the European Bank for Reconstruction and Development (EBRD) has been finalized. Within the framework of the project recommendations have been developed on issues such as network losses, commercial quality standards, quality incentives, licensing of the transmission and distribution activities, investment appraisal etc.;

• EU funded Twinning project on “Strengthening Capacities of Georgian National Energy and Water Supply Regulatory Commission in Regulatory Cost audit and Market Monitoring” has been finalized;

• Project funded by Asian Development Bank (ADB) on “Strengthening Capacities of Georgian National Energy and Water Supply Regulatory Commission” has been finalized that encompassed issues related to tariff setting methodologies in water supply sector, development of technical standards for regulated companies and functional unbundling of the water supply companies;

• The Commission has hosted General Assembly, Chairman Session and Committee Meetings of the Energy Regulators Regional Association (ERRA) in Tbilisi;

• Network of European Water Service Regulators (WAREG) has been founded and Georgian National Energy and Water Supply Regulatory Commission (GNERC) is among its founding members;

• The Commission has hosted meetings of Network of European Water Service Regulators (WAREG) in Tbilisi;

• The Commission has been granted a status of observer at the Council of European Energy Regulators (CEER);

• New technical assistance project on developing natural gas transmission network has been launched at the Commission, which is organized by National Association of Regulatory Utility Commissioners (NARUC) and funded by the Unit-
ed States Agency for International Development (USAID);

- Memorandum of Cooperation has been signed between Georgian National Energy and Water Supply Regulatory Commission and Energy and Water Regulatory Commission of Bulgaria;

- At the Energy Community meeting held in Athens, Greece the Commissioner of Georgian National Energy and Water Supply Regulatory Commission, Mr. Giorgi Pangani has been elected as the president of Energy Community Regulatory Board (ECRB) for 2 years;

- During reporting year 99 administrative legal acts have been contested at the Court of first instance, including 98 individual administrative legal acts and one normative administrative legal act. Out of which 53 cases have been finalized:
  - 42 decisions have been made in favor of the Commission;
  - 6 complaints remained unconsidered on the basis of withdrawal of a complaint by the plaintiff;
  - 5 cases have been returned to the Commission for reconsideration.

5 decisions of the Court of first instance have been appealed at the Appellate Court.
1.1. Development of the Regulatory Frameworks

The regulatory framework of the electricity sector has been significantly renewed and improved during 2017 that fosters approximation of Georgia with the EU energy acquis and fulfillment of its obligations. Specifically, the following amendments have been made to the primary and secondary legislation:

1. On the basis of the amendments made to the Law of Georgia on Electricity and Natural Gas (hereinafter, the Law) an obligation has been imposed upon the Ministry of Economy and Sustainable Development of Georgia to prepare document on main directions of the state policy in the energy sector, ensure its implementation and adoption of relevant legislation. The Transmission System Operator has been obliged to purchase balance electricity to cover electricity (capacity) losses in the transmission network. For the purpose of opening and deregulating electricity market the one connected to 35 kV and higher voltage network has been defined as a direct customer of the electricity. The abovementioned amendments shall enter into force from May 1, 2018. Together with the deregulation of certain segment of customers the power plants with installed capacity up to 40 MW or higher have been also deregulated. This amendment has entered into force from January 1, 2018;

2. On the basis of the amendments made to the primary legal acts following changes took place in the Electricity (Capacity) Market Rules (hereinafter, the Market Rules): rule for reimbursing transmission services has changed and it will apply to the total electricity consumed (metered) at delivery points from January 1, 2018; the rule for settlement of the balance electricity purchased by the Electricity System Commercial System Operator from small power plants has become more specific and the tariff for the period from September 1 to May 1 has been defined according to the upper margin of those Hydro Power Plants (HPPs) for which the Commission has set the highest tariffs.

3. Several issues in the Electricity Network Rules (hereinafter, the Network Rules) have been clarified and improved: general metering requirements for wind power plants have been specified, also categories of generation objects according to voltage and frequency regulation, black start capacities and regulation limits have been defined; long-term and short-term interruption planning requirements and procedures of electricity system elements, additional/system service definitions and aims have been improved. With regards to the requirements related to the electricity distribution network development, the reasonable terms and conditions have been defined for the Distribution Licensees for preparation of electrical maps of the electricity distribution networks, settling metering and locating SCADA elements.

4. Electricity tariff setting methodology has been renewed and incentivizing mechanisms for tariff regulated companies have been added. The Commission will set tariffs for the generation (HPPs), dispatch, transmission and distribution licensees for 3-year regulatory period, whereas correction of tariffs within regulatory period will take place only in directly envisaged cases. The Commission will review 3-year investment plans of the electricity generation, dispatch, transmission and distribution licensees and will reflect only those plans in the tariffs which will be considered to be reasonable and justified; New weighted average cost of capital (WACC) has been defined and rate of return on regulatory asset base has been set in an amount of 16.40% instead of 13.54%. Depreciation/amortization norms of regulated companies' regulated assets have been newly formulated.

Considering abovementioned amendments to the Electricity Tariff Setting Methodology the Commission has set tariffs for the regulated companies for the period of 2018-2020. The methodology for calculating guaranteed capacity fee and service tariffs of the electricity generation by guaranteed capacity source and electricity market operator still envisages setting of tariffs on an annual basis.

5. Based on the amendments made to the Rules for Calculating Electricity Normative Losses definitions of electricity technical losses and own consumption, procedures for calculating and setting normative losses, also rules and procedures for submitting data concerning normative losses to the Commission have been specified.

6. Amendments to the Electricity (Capacity) Supply and Consumption Rules have significantly supplemented and developed various norms of the Resolution. Specifically, rules on reacting to the
electricity customer applications by the electricity distribution licensees and fees for connecting new customers to the distribution network provided in Annex №4 have been specified. Procedures of commencing electricity supply have simplified and right of the distribution licensee to inspect compliance of electrical installations of non-household customers with technical security norms have been defined.

For the purpose of increasing level of customer awareness, periods of interrupting/resuming electricity supply to customers due to non-payment of bills and provision of respective information have been significantly improved, including provision of information on scheduled and unscheduled outages, also contents and terms of the notifications provided to the customers. Contents of the information to be provided to the customers or applicants and the way of providing such information have been specified.

7. Amendments related to the control procedures and compensation amounts have been introduced to the Rules on Commercial Service Quality. Financial mechanisms for non-compliance with overall commercial quality standards envisaged under Annex №1 and compensation for non-compliance with guaranteed standards of commercial service quality envisaged under Annex №2 have been specified.

The abovementioned amendments and general development trend foster harmonization of the electricity sector structure and regulatory frameworks with the requirements of the third energy package. It also facilitates development of cross-border trade with neighboring countries, although it vaguely reflects those basic provisions that are necessary for electricity market liberalization and development of the competition.

1.1.2 The Current Structure of the Market and its Participants

The structure of the electricity market of Georgia has remained unchanged in 2017. The structure of the electricity market, reflecting amendments made to Georgian legislation in previous year is provided on Figure 1.1.

Electricity trade at wholesale level is mainly carried out on the basis of the direct contracts. Electricity sale will take place through generators, importers, whereas the electricity is purchased by the distribution licensees (in terms of supply), direct customers, exporters, electricity generators (in cases of plant losses) and the dispatch licensee (for the purpose of ensuring electricity (capacity) transit with the view to cover losses related to the purchase of the electricity). For the purpose of electricity trade at the

Figure 1.1. Current Structure of the Electricity Market
wholesale market registration with the Electricity System Commercial Operator as a qualified enterprise is necessary.

For the regulatory purposes electricity generators are classified as:

a) Regulatory power plants to which the Commission sets fixed tariffs;
b) partially deregulated power plants to which the Commission sets marginal (upper margin) tariffs;
c) Deregulated power plants constructed after August 1, 2008 and act on the market without any tariffs set by the Commission;
d) Guaranteed capacity sources (Thermal Power Plants) to whom the Commission sets guaranteed capacity fee and marginal tariffs (upper margin) of the electricity generation.

For the power plants with installed capacity exceeding 13 MW, the Commission issues electricity generation license, whereas power plants up to 13 MW (small power plants) are exempted from licensing procedures. The list of guaranteed capacity sources is defined by the Government of Georgia individually according to the time periods during which those guaranteed capacity sources can provide guaranteed capacity to the system and they are used for ensuring sustainable, secure and reliable functioning of the integrated electricity system of the country.

The electricity import and export activities are deregulated and do not require licensing. The price of the electricity export activities is free (without tariffs), whereas the price for the electricity import is set according to the marginal tariff formula set by the Commission.

In terms of purchase and selling electricity the Electricity System Commercial Operator (ESCO) is entitled to purchase and/or sell electricity through direct contracts or standard terms and conditions of the balance electricity direct contracts, for the purpose of meeting (balancing) qualified enterprises’ demand. At the same time ESCO organizes guaranteed capacity trading, registers companies as participants to the wholesale trade, makes amendments to the registration data and revokes registrations. The market operator possesses and exploits the Automated System of Commercial Metering (ASC) that encompasses unified base and gets metering data from Automated System of Electricity and Capacity Control and Metering (ASECCM) automatically. It is intended for receiving, checking, collecting, grouping and summing up data for the wholesale electricity trade.

Direct customers are consuming the electricity for own needs in accordance with the minimum amounts defined under the market rules. From January 1, 2017 the abovementioned amount is 1 kWh electricity. Respectively, from January 1, 2017 almost all customers are entitled to register at the wholesale market as a qualified enterprise and purchase electricity directly from generation units and importers on the basis of direct contracts. Electricity distribution licensees purchase electricity at wholesale market in order to cover retail consumption of the customers within their service areas.

Network and system services are carried out by the Transmission System Operator (TSO) and the Transmission and Distribution licensees. The TSO (the Dispatch Licensee) has signed contracts with the Transmission Licensees on conveying rights of operating and developing transmission network to it. The TSO manages system mainly through Supervisory Control and Data Acquisition System (SCADA) and at the same time uses upper level Automated System of Electricity and Capacity Control and Metering (upper level ASECCM).

The Distribution licensees carry out network services, including wheeling, through networks under their ownership or under the third person’s ownership. The distribution licensees provide network services to: retail customers that purchase electricity from small power plants on the basis of direct contracts, direct customers connected to the distribution network and so called distributed generation—power plants that are connected to the distribution network.

Electricity is sold by the distribution licensees at the electricity retail market on the basis of household tariffs set by the Commission. At the same time they ensure network and system service of retail customers. According to the current legislation sale of the electricity to the retail customers can be carried out by the small power plants, though their participation at the retail market is quite rare, as far as small power plants have possibility to sell generated electricity at wholesale market for the price higher than weighted average price of the household tariffs that does neither incentivize them, nor customers to trade on the basis of direct contracts.

Retail customers are categorized as household and non-household customers at the market. Since 2016 a type of retail customer possessing renewable energy micro-generating power plants (up to 100 MW) has been added to those categories.
1.1.3 Monitoring the Functional, Legal and Ownership Unbundling

Unbundling of activities in the electricity sector is one of the important issues as far as independence and impartiality of the network operator and third party access are important preconditions for ensuring competition at the market. It is also important for raising transparency level and ensuring non-discriminatory conditions.

Unbundling of activities is obligatory for both EU and Energy Community member countries. Rules and procedures of unbundling are provided in the Directive 2009/72/EC of the European Parliament and Council concerning common rules for the internal market in electricity (hereinafter – 2009/72/EC Directive). One of the fundamental requirements of the Directive 2009/72/EC is to unbundle activities (full unbundling, including ownership unbundling). Pursuant to the Directive 2009/72/EC electricity transmission system operator can be a person which possesses and operates the transmission network, is responsible for its long-term development and is fully unbundled from competitive (electricity generation and supply) activities.

In the electricity Sector the following three companies own transmission license: Georgian State Electrosystem JSC (GSE), SakRusEnergo JSC and Energo Trans LLC. GSE at the same time exercises functions of the Transmission System Operator, the owner of the dispatch license and the metering operator.

For the time being Ministry of Economy and Sustainable Development of Georgia possesses “Enguri HPP” LLC and “Vardnili HPP Cascade” LLC on the one hand and 50% share of “Sakrusenergo” on the other. “Georgian State Electrosystem” JSC which has the dispatch and transmission licensees, at the same time, is under the ownership of the Partnership Fund JSC. GSE also possesses 100% share of another transmission licensee—“EnergoTrans” LLC. “Partnership Fund” JSC owns 100% share of one of the biggest wholesale suppliers—“Electricity System Commercial Operator”.

“Partnership Fund” JSC also owns 49% of shares of “Gardabani Thermal Power Plant” LLC that started operation in 2015; owner of remaining 51% share is Georgian Oil and Gas Corporation JSC (GOGC). Partnership Fund is the 100% shareholder of GOGC. Shareholders of “Sakrusenergo” JSC are: State of Georgia represented by the Ministry of Economy and Sustainable Development of Georgia and “Federal Network Company” JSC – Russian integrated energy system (see Figure 1.2).

With regards to Telasi JSC, Silk Road Holding JSC (Russian company “Inter Rao”) is the owner of 75.108% of its share, whereas Partnership Fund JSC owns 24.5295%. Silk Road Holding JSC (Russian company Inter Rao) also owns HPPs – Khrami -1 JSC and Khrami-2 JSC. In 2017 network activities of Telasi JSC and Energo-Pro Georgia JSC are completely unbundled (legally) from the electricity generation activities, although distribution activities are not unbundled from supply activities as far as no respective legal requirements exist at this stage.

1.1.4. Main Characteristics of the Market

Main characteristics of Georgian electricity sector (supply and consumption indicators) in 2017 are provided on Figure 1.3. There are certain important aspects to be emphasized in the electricity balance during the reporting year:

- Generation of wind power plant (bus bar delivery) has reached 87.69 mln kWh;
- Transit of 253.33 mln kWh has been carried out;
Electricity import in 2017 has tripled in comparison to the same indicators of the previous year;

Consumption in Abkhazia is still growing. In 2017 it has been 2,001.8 mln kWh that constitutes 15.3% of the total consumption and 16.9% of the electricity supplied to the customers. Consumption of Abkhazia is covered with the electricity generated by Enguri HPP and Vardnili HPP Cascade that means that these resources for the rest of Georgia are decreasing.

Electricity generation (bus bar delivery) has been slightly (by 0.4%) decreased in comparison to the previous year, while, it has been increased by 6.8% in comparison to 2015. Reduction of generation in comparison to the previous year has been caused by stopping Enguri HPP for 2 weeks and also by less

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Figure 1.2. Unbundling of Activities, Status of Ownership in the Electricity Sector of Georgia

* 24.529% of Partnership Fund JSC and 0.363% of shares of Telasi JSC shareholders is envisaged.

Figure 1.3. Electricity Balance

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1 Amounts on the figure are provided in mln kWh, whereas electricity consumption of direct consumer envisages own consumption of the power plants in a standing mode.
water inflow. Despite the abovementioned, electrici-
ty generation annually increases by 3.5% in average 
according to the data of 2007-2017. Such increase is 
an outcome of the electricity generated by the pow-
er plants which has been put into operation during 
those years.

On the contrary to the electricity generation de-
crease a significant increase in the electricity con-
sumption has been observed. In 2017 the electricity 
consumption has increased by 7.7% in comparison to 
previous year, whereas in comparison to 2015 it has 
been increased by 14.4%. The electricity consump-
tion in Georgia during 2007-2017 has been increasing 
by 4.4% in average (see Figure 1.4).

In the electricity generation structure increase of the 
electricity shares generated (delivered on a bus bar) 
by thermal and hydro power plants is more or less 
stable. Electricity generated by the thermal power 
plants in 2016-2017 has constituted 18.8% of the to-
tal generated electricity. The share of the electricity 
generated by HPPs in the total generation has been 
80.4%, whereas in 2016 it has been 81.1%. The share 
of the electricity generated by the wind power plant 
being put into the operation by the end of 2016 has 
been 0.8% (see Figure 1.5). Notably, two medium 
capacity Hydro Power Plants – Shuakhevi HPP (in-
stalled capacity 178.72 MW) and Khelvachauri HPP 
(with 47.48 MW installed capacity) and 3 small pow-
er plant – Ghoresha HPP (with 0.125 MW installed 
capacity), Kintrisha HPP (with 5.5 MW installed ca-
pacity) and Nabeghlavi HPP (with 1.9 MW installed 
capacity) have been put into operation during report-
ing year. Shares of the electricity generated (deliv-
ered on a bus bar) by HPPs according to the regulato-
ry regimes is provided on Figure 1.6.

Figure 1.4. Electricity generation (bus bar delivery) and consumption

Figure 1.5. Structure of the electricity delivered on a bus bar by the power plants
In 2017 the share of the electricity generated by regulatory power plants in the total generation of HPPs has been 46.5%, the share of partly deregulated HPPs has been 37.9%, whereas the share of deregulated HPPs has been 15.6% out of which 58.6% is the share of the electricity generated (delivered on a bus bar) by power plants up to 13 MW installed capacity, whereas the share of small power plants has been 41.6%. In 2017 the electricity distribution companies are still represented by important share (71%) in the electricity supplied to the customers. The share of the direct customers has been 12%, whereas the share of the electricity supplied to Abkhazia has been 16.9%. The electricity consumed by the electricity distribution companies has been increased by 7.1% in comparison to the previous year and by -14.7% in comparison to 2015. The electricity consumed by the direct customers has increased by 17.8% in comparison to the previous year and by 16.8% in comparison to 2015. Amount of the electricity supplied to Abkhazia has increased by 3.9% in comparison to previous year and by 11.4% in comparison to 2015 (see Figure 1.7).

In 2017 the electricity import exceeded exports by 2.2 times (see Figure 1.8). In 2017 the electricity import has been 1,497.2 mln kWh that exceeds indicators of the previous year by three times and indicators of 2015 by two times. With regards to exports, 685.7 mln kWh electricity has been exported from Georgia that exceeds indicators of the previous year by 22.7%. The dramatic increase of imports has been caused by the decreased water inflow and stopping of Enguri HPP for two weeks. Besides, for the purpose of meeting internal consumption and filling the deficit that has resulted from decreased hydro generation, thermal generation was substituted by import on the basis of its competitive price.

The electricity import and export according to countries is provided on Figure 1.9 and 1.10. 61% of the electricity import has been carried out from Azerbaijan, 30% - from Russia and 9% - from Armenia. In 2017 import from Turkey has not taken place, whereas the important part (42%) of the export has been carried out to Turkey, 38% - to Russia and 20% - to Armenia. Insignificant amount of imports has taken place towards Azerbaijan (1.72 mln kWh). Notably, significant share of import has been carried out from Russia during recent years (77%-in 2016 and 73%-in 2015), whereas from Azerbaijan it has been about 17-22% of the total import. With regards to the electricity export during reporting year and recent years, most of it has been carried out to Turkey. Although, share...
of export to Turkey in 2017 has slightly decreased in comparison to recent years, however exports to Russia has increased.

The main features of the energy security in the electricity sector is uninterruptible supply. It can be ensured through meeting electricity demand by maximum utilization of own resources. This will enable substitution of import in a short-term perspective and thermal generation in a long-term perspective. The dynamics of the electricity generation and consumption per month is provided on Figure 1.11. As it can be observed from the Figure, hydro and thermal generation capacities are not enough to meet the demand in autumn and winter periods. Respectively, electricity import becomes necessary for the purpose of satisfying the demand. On the other hand, abundant water resources in second half of spring period and summer makes it possible to meet the electricity demand and export the rest of the electricity.

The Figure 1.11 reflects that electricity the supply and

![Figure 1.8. Electricity import and export](image_url)

![Figure 1.9. Import of the electricity by countries](image_url)

![Figure 1.10. Electricity export by countries](image_url)

![Figure 1.11. Electricity generation and consumption per months](image_url)
consumption in Georgia is seasonal. The electricity consumption in winter periods is higher than in summer periods, whereas electricity supply has counter-seasonal character. Respectively, in terms of consuming electricity the peak demand in Georgia is in winter. Although, the situation provided on Figure 1.12 shall presumably change and the peak demand in Georgia will be shifted to summer.

Taking the abovementioned into consideration reduction of the electricity import share will be possible in the nearest future, based on the fact that the electricity peak demand will move to summer when it can be satisfied through local resources. On the other hand, launching new generation units in the energy system of the country will decrease the share of the electricity being imported for the purpose of meeting electricity demand in winter periods.

On the basis of analyzing results of the electricity supply and consumption balance in 2017 one can state that important attention shall be paid to the construction of new generation units through utilizing local energy resources. Respectively, hydrocarbon resources and renewable resources shall be utilized together with hydro resources to a maximum extent, including wind and solar energy resources.

Notably, total generation capacity of Georgia has been increased by 6.3% in comparison to 2016 and has reached 4,112.59 MW (installed capacity of small power plants has increased by 4.9% in comparison to the previous year, whereas, installed capacity of large and medium HPPs – by 8.6%). The generation capacities according to power plant types are provided on Figure 1.13.

Figure 1.12. Consumption in summer and winter periods

Figure 1.13. Structure of the generation capacities

1 For forecasting consumption of Georgia in summer and winter periods Compound Annual Growth Rate – CAGR is applied, that is 3.2% in winter and 4.5 in summer on the basis of the data of 2006-2017. For these purposes summer period is from April to September and winter period from October to March.
1.1.4.1 The Retail Market

The Electricity retail market of Georgia is highly concentrated (HHI – 5,100.74), where Energo-Pro Georgia JSC owns the largest (62.34%) market share.

Herfindahl-Hirschman Index (HHI) is applied for assessing a competition level at the specific market that is calculated by summing the squares of market shares (5%) of the participants. HHI index may range from 0 to 10,000, where 0 denotes low concentration of the market (absolute competition) and 10 000 – absolute monopoly. Based on the definition provided by the European Commission, if HHI exceeds 1,000 the market is concentrated, whereas if the index value exceeds 2,000 the market is highly concentrated.

The Figure 1.14 provides an information on the amounts of electricity consumed by the electricity distribution licensees according to months in 2017. Figure clearly reflects that the highest consumption of Telasi JSC and Energo-Pro Georgia JSC has been observed in December – January and July-August. Hereby, consumption of Energo-Pro Georgia JSC has significantly increased as a result of adding Kakheti region to its service area. Such trend is a result of the electricity consumption seasonality in Georgia where increase of demand of the household customers on electricity in winter and summer periods plays an important role.

The consumption of the household customers in the area of Energo-Pro Georgia JSC has reached 28.7% of the total consumption, whereas non-household consumption has been – 71.3%. The consumption of non-household customers in the distribution area of Energo-Pro Georgia JSC has increased by 14.1% in comparison to 2016 and by - 20.6% in comparison to 2015. This has been caused by connecting new commercial units to the network. The amount of the electricity consumed by the household customers has increased by 4.9% in comparison to the previous year and by – 2.9% in comparison to 2015. Notably, the fact that Energo-Pro Georgia JSC acquired Kakheti Energy Distribution JSC affected growth of the total consumption of Energo-Pro Georgia JSC (see. Figure 1.15).

When speaking about the amount of the electricity distributed by Energo-Pro Georgia JSC to retail customers according to voltage levels, it is worth mentioning that almost half (46.7%) of total distributed electricity has been consumed by customers connected at 0.4 kV network, 34% - by customers connected at 110-35kV network, whereas 19.3% - by customers...
The consumption of Energo-Pro Georgia JSC according to voltage levels

In 2017 64.1% has been non-household and 35.9% has been household consumption of the total consumption of Telasi JSC. Amount of the electricity consumed by non-household customers has increased by 7.6% in comparison to the previous year and by – 38.4% in comparison to 2015 that is a result of launching large commercial unit. Household consumption of Telasi JSC has been increased by 1.9% in comparison to the previous year and by 0.7% - in comparison to 2015 (see Figure 1.17).
In addition, in the network of Telasi JSC the electricity distributed to the customers connected to 0.4 kV network has significant share (65.6%) in total amount of distributed electricity. The share of customers connected to 6-10 kV network has been 21.9%, whereas share of customers connected to 110-35 kV network has been 12.5%. Main determinants of totally distributed electricity according to voltage levels by Telasi JSC are new connections arranged in 2017. In 2017 81.6 MW new customer capacity has been connected to the network of Telasi JSC out of which 65.122 MW (79.8%) capacity has been connected to 0.4 kV network, whereas 16.47 MW (20.2%) – to 6-10 kV network. In 2017 no new connections have been carried out to 110-35 kV network.

### 1.1.4.2 The Wholesale Market

82 generators were registered throughout the reporting period, including 5 thermal\(^1\), 2 regulatory\(^2\), 15 partly deregulated\(^3\), 6 deregulated\(^4\) (hydro) and 54 small (deregulated) power plants.

The market shares for three largest electricity generators have been allocated in a following manner: 31.5% - Enguri HPP LLC; 9.9% - Gardabani Thermal Power Plant LLC and 7.3% - Vartsikhe HPP LLC. Herfindahl-Hirschman Index for those companies has been HHI\(_{2016}=1,512.2\)\(^5\). Respectively, generation segment can be assessed as a concentrated market. The same indicators of previous years are provided on Table 1.1.

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<td>31.04%</td>
<td>31%</td>
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<td>Vartsikhe HPP LLC</td>
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<td>8.6%</td>
<td>7.21</td>
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<td>9.9%</td>
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<tr>
<td>Gardabani Thermal Power Plant LLC</td>
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<td></td>
<td></td>
<td>9.8%</td>
<td>7.3%</td>
</tr>
<tr>
<td>HHI</td>
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<td>1,260</td>
<td>1,133.6</td>
<td>1,222.8</td>
<td>1,512.2</td>
</tr>
</tbody>
</table>

Table 1.1. Market shares of the three largest generators and HHI

![Figure 1.19. Electricity trade at the balance market and on the basis of direct contracts](image)

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1. Thermal power plants: Gardabani 9th energy unit, gas turbine, 3rd and 4th units of Tbilresi, Gardabani TPP, Tkibuli TPP.
2. Regulatory power plants: Enguri HPP, Vardnili HPP.
4. Deregulated (up to 13 MW installed capacity) power plants having electricity generation license: Larsi HPP, Dariali HPP, Khelvachauri HPP 1, Shuakhevi HPP, Kartli wind power plant.
5. While calculating HHI index for 2017 possession of different power plants by the companies is considered.
The electricity trade at the wholesale market is carried out on the basis of direct contracts and at the balance market operated by the Electricity System Commercial Operator (ESCO) in accordance with the standard terms and conditions of balance electricity purchase and sale agreements approved by the Commission.

In 2017 electricity sold through direct contracts has been 10,224.6 mln kWh, whereas the electricity sold at the balance market has been 2,588.3 mln kWh. Respectively, share of electricity trade through direct contracts has been 79.9% of the total electricity delivered on a bus bar, whereas the share of balance electricity has been 20.1%. The abovementioned characteristics are provided on Figure 1.19 by months.

The Figure 1.19 clearly shows that share of balance electricity in totally purchased and supplied electricity in winter period is significantly higher than in summer periods (May–July), where the balance of the electricity supply and consumption is carried out through direct contracts. The structure of the balance electricity suppliers at the wholesale market by months is provided on Figure 1.20.

The structure of the entities purchasing electricity on the basis of the direct contracts is provided on Figure 1.21.
The structure of the balance electricity purchased by the market operator by months is provided on Figure 1.22.

The imported electricity has significant share in the balance electricity purchased by the market operator in 2017. The electricity generated by HPPs is purchased by the market operator for balance market throughout the year. During the months of May and June electricity generated by HPPs almost fully satisfies the balance market.

Mainly, it is electricity distribution companies and direct customers who purchase the balance electricity from the market operator.

The Price of the balance electricity to be sold by the market operator is set on a monthly basis, according to the principle of weighted average of electricity price purchased from generators and importers of different categories. During the reporting year price of the balance electricity increased by 14.8% in average compared with the previous year. In the summer...
period such increase has been a result of increased share of the power plants having guaranteed purchase contracts in the balance electricity purchased by the market operator and in winter period it has been caused by an increase of import share. In reporting year the price of the balance electricity sold by deregulated power plants to the market operator has increased by 4% in average in comparison to 2016 and by 28% - in comparison to 2015.

Figure 1.24. The weighted average price of the balance electricity to be sold by the market operator

Figure 1.25. The price of the electricity sold by the deregulated power plants at the balance market
1.1.4.3 Cross-Border Trade

The electricity cross-border trade is regulated on the basis of the law and market rules. During reporting year 17 importers and 31 exporters were registered at the Georgian electricity market, although only 1 importer and 13 exporters have been active.

Capacity of the cross-border electricity transmission lines of Georgian electricity system with neighboring countries provides opportunity to satisfy local demand of the electricity and to export surplus electricity. By the end of 2017 total net cross-border capacity of Georgia has constituted 2,550 MW (see Figure 1.26). Hereby, it is planned to increase cross-border capacity of Georgia up to 4,500 MW by 2020 through implementation of new infrastructure projects that is twice as much as the same data in 2017.

The electricity import can be carried out within the limits of the respective months envisaged by the electricity (capacity) annual balance, whereas in the emergency situations import can be carried out without envisaging it in the electricity balance. If the electricity to be imported in a normal operational mode exceeds the capacity of the cross-border electricity transmission line and/or the amount defined in the electricity (capacity) balance the prevalence is given to the import of the electricity having the lowest price.

Similarly to the import the export can also be carried out within the limits of the respective months envisaged by the electricity (capacity) annual balance, whereas in emergency situations electricity export can be carried out without envisaging it in the electricity (capacity) balance. The electricity export

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Figure 1.26. Cross-border capacities of Georgia for 2017 and 2020 (MW)

Figure 1.27. Capacities distributed and to be distributed on Akhaltsikhe – Borchkha electricity transmission line

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1 ATC (Available Transmission Capacity) on Figure 1.27 is the available capacity of the transmission network, whereas AAC (Already Allocated Capacity) – is already allocated volume. ATC is calculated in a following manner: ATC = NTC - ALC, where NTC (Net Transfer Capacity) is the net transfer capacity of the transmission network.
takes place in accordance with the provisions of the Market Rules and Special Auction Rules for the Allocation/Reallocation of New Cross-Border Transit (Interconnection) Line Transmission Capacity and Internal Limiting Resource. The main instrument for defining exporters and amount of the electricity to be exported is determination of export- and transit- allowed capacities and distribution of new intersystem transit (flow) line capacity.

In accordance with established procedures Georgian State Electrosystem JSC and Turkish party agree on the Akhaltsikhe-Borchkha transmission line capacity volumes for each month of the upcoming year before August 1 of each year. Respectively, capacity reallocation of new transmission line with and without auction in 2017 was arranged in a following manner (see Figure 1.27).

It is notable that despite the allocated capacity, Akhaltsikhe-Borchkha transmission line is not loaded to the maximum extent and export of electricity is not carried out through that line. Capacity of the above-mentioned electricity transmission line throughout the year has been 700 MW per month except of May and June. Despite that significant difference exists between actual and possible capacities (see Figure 1.28).
1.2 Licensing

1.2.1 Licensing Applications and Amendments to the License Registry

According to the data of December 31, 2017 26 licensees have been operating at the Georgian electricity sector (see Annex N1), including:

- preliminary transmission license has been issued to Energo-Pro Georgia JSC

In 2017 the Commission prepared 6 decisions regarding licensing, specifically:

- Based on the Commission’s Decision N4/8 of January 20, 2017 the generation License №088 (Serie 11) has been issued to Energo-Pro Georgia Generation JSC (as a result of reorganization of Energo-Pro Georgia JSC, Energo-Pro Georgia Generation JSC has been separated from Energo-Pro Georgia JSC as a single legal person);
- Based on the Commission’s Decision N4/9 of January 20, 2017 the electricity generation License №075 (Serie 11) issued to the Energo-Pro Georgia JSC on the basis of the Commission’s Decision N9/2 of May 18, 2007 has been revoked;
- Based on the Commission’s decision N20/1 of March 20, 2017 the electricity generation license N089 (Serie 11) has been issued to Adjar Energy-2007 LLC for operating the Khelvachauri 1 HPP with 47.48 MW installed capacity located near Erge village in the Khelvachauri municipality.
- Based on the Commission’s decision №65/1 of August 21, 2017 amendments have been made to the electricity distribution license (№057, Serie 14) of the Energo-Pro Georgia JSC issued on the basis of the Commission’s decision №9/3 of May 18, 2007 and the technical data of the electricity distribution (Annex N1) and the licensing conditions (Annex N2) have been approved;
- Based on the Commission’s Decision №68/1 of September 11, 2017 the generation license №090 (Serie 11) has been issued to Adjaristskali Georgia LLC for the Shuakhevi HPP with 178.7 MW installed capacity located near Shuakhevi municipality.

1.2.2. The Results of the Technical Regulation of the Electricity Transmission and Distribution Networks

1.2.2.1 Ensuring the Compliance with the System Service Requirements

The aim of developing system services is to improve reliability and sustainability of Georgian energy system and the quality of electricity, to raise level of the energy independence in both short- and long-term perspectives, as well as to increase efficiency of the energy system, implement modern technologies, utilize existing potential of telecommunication for the purpose of exchange of information between power plants and ensure integration of renewable energy networks into the grid. For achieving the above-mentioned the Transmission System Operator is obliged to carry out all types of the system services. For the purpose of ensuring balance between the electricity demand and supply the Transmission System Operator is obliged to ensure respective level of reserves.

On the basis of the Network Rules approved by the Commission types of the system services and technical requirements for ensuring them have been defined, although it is notable that implementation of system service market and its financial-commercial and organizational side shall take place together with the development of the market. Next important stage of system service development will be separation of rights between the system operator, system participants and the market operator in terms of management, performance, metering and settlement.

2017 has been significant in terms of developing system services. For the purpose of ensuring types of system services and performance of technical parameter requirements the Commission has reviewed the issue of delaying the deadline of their fulfillment for certain period of time, considering the complexity of the technical work to be carried out and respective financial resources. Those issues are described in a sub-chapter of the Network Rules related to the performance. For these purposes the Commission has commissioned expert services to the Georgian Technical University. Subsequently, a conclusion on current condition of frequency and voltage automated regulation systems of Lajanuri HPP and Gumati HPP 2 owned by Energo-Pro Generation JSC and measures necessary for their rehabilitation was prepared. The
results of the expert opinion have been reflected in the Commission’s decision on delaying deadline for ensuring compliance of HPPs in the ownership of Energo-Pro Generation JSC with the requirements of the Network Rules. This information is provided in the Annex N11.

1.2.2.2. Regulation of the Development of the Transmission and the Distribution Network

The approval of a 10-Year Transmission Network Development Plan (as of a mandatory document) can be considered as a new stage of developing energy infrastructure and its regulatory norms that are harmonized with the technical norms of the transmission network of neighboring countries, also with the requirements of the third energy package and the Energy Community.

In 2017 the Transmission System Operator (Georgian State Electrosystem) submitted 10-year transmission network development plan of 2018-2028 to the Commission. The Commission gave high rating to the work undertaken in the process of developing the document both in terms of dimension and quality of analysis. The Commission submitted its comments and recommendations to the Ministry on the plan. Those comments and recommendations mainly concerned rules of determining long-term forecasting of the electricity demand, outdated analysis of the electricity sector development plans of the neighboring countries, extremely pessimistic conclusions regarding the issue of wind energy integration into the network, insufficient communication with the distribution licensees regarding the identification of feeding centers and their further development, issues of cost-benefit analysis and financial support of the projects.

In 2017 three-year network development plans of the transmission system operator and transmission licensees which have been prepared in accordance with 10-year transmission network development plan (2017-2027) have been submitted to the Commission in accordance with current legislation. The Commission on the basis of its decisions did not consent to the investments of Georgian State Electrivity System JSC (Decision N94/1, December 12, 2017) and SakRusEnergo JSC (Decision N94/2 of December 12, 2017) to be carried out in 2017-2019 as far as three-year network development plan was not compatible with ten-year network development plan of 2017-2027. The Commission decided that the three-year network development plan for 2017-2019 submitted by the Georgian State Electrosystem JSC was not appropriate in relation to the projects that were to be actually implemented. On the basis of its Decision the Commission did not consent to the investments to be carried out by SakRusEnergo JSC (Decision N94/2 of December 12, 2017), because according to planned scenario forecasts of the SakrusEnergo JSC probability of full and timely implementation of projects was quite low and the Company was not able to submit documents justifying that the part of the electricity transmission line under construction, which according to project was in the territory of Republic of Armenia, would definitely be implemented and finalized in agreed terms.

Despite the fact that the three-year investment plans of both companies for 2017-2019 were not approved by the Commission the explanation was given to them that they could still implement planned investments and their justification and reasonability would be assessed at the stage of discussing tariff applications pursuant to the Electricity Dispatch, Transmission, Distribution, Wheeling and Consumption Tariff Methodology approved by the Commission’s Decision № 14 of July 30, 2014.

Hereby, is also notable that the distribution licensees submitted 5-year distribution network development plans to the Commission in accordance with the requirements of the Network Rules. Correspondingly, the Commission consented to the 5-year distribution network development plan of Telasi JSC on the basis of the decision № 93/1 of December 8, 2017 and of Energo-Pro Georgia JSC on the basis of the Decision № 93/2 of December 8, 2017. Those plans are developed and drafted in accordance with the requirements of the Network Rules, also due consideration is given to the 10-Year Transmission Network Development Plan of Georgia, other strategic plans and feasibility of the electricity system functioning. The plans are based on the forecast dynamics of the distribution network loading and envisages respective measures for ensuring high quality and reliable electricity supply for the network users. Respectively, plans entail investment projects aiming at improving electricity supply through the networks of the electricity distribution licensees, security norms and reliability standards, also they envisage feasibility of those plans in 2018-2022. In the 5-year distribution network development plans the attention is paid to the rehabilitation of existing networks, environmental issues and the network digitalization.

The most important projects in the development plan of Energo-Pro Georgia JSC are as follows:
Most important projects in the development plan of Telasi JSC are as follows:

- Construction of new substations in Chughureti region;
- Rehabilitation and reconstruction of Saburtalo -1, Saburtalo – 3, Dighomi 1, Makhata and Bagebi substations;
- Full rehabilitation of central distribution points, also renewal of power transformers;
- Rehabilitation of the overhead and cable lines;
- Installation of reserve cables;
- Relocation of cables from basements.

1.2.2.3. Ensuring the Reliability of the Electricity Supply in the Distribution Network

The control of the reliable (uninterrupted) electricity supply is carried out in accordance with the Commission’s Resolution № 9 of June 4, 2009 on Approving Instructions of Monitoring Reliability Indicators of the Electricity Supplied to the Customers by the Electricity Distribution Licensees. (hereinafter, the Instructions). The abovementioned instructions set uniform requirements regarding issues such as registration of the information on the reliability of the electricity supply by the distribution licensee, submission of that information to the Commission and analysis and verification of the submitted data by the Commission. The monitoring of such information is also carried out through electronic journal in accordance with the Commercial Service Quality Rules approved by the Commission’s Resolution N13 of July 25, 2016.

Based on the international practices, the instructions envisage following indices for defining reliability (uninterruptability) of the electricity supply:

- System Average Interruption Duration Index per Customer – SAIDI minute/customer.
- System Average Interruption Frequency Index per customer – SAIFI interruption/customer.

Based on the Commission’s Resolution №16 of August 26, 2016 the companies are obliged to maintain annual indicators of the electricity reliability and to improve them in case of low indicators. The above-mentioned provision is at the same time reflected in the Commission’s Resolution №23 of September 18, 2008 on “Approving Rules of Activity Control and Licensing in the Electricity, Natural Gas and Water Supply Sectors”. This creates an integrated mechanism for the Commission to apply sanctions in case if the annual indicators of reliability are worsened. Table №1.2 provides data of the indicators of the reliability of the electricity supplied by the electricity distribution licensees to the customers for recent three years:

From the data submitted by the Companies it can be observed that the following indicators have been improved in 2017 in comparison to 2016:

- SAIDI of Telasi JSC has been improved by 42%, whereas SAIFI has improved by 27%;
- SAIDI of Energo-Pro Georgia JSC has been improved by 30% in the city, - by 51% in the borough and - by 50% in the village; SAIFI of Energo-Pro Georgia JSC has been improved by 23% in the city, - by 47% in the borough and - by 46% in the village;

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Table 1.2. SAIDI/SAIFI of the Distribution Licensees for 2015-2017
1.2.2.4. Ensuring Quality of the Electricity

The Network Rules approved by the Commission define electricity quality parameters and set permissible limits of those parameters for both transmission and distribution networks. The Chapter 2 of the Network Rules envisage the electricity quality parameters for the dispatch licensee, transmission licensee and the users connected to the transmission network. Those requirements also have impact on improvement of the electricity quality in the electricity system:

Following frequency parameters are set for the transmission network:

- Frequency limits (in a parallel and isolated modes);
- Voltage limits (in normal and emergency modes);
- Harmonic distortions;
- Voltage flicker and fluctuation;
- Voltage asymmetry;
- Capacity factor.

Maximum and minimum monthly quantities are provided on Figure 1.29. According to the data of Georgian State Electrosystem JSC frequency deviations have been maintained within the permissible limits throughout the year.
Maximum and minimum values (by months) in the transmission network in the 500KV and 220 KV voltage system are provided on Figures 1.30 and 1.31. Based on the data submitted by the Georgian State Electrosystem JSC voltage deviation at 500 KV network is maintained within permissible limits (±5%), though in the months of May and June those indicators are quite close to the minimum and maximum limits.

With regards to 220 KV network, in January, May, July and December slight deviation from the limits has been observed, whereas in other months the network has operated at a maximum limit.

Apart from the data received from the network companies, inspection of the electricity quality in the electricity system can be initiated by the Commission and/or on the basis of complaints submitted to the Commission. From May 4 to May 11 the electricity quality has been measured at Rustavi 220 substation owned by the Georgian State Electrosystem JSC (see Figures 1.32 and 1.33), as far as metallurgical industries are connected to those nodes that are the only source of distorting the quality. Respectively, the Commission issued a recommendation to inspect all those nodes and substations where similar types of companies are connected as far as compliance with the network rules is mandatory for every participant of the electricity network.

Electricity quality regulation and control is carried out also at the level of the distribution network. The Network Rules have defined electricity quality parameters for the electricity distribution licensee and all users connected to the distribution network. The electricity quality control in the distribution network plays an important role for ensuring customers’ service quality. For the purpose of controlling electricity quality in the distribution network various best practices exist. Permanent or temporary installation of specific recording devices in the distribution network

Figure 1.31. Voltage variation ranges at 220KV network

Figure 1.32. Frequency ranges at the node of Rustavi 220 substation
at randomly selected or mostly problematic nodes is widely recognized. In accordance with the network rules and on the basis of considering such practices the distribution licensees have been obliged to install recording devices at different levels of the distribution network. Those locations shall be agreed with the Commission within the framework of 5-year distribution network development plan. The abovementioned measures will improve the electricity quality control and existing situation in the distribution network.

1.2.3.5. Organization of Management and Metering Systems in the Transmission and Distribution Networks

The Articles 45, 92 and 104 of the Network Rules approved by the Commission regulate issues related to the development of SCADA, electronic maps and metering in accordance with modern requirements in the distribution network, although the abovementioned needs huge effort, time and financial resources. On the basis of amendments made to the Network Rules by the end of 2017 the Commission obliged the companies to submit plans (schedules) of SCADA, electronic maps and organizing metering (in order to bring them in compliance with the Network Rules). Plans shall be submitted by the beginning of 2018 and shall contain the information on the work to be carried out and amounts of the investments. If those plans (schedules) will be approved they shall be reflected in the 5-Year Distribution Network Development Plans and investment Plans.

1.2.3.6. Losses in the Transmission and Distribution Networks

For the purpose of further development of regulation on losses in the electricity transmission and distribution networks the Commission has taken important steps in 2017. Amendments have been made to the legislation and respective methodological approaches have changed. According to the amendments to the Law the dispatch licensee shall purchase the balance electricity for the purpose of covering losses in the transmission network from January 1, 2018. Considering restructuring and liberalization processes in the sector, the Rule for Calculating Electricity Normative Losses (the Resolution N15, 2014) has become more specific. Due to the fact that Energo-Pro Georgia JSC acquired Kakheti Energy Distribution JSC, principles of calculating normative losses in case of merging network assets of the distribution licensees have been reflected to the abovementioned rules.

Based on the Commission’s Resolution №34, 2017 total normative loss of the electricity in the transmission network (in the network of the transmission licensees) has been set in an amount of 2.06% of totally received electricity. Also, share of each licensee in the total normative losses has been provisionally defined, specifically: Georgian State Electrocystem JSC – 1.28%, SakRusEnergo JSC – 0.39% and Energo Trans LLC – 0.39%. The normative losses set in 2017 are valid from January 1, 2018 to January 1 of 2020 (tariff regulatory period of 2018-2020). It is worth mentioning that amount of normative losses before 2018 has been 4.41%.
Amount of the electricity losses in the electricity distribution networks has been defined for the distribution licensees under the abovementioned Decision for 2018-2020 tariff regulatory periods. Respectively, total normative loss of Energo-Pro Georgia JSC from January 1 to April 30, 2018 has been defined in an amount of 9% of the electricity received in its distribution network. Normative losses of Telasi JSC (the Resolution №34 of 2017) for the period from January 1 to April 30, 2018 has been defined in an amount of 5.27% of the total electricity received in its distribution network, whereas for the period from May 1 to December 31, 2018 and also during 2019-2020 it has been defined in an amount of 5.88%. Definition of different normative losses for the distribution licensees for 2018 has been caused by the amendments made to the Law. According to those amendments, customers connected to 35KV or higher voltage network will be obliged to enter the wholesale market from May 1, 2018. This will change indicators of the normative losses in respective distribution networks.

In reporting year actual total losses in the electricity transmission and distribution network has been 7.05% in relation to the total amount of electricity actually received in the network (1.97% in the Transmission Network, 5.09% in the Distribution Network). Those indicators are by 0.16% less than the same indicators of 2016 (specifically, transmission losses have decreased by 3%, whereas for distribution it has increased by 1.2%) and it is by 6.1% less than the average indicators of recent 5 years (2012-2016).

Figure 1.34 provides dynamic of transmission and distribution system losses for 2012-2017. It can be observed through the figure that amount of losses in the transmission network can be characterized by slight changes that is mainly caused by the system topology and significant changes of the system in extremely high voltage path. This has been reflected in the 10-year transmission network development plans and it aims at integration of renewable energies, further development of the transit function of...
the system, ensurance of system reliability and respective indicators of the electricity quality.

Figure 1.34 shows that transmission network losses are significantly decreasing during recent years. Those indicators of the companies are characterized by various Dynamics that provides possibility of analyzing the specifics of the distribution companies. Despite the fact that actual losses in the distribution network have slightly increased, in terms of expected improving of the electricity losses it is worth mentioning that the assets of Kakheti Energy Distribution JSC (which had worst indicators of the actual losses, for example, 19.66% in 2016) have been purchased by the Energo-Pro Georgia JSC.

It is notable that normative losses of Energo-Pro Georgia JSC before 2014 has been 14.61%, whereas in 2014-2016 it has been –7.5% and in 2017 – 8.26%, before May 1, 2018-9.0%, whereas from May 1, 2018 to December 31, 2020 – 9.9%. Growth of normatives in 2018-2020 has been caused by certain reasonable circumstances, for example by adding Kakheti region to the service area of Energo-Pro Georgia, increasing topology and loads of the network, also by changing the status of the company subscribers connected at 110-35 kV network to direct customers. Dynamic of actual losses in the networks of Energo-Pro Georgia JSC and Kakheti Energy Distribution JSC before and after merger is provided on Figure 1.35.

Actual dynamic of the electricity losses in the network of Telasi JSC for 2009-2017 is provided on Figure 1.36. In 2012-2017 actual losses in the company network were characterized by fluctuations with overall decrease trend, specifically, it increased in 2015 by 2.81% and decreased by 1.31% in 2016 that is not subject of an adjustment. Decrease of actual losses in relation to normative indicator was caused by connection of large customers to 110-35 kV network of the company.

1.3. Pricing and Tariff Regulation

1.3.1. Legal and Methodological Basis

The legal basis for the Commission to calculate electricity tariffs for the regulated companies operating in the electricity sector (hereinafter the company) is the law and tariff methodologies developed and approved by the Commission with the normative administrative act pursuant to this law.

According to the significant amendments introduced in the reporting year, electricity tariffs for electricity generation (hydrogeneration), dispatch, transmission and distribution are set for a 3-year regulatory period. Similarly to electricity distribution tariffs, the electricity transmission and distribution tariffs are already calculated by the incentive-regulation principles. In addition, the Commission agrees investment plans for electricity generation (hydrogeneration), dispatch, transmission and distribution, i.e. the investments of the regulatory period deemed as reasonable and justified by the Commission by taking them into consideration while tariff calculation.

The unified tariff was defined for electricity transmission licensee on the electricity transmission activity, unlike the setting the tariff by voltage levels (500 kV, 400 kV, and 220–110–35–10–6 kV).

Based on the analysis of the data on the main components (for 2016) of Weighted Average Cost of Capital (WACC), the new rate was defined for 2018-2020 regulatory period as 16.40% (pre-tax).

In the beginning of 2017 legal unbundling (reorganization) by licensed activities took place and new legal person Energo-Pro Georgia Generation JSC was separated from electricity generation part of Energo-Pro Georgia JSC. The Commission responded accordingly.
in terms of licensing and tariff regulation. The same tariffs applied to Energo-Pro Georgia Generation JSC as for HPPs of Energo-Pro Georgia JSC for the calendar year of 2017.

Apart from the above-mentioned changes, the amendments to primary legislation should be noted that caused significant changes in the calculation of network tariffs. In particular, pursuant to the amendments of Law of Georgia on Electricity and Natural Gas, the dispatch licensee shall purchase electricity for covering electricity system losses from May 1, 2018, i.e. its tariff calculation covers the cost of losses. According to the amendments of the Electricity (Capacity) Market Rules, approved by the Order of Minister of Energy, the reimbursement of electricity transmission services is defined for each kWh of consumed (metered) electricity on delivery points.

1.3.2 Tariff Regulation and Current Tariffs of the Sector

The year 2017 was another year of tariff calculation. For this purpose, the Commission set tariffs for a number of regulated companies in the electricity sector. The process included tariff setting for 2 electricity distribution licensees, 13 electricity generation licensees (9 HPP and 4 TPP), 3 transmission licensees and 1 dispatch licensee. In addition, it should be noted that the electricity transmission tariff was set for GES Sakrusenergo JSC and electricity generation tariff for Zhinvali HPP, which is under ownership of Georgian Water and Power LLC. Pursuant to the Resolution of the Commission №33, December 4, 2008, long-term marginal tariffs (upper limit) for electricity generation were set for Khrami HPP-1 JSC and Khra-
mi HPP-2 JSC. Also, similarly to the tariff regulation carried out in 2015 in relation to significant changes of currency exchange rate, the Commission provided the correction of electricity generation tariffs for guaranteed capacity source established for TPPs in the period of reporting year (with effective period for: 01.09.2017 – 31.12.2017).

1.3.3 Comparative analysis of tariffs

The Table 1.3 represents the electricity household tariffs in different countries by 2nd quarter of 2017.

As the data illustrates, only the countries with rich energy resources have tariffs lower than Georgia.

1.3.4 Analysis of Investment Project Implementation

In accordance with the tariff setting methodologies, during the tariff setting process the Commission reflects planned investments of the tariff calculation year and tariff regulatory period in the regulatory asset base of the company in accordance with investment plans submitted by the licensees, which shall be agreed in advance before tariff setting or correcting. Respectively, within tariff regulation frameworks the distribution licensees (except guaranteed capacity sources) periodically submit the information on the investments to the Commission.

In 2017 the Commission analyzed and made decision on the feasibility of company’s made/planned investments. Investment projects have been analyzed with regard to increasing reliability of supply, improving electricity quality indicators, reducing losses and fulfilling the requirements of the safe operating conditions.

Licensees are obliged to carry out detailed reporting regarding the actually fulfilled works regarding the investment projects agreed with the Commission, separately for each project. Besides, the companies are obliged to submit expert opinions on actually performed works in relation to the construction (installation) and rehabilitation investment projects indicated by the Commission. After the detailed review of submitted information and documents the Commission assesses the compliance of technical and economic indicators with the investment plans agreed in

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Figure 1.37. Electricity household tariffs by countries (2nd quarter of 2017, tetri/kwh)

Figure 1.38. Actual and Planned investments in electricity sector (1000 GEL)
advance and if necessary, adjusts tariffs set for the licensee.

After the investments implemented by each licensee of the electricity sector, the indicators of reliability and security of generation units and electricity networks and relevant electricity quality have to be improved.

In 2017 the investments actually carried out in electricity sector by generation, transmission and distribution licensees subject to tariff regulation constituted 328,719,753 GEL in total.

1.4. Renewable Energy and Energy Efficiency

For the purpose of efficient utilization of electricity resources of Georgia, increasing security of electricity and sustainability, also for fully satisfying electricity demand of the country one of main priorities for the development of the electricity sector is policy of water and other types of renewable energy utilization and, respectively, renewal of current legislative base and its approximation with EU energy acquis.

Georgia is rich of renewable energy sources out of which the water resources have the largest energy potential. According to the shares of water resources per capita Georgia is one of the leading countries throughout the world, however only 18-20% of the technical potential of the water resources is utilized. On the other hand, utilization of wind energy has special importance due to the seasonality potential, as far as water resources in winter months are quite low. According to the researches total assumed potential of wind resources in Georgia is 1,450 MW, whereas its average annual generation - 4,160 mln kwh. Solar and geothermal potential of Georgia is also quite important, although assessment of such presumable potential needs additional research.

1.4.1. Legislative Base on Renewable Energy and Energy Efficiency in Georgia

One of the important documents supporting renewable energy and energy efficiency is the Resolution
of Georgia of June 24, 2015 on Main Directions of the State Policy in the Energy Sector of Georgia and Law of Georgia on Electricity and Natural Gas.

Despite the abovementioned, legislative framework on renewable energies needs revision as far as there is no specific law on energy efficiency and renewable energies. The development of national action plan on renewable energy and energy efficiency is also necessary. The abovementioned is also one of the main conditions of the membership of Georgia to the Energy Community, specifically, Georgia shall harmonize internal energy legislation with Directive 2009/28/EC on the Promotion of the Use of Energy from Renewable Sources and Directive 2012/27/EC on the Energy Efficiency. Keeping overall energy statistics as well as keeping detailed statistics on renewable energy and energy efficiency is quite important and it represents one of the requirements of the Energy Community.

In addition, technical and economic assessment and study of renewable energy potential of the country shall be carried out in order to ensure its utilization more efficiently and on the basis of economic development principles. It is notable that Ministry of Energy of Georgia has initiated and donor organizations have supported project on drafting energy efficiency national action plan. Hereby, in 2017 working on the drafts of renewable energy and energy efficiency laws.

**Figure 1.40. Scheme illustrating net-metering**

**Figure 1.41 Subscriber - Energy Efficiency Center**
1.4.2. Net-Metering Implementation Results

Satisfying own consumption and development of micro-generating energy sources is supported through different incentivizing policies at an international level.

One of the traditional and widespread policies of developing micro-generating power plants owned by customers is net-metering that has gained its popularity in Georgia as well. By the end of reporting year 12 subscribers of Telasi JSC, with 142 kWh installed capacity and 16 subscribers of Energo-Pro Georgia JSC with 136.3 MW total installed capacity were applying net-metering.

Net-metering project enables customers to satisfy own energy demand, deliver excess energy to the network and make respective settlement. Figure 1.42 provides simplified illustration of retail customers using net-metering.

One of the recent subscribers who have joined net-metering project is Energy Efficiency Center (Union). A Figure 1.43 reflects benefits of the Center after being connected to the net-metering project. As it can be observed on a figure total benefit throughout 4 months has reached 102.73 GEL. It is notable that solar panels installed by the abovementioned subscriber have not operated in Spring-Summer periods yet while in that period expected generation will be much higher.

The Figure 1.44 reflects ecological benefits of the subscriber that equals to 274.98 kg of carbon dioxide emission in the air and is equivalent to saving 7 trees and carbon monoxide emission of the car after passing 1,833 km. Figure 1.45 reflects monthly generation of the power plant by days of the months, whereas Figure 1.46 reflects daily generation and consumption. That day 100% of the generated electricity was consumed by the subscriber.

![Figure 1.42. Generation of Energy Efficiency Center in June according to days](image)
Natural Gas Sector
2. Natural Gas Sector

Natural gas remains one of the substantial energy sources of Georgia by means of which 31% of final energy consumption of Georgia is satisfied. In 2017 the demand for natural gas increased by 3.6% compared to the previous year, which mostly was caused by the increased demand at household sector. The information on natural gas market is given on the Figure 2.1. Increased demand of natural gas at household sector is a result of current gasification process. In the reporting year 101,527 new consumers were connected to the natural gas distribution network and the total number of the consumers comprised 1,157,127 by the end of 2017.

2.1. Natural Gas Market

Natural gas market of Georgia is a market of direct contracts. Both long-term and short-term contracts are concluded among suppliers, and also between suppliers and customers. In 2017 the affiliated companies of Socar dominated the market participating in both retail and wholesale markets. They supply the natural gas, both imported and purchased on the wholesale market, to the suppliers and the final customers.

2.1.1. Regulatory frameworks

In 2017 the natural gas regulatory framework was updated. In particular, the amendments were made to the primary and secondary legislation.

The Law of Georgia on Electricity and natural gas introduced the notion of Network Rules that is approved by the commission, and combines procedures, conditions and principles (except for the issues envisaged by the technical regulations approved by the Government of Georgia) for management and usage (including connection) of transportation system and distribution network and defines the relations between licensees and the persons using their services. The Commission shall ensure the approval of Natural Gas Network Rules by September 1, 2018.

\[\text{Amounts on the figure are provided in mln kWh, whereas electricity consumption of direct consumer envisages own consumption of the power plants in a standing mode.}\]

\[\text{For forecasting consumption of Georgia in summer and winter periods Compound Annual Growth Rate – CAGR is applied, that is 3.2% in winter and 4.5 in summer on the basis of the data of 2006-2017. For these purposes summer period is from April to September and winter period from October to March.}\]
The Commission adopted the Resolution №4, March 28, 2017, on approving Rules of calculation of Normative Losses in the Natural Gas Transportation System. The above-mentioned rule sets the principles and rules for calculation of norms for natural gas normative losses for the natural gas transportation licensee. Natural gas normative loss is the allowable amount of natural gas loss arising from transportation of natural gas through natural gas transportation system. The costs for compensation of natural gas normative loss incurred by the transportation licensee is reimbursed in accordance with the current legislation. According to the rule, the amount of natural gas normative loss is defined as the average (arithmetic mean) of actual losses of three previous years of transportation tariff calculation year.

Pursuant to the calculation of methodologies of normative losses approved by the Commission, the Commission Resolution №8, May 24, 2017, on approving Natural Gas Normative Losses in Natural Gas Transportation System and Distribution Network set the amounts of natural gas normative losses for those licensees of natural gas transportation and distribution for whom the tariffs were set in 2017.

As for the amendments to Natural Gas Supply and Consumption Rules made in 2017, it is noteworthy that the similar amendments were made to the supply and consumption rules applicable in electricity and water supply sectors. Accordingly, the information on the above-mentioned issues is highlighted in Chapter 4 of this Report.

2.1.2. Market structure and its participants

During 2017 no significant structural changes occurred at natural gas market (See Figure 2.2.). However, important changes will take place in accordance with the protocol concerning the accession of Georgia to the Treaty Establishing Energy Community. The following changes need to be distinguished:

- Establishment of competitive market, where household and non-household customers can buy natural gas from the suppliers they choose;
- Unbundling of transportation licensee and boosting its role;
- The fee for natural gas shall be accrued on the customer according to the consumed energy and not in cubic meters;
- The role of the Commission is increasing in terms of market monitoring enabling to fulfil its duty efficiently for functioning of competitive market.

2.1.3. Functional, legal and ownership unbundling

Two main suppliers delivering natural gas to the retail customers are Socar Georgia Gas LLC and KazTransGas Tbilisi LLC. Although natural gas distribution and supply activities are defined as separate activities, the distribution licensees are not prohibited to carry out a supply activity, and accordingly, licensees also represent natural gas suppliers in the relevant natural gas distribution area. The exception is Inter Gazi LLC, Gastrans Service LLC, Ambrolaurgazi JSC and Gazmsheni LLC. Despite the fact that they are distribution licensees they do not carry out the natural gas supply activity. Among distribution licensees only 3 of them are subject to obligatory unbundling according to the Directive 2009/73/EC of European Parliament (only KazTransGas Tbilisi LLC, Socar Georgia Gas LLC and SakOrgGaz JSC are providing natural gas distribution to more than 100,000 customers).

In the process of reviewing activity of natural gas supply to the third party’s distribution network, we should distinguish natural gas supply for household and non-household customers.

Among 26 distribution licensees, 21 of them at the same time are the only suppliers for the household customer connected to its distribution network. In case of 5 distribution licensees, only one supplier supplies the natural gas to the household customer.
connected to each distribution network in each area. In case of household customers, the decision of entering the area of licensee by the supplier is conditioned by financial, technical and other reasons and not by the competition at the market.

In case of big non-household customers, the suppliers are more willing to supply natural gas to the customers connected to the different distribution network leading to the existence of different suppliers in different distribution networks. As a result, more than one supplier supplies natural gas to the customers in the area of the 5 distribution licensees.

In addition, the legal status for natural gas transportation licensee (Georgian Gas Transportation Company LLC) is not defined pursuant to the Directive 2009/73/EC. At present, Georgian Gas Transportation Company LLC possesses natural gas transportation system of Georgia based on lease agreement. Except for natural gas transportation, it performs the activity of natural gas supply and is not independent in the activity (it is not functionally unbundled from the system owner. At the same time, one person participates in the management of both the licensee and the network owner). Based on above-mentioned certification requested by the Directive 2009/73/EC of Georgian Gas Transportation Company LLC can be carried out only after functional and managerial unbundling.

2.1.4. Main characteristics of a market

Proceed from the fact that natural gas distribution licensees are carrying out also the supply activities, issues related to the natural gas supply and pricing are discussed in this subchapter.

Suppliers on the wholesale market supply the natural gas to the retail suppliers while retail suppliers supply it to end-users. Companies participating in the wholesale market in some cases also provide retail supply. For the purposes of this chapter, the wholesale supplier is a supplier who supplies even a small part from sold amount of natural gas to another supplier. Natural gas balance is given on Figure 2.3.

2.1.4.1 Wholesale Market

The Republic of Azerbaijan still remains as the main supplier of natural gas for Georgia, from where the country received natural gas necessary to satisfy its needs. In 2017 Georgia is still the transit country of natural gas from Russia to Armenia. Accordingly, Georgia receives a fee for transit from Russia to Armenia. In addition, Georgia received natural gas from South Caucasus Pipeline (SCP) as a transit fee. Local extraction remains insignificant.

Figure 2.3. Natural Gas Balance

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According to the Directive 2009/73/EC, there are several unbundling options of the transportation system operator: Ownership Unbundling, as the major goal and two additional options, Independent System Operator and Independent Transmission Operator.
In the year of 2017, for satisfaction of demand of Georgia, 3 suppliers delivered (imported) natural gas to the country. Also, 3 suppliers (one of them is also the importer) delivered natural gas from local extraction to the market. For evaluating competition level on this stage of trade the Herfindahl-Hirschman index (HHI) is used. HHI is 4,730 among natural gas suppliers of Georgia that indicates the highly concentrated market. Such condition is particularly characteristic to the countries with the developing markets. However, compared to some of the Eastern European countries where HHI indicator reaches 10,000 the import market of natural gas of Georgia is not characterized with monopolistic structure. Information regarding received natural gas in Georgia in 2017 is given in Table 2.1.

In 2017, 9 suppliers provided trade of natural gas on the wholesale level, share of which amounts 58%.

### 2.1.4.2. Retail Market

Natural gas is consumed by retail customers (connected to the distribution network) and direct customers (connected to transportation system). About half of the total consumption of direct customers is composed by consumption of TPPs. The gas filling stations are among the largest consumers. They account for significant part of retail consumption. The share of natural gas consumed by the retail customers increased slightly in the total consumption in 2017 (see Figure 2.4), mainly conditioned by increased consumption of natural gas by household customers.

Similar to the previous years, natural gas consumption was characterized by strongly pronounced seasonality in 2017 year. The reason of seasonality is high consumption of natural gas in winter period by TPPs, household sector and small non-household customers (who consume natural gas mainly for heating purposes). The Figure 2.5 indicates monthly consumption of natural gas in Georgia in 2017 year. Similar to the previous year, during the winter period (October–March) 72% of total consumption is consumed.

Construction of natural gas storage entered into a more active phase in 2017, considering the current consumption structure, the market structure and the challenges for improving of energy security and creating competitive natural gas market. Construction of natural gas storage starts in the first half of 2018 and the finish is planned for 2021. According to preliminary data, the storage will be able to store about 300 mln m³ of natural gas. At this stage, the procedure

<table>
<thead>
<tr>
<th>Natural Gas Entry Point</th>
<th>Volume (Mln m³)</th>
<th>Share in total volume (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan</td>
<td>1 199.75</td>
<td>51.2%</td>
</tr>
<tr>
<td>Russia</td>
<td>134.59</td>
<td>5.7%</td>
</tr>
<tr>
<td>SCP</td>
<td>821.08</td>
<td>35.1%</td>
</tr>
<tr>
<td>SCP Optional and Additional</td>
<td>179.96</td>
<td>7.7%</td>
</tr>
<tr>
<td>Local extraction</td>
<td>7.82</td>
<td>0.3%</td>
</tr>
<tr>
<td>Total</td>
<td>2 343.20</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2.1. Natural gas sources

![Figure 2.4. Natural gas consumption by retail and direct customers (%)](image)

![Figure 2.5. Monthly consumption of natural gas in 2017 (mln m³)](image)
for procurement of environmental and social impact assessment consulting services for the underground natural gas storage facility is underway.

Similar to the previous years, the increase of natural gas consumption by retail customer remains as the main factor of increase on natural gas demand. As can be seen on the Figure 2.6 the household segment is the only one where natural gas consumption is constantly increasing. The reason of natural gas consumption increase in household sector is the new connections to the distribution network and the consumption increase of existing customers (see Figure 2.6). Despite the fact that the consumption increased in last years, there is no significant change in consumption structure. Slight change of consumption structure is caused by the increase of natural gas demand of household customers (see Figure 2.7).

In 2017 natural gas annual consumption per household customer was 827 m³. This indicator is 0.12% more than similar indicator of 2016. Natural gas consumption per customer has an upward trend (see Figure 2.8), the reasons of which are using of natural gas for heating purposes and installations of central heating systems. Natural gas consumption of household customers varies by regions. Figure 2.9 shows the average volume of natural gas consumption per household customer by regions. On average, the household customers of Tbilisi, Mtskheta-Mtianeti and Samtskhe-Javakheti regions consume the most amount of natural gas. In general, the amount of this indicator depends on the number of customers of the cities in the region. In general, the amount of this indicator depends on the number of urban customers of the region.

The constant increase of natural gas consumption by individual subscribers indicates the expanded role of natural gas consumption in the country. The average consumption of 2017 is calculated by average number of subscribers, and average consumption of 2014-2016 years is calculated by the number of the customers at the end of the year.
gas in household sector. Under the circumstances, when gathering of firewood is becoming more and more difficult and its price is increasing, natural gas appears the most available energy source in the context of wide-scale gasification of Georgian villages. Besides, change in natural gas consumption at household sector depends on the climate conditions, natural gas appliances used, their proper maintaining and etc.

Similar to previous years, 2017 year was characterized by high intensity of connections of new customers to the distribution network. In total 101,527 new customers were connected to the distribution network and among them 94,596 customers were household customers. As a result, the number of natural gas retail customers constituted 1,157,127 customers, 1,116,217 of which are household customers (see Figure 2.10a). The vast majority of new customers (95%) are subscribers of KazTransGas Tbilisi LLC, Socar Georgia Gas LLC and SakOrgGaz JSC.

Despite the fact that the majority of retail customers are located outside Tbilisi, the situation is opposite regarding natural gas consumption. As seen on Figures 2.10a and 2.10b, the household customers of the capital of Georgia consumed more natural gas than household customers outside Tbilisi.

Statistic survey on energy consumption in households conducted by National Statistics office in Georgia in 2017 enables to define the structure of energy consumption in households. According to the survey results 10.5% of households use gas fired individual central heating system. The above-mentioned indicator is much higher in the cities - 17.1%, and villages – about 1.6%. 88.3% of households use such individual means of heating such as the electric or gas heater, firewood stove, fireplace and etc., and 1.2% of households do not have heating at all. The information on consuming natural gas for different purposes is given on Figure 2.11.
The purpose of natural gas consumption defines its allocation according to the customers. The Figure 2.12 illustrates the number of household customers by different categories for 3 distribution licensees (KazTransGas Tbilisi LLC, SakOrgGaz JSC and Socar Georgia Gas LLC). As shown on the Figure, the customers significantly reduce the consumption of natural gas during summer months while in winter the consumption is sharply increased by the part of the customers using natural gas for heating purposes. The customers consuming natural gas for heating purposes are attributed to the first two categories (consumption of 80 m³ and more).

It is noteworthy that 95% of natural gas consumed for household purposes during winter months is consumed by the customers (up to 55% of total amount of customers) using gas fired heaters.

As mentioned above, in household and small non-household customer segment (where natural gas is mainly used for heating the building), consumption of natural gas is characterized by sharply
expressed seasonality. The difference between the consumption of natural gas in summer and winter is closely linked to climatic conditions. In Georgia maximum indicators of energy consumption in the winter period (lasting about 6 months from October including March) is conditioned by temperature drop, and in the transitional period the level of energy consumption is stable until air temperature increases. Any rise in temperature results in decrease of energy consumption.

For examining the relationship between natural gas consumption and atmospheric temperature, the statistical indicator of climate Degree Day has been used, which measures the difference between average ambient daily temperature and basic temperature. The basic temperature is the balance point of the building, i.e. minimum ambient temperature, when heating of the building is not necessary. If average daily temperature is lower than basic temperature, such day is considered as Heating Degree Day (HDD). HDD, as a measurement of severity and duration of cold weather, depends on the outside atmospheric temperature.

Figure 2.14 shows the relationship between natural gas daily consumption and average temperature. It is well illustrated that natural gas consumption when the temperature exceeds 15°C is stable and represents the basic temperature, which almost does not depend on the weather. In this case natural gas is consumed for cooking and water heating. When the temperature falls below 15°C the customers start...
consuming natural gas for heating, having strong effect on natural gas demand. Accordingly, 15°C is basic temperature when turning on heating is necessary. HDD is the indicator representing the amount of degrees by which the indicator of daily temperature (average, minimum and maximum) is lower than basic temperature. Figure 2.15 shows HDDs by years, characterized by the downward trend of HDDs. The year of 2016 is the exception. The warmest year according to HDDs was 2017.

HDD is also used to monitor the energy demand implying normalization of energy demand for space heating, so that normalized indicators could be comparable, such as comparison of consumption of December of 2016 and 2017 considering the severity of winter. For comparison of consumptions between previous and last years, the consumptions normalized by weather are used. By comparing the consumptions normalized by current consumption and weather, savings/surpluses can be calculated.

By investigating relationship between natural gas consumption and HDDs, it was revealed that decreasing temperature by 1 degree is resulted in increasing of natural gas consumption by 13%, except for the basic consumption. In addition, we can conclude that 86% of change in natural gas consumption is conditioned by temperature changes. As a result, space heating is the main component of the energy demand.

2.2. Licensing

Natural Gas Transportation System

According to the data of 2017 the total length of transportation system is 1967 km and encompasses 380 units of gas distribution station. The data regarding the transportation system is given on Figure 2.16.

The daily peak load of the transportation has been reduced by 3.6% and according to the data of 2017 amounted 13.300 m³/d, and hourly peak load has been reduced by 0.3% and equals 665 m³/h.

Compared to the last year, the natural gas losses in transportation system increased (See Figure 2.17).

Loss increase is mainly caused by changed metering practice at the South Caucasus Pipeline (natural gas of 15°C standard conditions was recalculated as the natural gas of 20°C standard conditions) rather than deterioration of technical condition of the network.

Although the preparation of a ten-year development plan of the natural gas transportation infrastructure is not envisaged by current legislation of Georgia, it is developed by GOGC, the owner of transportation system. The plan covers conceptual issues of infrastructure development.

Development perspectives of natural gas infrastructure located in Georgia are discussed in the plan developed in 2017 including analysis of its conditions and considering the results of hydraulic simulation for the years of 2018-2019. The document gives a brief description of the investment projects for the
construction or rehabilitation/reconstruction of gas mains and related equipment as part of the transit and countrywide gas supply infrastructure and their key technical-economic parameters. The document also discusses strategic projects (underground gas storage, cross-border interconnectors, connectors for circular transmission to regions, etc.) and other works.

Within the framework of the abovementioned plan in 2017, GOGC completed the construction of 18 km of Tsiteli Khidi-Gardabani, 700 mm gas main, 29 km of Telavi-Akhmeta, 200 mm gas main and Pipeline Bridge on the river Kuro.

In the scope of 2018-2027 plan, the implementation of short, medium and long-term investments projects are envisaged:

• Short-term plan includes the construction of the pipeline with length of 227 km in total, rehabilitation of the largest gas distribution station and arrangement of gas pipeline monitoring and management system (SCADA). Total amount of investments is 190.5 mln GEL.

• Medium-term plan covers the construction of a new pipeline with total investment cost – 36.1 mln GEL.

• Long-term plan envisages the construction of new pipeline with length of 70 km and in case of implementation AGRI (Azerbaijan Georgia Romania Interconnector) project, construction of additional pipeline with length of 370 km.

Natural Gas Distribution Network

By December 31, 2017, 26 distribution licensees operated in Georgia. Among them the following three companies are the largest ones: Socar Georgia Gas LLC, KazTransGas Tbilisi LLC and SakOrgGaz JSC. Three above-mentioned distribution licensees have distributed 90% share in total distributed natural gas (see Figure 2.18).

In 2017 the amount of losses in the natural gas distribution network was 62.6 mln m³. Compared to the previous year, the losses of natural gas is almost halved caused by the better organization of metering system of natural gas consumption by the natural gas distribution licensees. Similar to the previous years the biggest part of the losses (91%) occurred in the network of the above-mentioned 3 licensees.

2.2.1 License applications and amendment in license registry

The Commission issues the licensees in the natural gas sector, makes amendments and revokes them, also defines the license conditions and monitors their performance. Pursuant to the law of Georgia on Electricity and Natural Gas the Commission issues natural gas distribution and transportation licenses in the natural gas sector. The license is issued for a lifetime.

By December 31, 2017, 27 licensees operated in natural gas sector of Georgia, among them one is the transportation licensee and 26 are distribution licensees.

In 2017 the Commission reviewed 1 application concerning the issuance of natural gas distribution license. The Commission reviewed the application of the license seeker VIP Service LLC requesting the issuance of natural gas distribution license in Bakuriani in the frames of the distribution network owned by him. Since the existing consumers in Bakuriani had already been connected to the natural gas distribution network of the other natural gas distribution licensee, the Commission considered the abovementioned circumstances as the grounds for refusing to issue the license.

In 2017, 1 natural gas distribution license was revoked (TsalkaGas LLC). The basis for the revocation was conditioned by the loss of ownership/possession right to the distribution network on which the license for relevant activity was issued.

In 2017, 1 natural gas distribution license was revoked (TsalkaGas LLC). The basis for the revocation was conditioned by the loss of ownership/possession right to the distribution network on which the license for relevant activity was issued.

During the reporting period, 3 distribution licenses were modified. The area of operation of Socar Georgia Gas LLC and SakOrgGaz JSC was further expanded and the Borchalo+ LLC changed its name, legal address and director and the organization was registered as Gastrans Service LLC. Considering the above-men-
tioned by decision of the Commission N30/26, April 19, 2017, the license was issued to Gastrans Service LLC.

In 2017 based on the Decisions of the Commission № 8/23, February 8, 2017, № 35/63, May 5, 2017, № 72/23 September 22, 2017, and № 89/10, November 27, 2017, 132 settlements were added to the list of gasified settlements approved by Paragraph 1 of the Decision of the Commission № 43/1, November 3, 2014, on Approval of the List of Gasified Settlements and since the end of the reporting period the fees for connection to the natural gas distribution network applied to 873 populated areas. Complete list of gasified settlements can be found at the Commission’s website.

In 2017 aggregation of natural gas distribution licensees can be still detected. Accordingly, the number of licensees is decreasing. The Figure 2.19 shows the number of natural distribution licensees by years. It is expected that the aggregation process of distribution licensees will be maintained in the following years.

2.2.2 Results of technical regulation

The Commission carries out control of activity of regulated undertakings. In 2017 DVS LLC was imposed 5000 GEL fine for violating license conditions. The abovementioned undertaking accrued the fee for natural gas to the household customers which was higher than the upper limit of the consumer tariff set by the Commission. The distribution licensee was ordered to refund the extra accrued amount to the consumers.

In 2017 the Commission reviewed the dispute between Taba LLC and the customers concerning the issue of accruing the fee for changing the meter to the customers. The Commission gave the warning to the distribution licensee and set the deadline for correcting of the errors and returning groundlessly accrued amount to the consumers paid by them (if applicable).

The Commission established that Wissol Petroleum Georgia JSC carried out settlement with its customers through natural gas bill (receipt) which did not comply with the requirements set by the Commission. The Commission gave explanation to Wissol Petroleum Georgia JSC on the template of the receipt to be presented to the natural gas customers and the information to be indicated in it and set the deadline for correction of the errors.

In 2017 the Commission fined 3 suppliers which carried out the supply of natural gas without submitting the relevant reporting to the Commission. The amount of the fine in each case was 5,000 GEL.

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas imported from Azerbaijan</td>
<td>8,379</td>
<td>8,565</td>
<td>8,200</td>
</tr>
<tr>
<td>Gas received from South Caucasus Pipeline</td>
<td>8,364</td>
<td>8,407</td>
<td>8,000</td>
</tr>
<tr>
<td>Gas received as fee for transit in Armenia</td>
<td>8,112</td>
<td>8,777</td>
<td>7,900</td>
</tr>
</tbody>
</table>

Table 2.2. Minimum and maximum calorific value of natural gas delivered in Georgia (kcal/m³)
Natural gas is supplied through different sources in Georgia such as local production and import from neighboring country. Accordingly technical parameters of natural gas are different.

Pursuant to the current legislation, the quality of natural gas is defined by interstate standard GOST 5542-87 based on which the minimum allowed calorific value is 7600 kcal/m³ under standard conditions (20°C and 1 bar under pressure conditions). The minimum and maximum calorific values of natural gas imported in Georgia are given in the Table 2.2 and the actual average calorific value of imported natural gas by months in 2017 is shown on the Figure 2.22.

The Table 2.2 shows that the difference between minimum and maximum indicators of daily calorific values of natural gas received in transportation system of Georgia is 7%. The difference is minimalistic, if we examine the average monthly indicators on the Figure 2.20.

Metering of natural gas as well as measurement of its calorific value is carried out in different conditions in the European countries. Therefore comparison of the data published by natural gas transmission (transportation) system operators existing in Georgia and Europe will lead to incorrect results.

The data of calorific values of natural gas in Georgia and the European countries is highlighted in Table 2.3. As shown in the Table, the calorific value of natural gas in Georgia is almost similar to the indicators of the European countries.

### 2.3. Pricing and Tariff Regulation

#### 2.3.1. Legal and Methodological Basis

The legal basis for setting relevant tariffs for natural gas sector licensees by the Commission is the Law of Georgia on Electricity and Natural Gas and Natural Gas Tariff Setting Methodology approved by the Commission Resolution №33, December 25, 2014 in accordance with the Law requirements. While calculating natural gas supply, transportation, distribution, wheeling and consumption tariffs, the cost-plus regulation principles recognized by the international practice is used. By Resolution №9, May 30, 2017, the tariff methodology has been amended, which envisages a new calculation rule for natural gas supply.
tariff, and also reflection of interest cost of working capital in the regulatory cost base and other amendments. In addition, by the Commission Decision № 4/7, January 20, 2017, the tariff application form to be submitted by natural gas transportation licensee for calculation of natural gas transportation tariff has been approved.

2.3.2. Tariff Regulation and Current Tariffs of the Sector

The distribution and transportation of natural gas represent natural monopolies and this network activity is subject to tariff regulation by the Commission. As for the natural gas supply, the natural gas supply activity for specific customer categories was deregulated pursuant to the Decree №69 of the Minister of Energy of Georgia, September 25, 2007 on Deregulation and Partial Deregulation of Natural Gas Supply Activity. The above-mentioned Decree was amended by Decree №52, August 14, 2017, according to which “the scope of this Decree does not apply to natural gas supply for individual persons (population – household customer) by those natural gas suppliers, for whom GNREC has established consumption tariff of natural gas supply after July 1, 2017”.

In 2017 the Commission set the new natural gas transportation tariff for the Georgian Gas Transportation Company (GGTC) LLC pursuant to the new tariff methodology. In addition, natural gas supply, distribution, wheeling and consumption tariffs were set for the following natural gas transportation licensees: KazTransGas Tbilisi LLC, Socar Georgia Gas LLC, SakOrgGaz JSC and Arzu-Gaz LLC. Accordingly, after setting the tariffs by the Commission, the Decree on deregulation does not apply to the natural gas suppliers in the area of abovementioned distribution licensees.

2.3.2.1 Natural Gas Transportation Tariff

GGTC submitted tariff application and enclosed documents to the Commission by letters #1/05-448, February 28, 2017 and #1/05-617, March 17, 2017, requesting the establishment of natural gas transportation tariff. The natural gas transportation tariff, for changing of which the application was submitted, has been valid from 2001 year.

The main gas transportation pipelines of high pressure, the most part of which are under the ownership of Georgian Oil and Gas Corporation JSC are operated by the Georgian Gas Transportation Company LLC based on the lease agreement that carries out the natural gas transportation activity and natural gas transit from Russian Federation to Armenia. Based on the Law of Georgia on Electricity and Natural Gas, the natural gas transit activity is not regulated by the Commission. Therefore, the net book value of company’s balance assets, and accordingly, the regulatory asset base, were allocated on natural gas transportation and transit activities to reflect the costs related to natural gas transportation activity in natural gas transportation tariff. As a result, by the Resolution №12, July 17, 2017, the Commission amended the Resolution №30, December 39, 2005, on Natural Gas Tariffs and the new natural gas transportation tariff
was set for the Georgian Gas Transportation Company LLC as 1.884 Tetri/m3 without VAT for validity period from July 20, 2017 including December 31, 2018.

2.3.2.2. Natural Gas Distribution Tariffs

Based on the tariff applications of Socar Georgia Gas LLC, SakOrgGaz JSC, KazTransGas Tbilisi LLC and Arzu-Gaz LLC, the Commission calculated and set natural gas supply, distribution, wheeling and consumption tariffs in 2017.

Socar Georgia Gas LLC

Based on the Decree № 888 of President of Georgia of December 25, 2008 on Providing the Regions of Georgia with Natural Gas Supply and Measures to be taken to Attract the Investments in the Relevant Field, the real estate purchase agreement was concluded on December 26, 2008 between the Ministry of Economy and Sustainable Development of Georgia and Socar Georgia Gas LLC. In accordance with the agreement, the shares of natural gas distribution regional company were transferred to Socar Georgia Gas LLC with specific conditions. Pursuant to the amendments and addendum of December 8, 2014, Socar Georgia Gas LLC was imposed the obligation to invest 250,000,000 USD by the end of 2017 for the purpose of gasification of 250,000 potential customers. In addition, the part of investment costs in the amount of 150,000,000 USD shall be considered when calculating natural gas distribution tariff no earlier than 2020. Socar Georgia Gas LLC also carries out the natural gas supply activity.

41 individual tariffs were applicable in the different natural gas distribution area of Socar Georgia Gas LLC, based on the investments under the above-mentioned obligation and also procurement of natural gas distribution network from other small natural gas distribution companies and expansion of licensing areas by 2017.

On February 20 and 27, 2017, Socar Georgia Gas LLC submitted the tariff application to the Commission requesting the tariffs for natural gas supply, distribution, wheeling and consumption to be set on the basis of detailed audit of actual operational expenses and revenues of 2015 and also by considering the conditions of the real estate purchase agreement. The Commission defined the regulated cost base which was allocated to the supply and distribution activities pursuant to the regulation principles envisaged by the applicable tariff methodology and also by considering the fact that natural gas purchasing price for household customers according to natural gas procurement agreement amounted 105 USD per 1000 m3 without VAT, and the purchasing price for covering natural gas losses amounted 185 USD per 1000 m3 without VAT (the exchange rate of GEL to USD was considered as 1 USD=2.5GEL pursuant to exchange rate envisaged by the state budget of Georgia of 2017). The following tariffs were set for Socar Georgia Gas LLC by the Commission Resolution № 14, July 18, 2017 that is effective from July 20, 2017 including December 31, 2018: natural gas supply tariff - 26.750 Tetri/m3, distribution/wheeling tariff - 19.620 Tetri/m3 and consumption tariff - 48.254 Tetri/m3 without VAT.

SakOrgGaz JSC

Based on the Commission Decision № 34/2 of December 18, 2013, the natural gas distribution license was issued to SakOrgGaz JSC, which was founded after merging of the following former natural gas distribution licensees: Gorigazi JSC, BolnisiGazi JSC, Kutaisigazi JSC, SamtrediaGazi LLC, Borjomigazi LLC, Tetritskarogazi JSC, Rustavigazi JSC, Vanigazi LLC, Kaspigazi JSC and Terjola Natural Gas LLC. In addition, the natural gas distribution licenses were revoked for the above-mentioned companies and the tariffs of the above-mentioned distribution licensees were set for SakOrgGaz JSC, as for a legal successor, by the Commission Resolution № 2 of January 9, 2014, on Amending the Commission Resolution № 30 of December 30, 2005.

On February 20 and 27, 2017, SakOrgGaz JSC submitted the tariff application to the Commission requesting the tariffs for natural gas supply, distribution, wheeling and consumption to be set on the basis of detailed audit of actual operational expenses and revenues of 2015 and also by considering the conditions of the real estate purchase agreement. The Commission defined the regulated cost base which was allocated to the supply and distribution activities pursuant to the regulation principles envisaged by the applicable tariff methodology and also by considering the fact that natural gas purchasing price for household customers according to natural gas procurement agreement amounted 105 USD per 1000 m3 without VAT, and the purchasing price for covering natural gas losses amounted 185 USD per 1000 m3 without VAT (the exchange rate of GEL to USD was considered as 1 USD=2.5GEL pursuant to exchange rate envisaged by the state budget of Georgia of 2017). The following tariffs were set for SakOrgGaz JSC by the Commission Resolution № 15, July 18, 2017 that is effective from July 20, 2017 including Decem-
ber 31, 2018: natural gas supply tariff - 26.750 Tetri/m³, distribution/wheeling tariff - 19.680 Tetri/m³ and consumption tariff - 48.314 Tetri/m³ without VAT.

KazTransGas Tbilisi LLC

According to the purchase agreement concluded between bankruptcy commissioner of Tbilgazi JSC and KazTransGas Tbilisi LLC on May 18, 2006, the immovable and movable properties were transferred to KazTransGas Tbilisi LLC, based on which the Commission issued the natural gas distribution license to KazTransGas Tbilisi LLC by Commission Decision of June 1, 2006. The company also supplies retail customers with natural gas within its distribution area.

By the Commission Decision N3/1 of March 16, 2009, a special manager was appointed in KazTransGas Tbilisi LLC for ensuring stable natural gas supply to Tbilisi.

On February 23, 2017, KazTransGas Tbilisi LLC the submitted tariff application to the Commission requesting the tariffs for natural gas supply, distribution, wheeling and consumption to be set. The tariffs of KazTransGas Tbilisi LLC had been applicable since 2007. The Commission analyzed the reports/conclusions drafted by independent auditors for the period from 2006-2015. The detailed audit of actual operational expenses and revenues of 2015 was conducted and the regulated cost base was defined which was allocated to the supply and distribution activities pursuant to the regulation principles envisaged by the applicable tariff methodology and also by considering the fact that natural gas purchasing price for household customers according to the natural gas procurement agreement amounted 105 USD per 1000 m³ without VAT, and the purchasing price for covering natural gas losses amounted 185 USD per 1000 m³ without VAT (the exchange rate of GEL to USD was considered as 1 USD=2.5GEL pursuant to exchange rate envisaged by the state budget of Georgia of 2017). The following tariffs were set for KazTransGas Tbilisi LLC by the Commission Resolution №13, July 18, 2017 that is effective from July 20, 2017 including December 31, 2018: natural gas supply tariff - 26.750 Tetri/m³, distribution/wheeling tariff - 10.479 Tetri/m³ and consumption tariff - 39.113 Tetri/m³ without VAT.

Arzu-Gaz LLC

Based on the lease agreement concluded between Arzu-Gaz LLC and Gardabani Municipality, the gas pipeline of the village Vakhtangisi was leased to Arzu-Gaz LLC for the period of 10 years based on which the Commission issued natural gas distribution license on May 31, 2006, (Decision N14/3) and the tariffs were set by the Commission Resolution N6 of April 16, 2007. The company also supplies retail customers with natural gas within its distribution area.

Having won in the e-auction announced by Gardabani Municipality, the gas pipeline (11,619.77 m) of the village Vakhtangisi was leased to Arzu-Gaz for the period of 10 years. On May 4, 2017, the lease agreement with conditions was concluded, the annual lease fee of which amounts 16,357 GEL, instead of 200 GEL envisaged by the previous agreement.

On July 6, 2017, Arzu-Gaz LLC submitted tariff application (letter N12) to the Commission. On the basis of detailed audit of actual operational expenses and revenues of 2015, the Commission defined the regulated cost base which was allocated to the supply and distribution activities pursuant to the regulation principles envisaged by the applicable tariff methodology and also by considering the fact that natural

![Figure 2.21. Natural Gas Consumption Tariffs for household Customers (Tetri/m³)](image-url)
gas purchasing price for household customers according to natural gas procurement agreement amounted 105 USD per 1000 m³ without VAT, and the purchasing price for covering natural gas losses amounted 185 USD per 1000 m³ without VAT (the exchange rate 1 USD=2.5GEL). The following tariffs were set for Arzu-Gaz LLC by the Commission Resolution №29, October 31, 2017: natural gas supply tariff - 26.750 Tetri/m³, distribution/wheeling tariff - 18.330 Tetri/m³ and consumption tariff - 46.964 Tetri/m³ without VAT. The tariffs are valid from the date of its publication including December 31, 2018.

The final consumption tariffs set for the aforementioned licensees’ area are illustrated on Figure 2.21 by separate components.

2.3.3. Comparative analysis of tariffs

The Table 2.4 and Figure 2.24 represent the natural gas household tariffs in the different countries by 2nd quarter of 2017.

2.3.4. Analysis of Investment Project Implementation

According to the information provided by the 5 largest companies in the natural gas sector, the planned investment for 2017 amounted 225,329,511 GEL, and actual performance was 196,383,329.48 GEL (Figure 2.23).

Among them, for the purposes of construction and rehabilitation of the natural gas transportation main pipelines, the investments were made by Georgian
<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Pre-tax (Tetri/m³)</th>
<th>Tax (Tetri/m³)</th>
<th>Tax Included (Tetri/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azerbaijan</td>
<td>TC</td>
<td>19.033</td>
<td>3.4</td>
<td>22.460</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>ERRA</td>
<td>23.149</td>
<td>4.2</td>
<td>27.316</td>
</tr>
<tr>
<td>Georgia (KazTransGas)</td>
<td>GNERC</td>
<td>39.113</td>
<td>7.0</td>
<td>46.153</td>
</tr>
<tr>
<td>Georgia (SakOrgGaz)</td>
<td>GNERC</td>
<td>48.254</td>
<td>8.7</td>
<td>56.940</td>
</tr>
<tr>
<td>Georgia (Socar Georgia Gas)</td>
<td>GNERC</td>
<td>48.314</td>
<td>8.7</td>
<td>57.011</td>
</tr>
<tr>
<td>Ukraine</td>
<td>EUROSTAT</td>
<td>66.332</td>
<td>13.1</td>
<td>79.392</td>
</tr>
<tr>
<td>Armenia</td>
<td>ERRA</td>
<td>71.625</td>
<td>14.3</td>
<td>85.945</td>
</tr>
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<td>Turkey</td>
<td>EUROSTAT</td>
<td>73.206</td>
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<td>97.951</td>
<td>7.9</td>
<td>105.856</td>
</tr>
<tr>
<td>Romania</td>
<td>EUROSTAT</td>
<td>57.052</td>
<td>51.6</td>
<td>108.605</td>
</tr>
<tr>
<td>Serbia</td>
<td>EUROSTAT</td>
<td>100.013</td>
<td>10.3</td>
<td>110.324</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>EUROSTAT</td>
<td>94.514</td>
<td>18.9</td>
<td>113.417</td>
</tr>
<tr>
<td>Hungary</td>
<td>EUROSTAT</td>
<td>95.202</td>
<td>25.8</td>
<td>120.978</td>
</tr>
<tr>
<td>Croatia</td>
<td>EUROSTAT</td>
<td>98.638</td>
<td>24.7</td>
<td>123.384</td>
</tr>
<tr>
<td>Lithuania</td>
<td>EUROSTAT</td>
<td>103.794</td>
<td>21.7</td>
<td>125.446</td>
</tr>
<tr>
<td>Latvia</td>
<td>EUROSTAT</td>
<td>101.732</td>
<td>28.2</td>
<td>129.914</td>
</tr>
<tr>
<td>Poland</td>
<td>EUROSTAT</td>
<td>116.166</td>
<td>27.2</td>
<td>143.318</td>
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<td>Estonia</td>
<td>EUROSTAT</td>
<td>111.355</td>
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<td>EUROSTAT</td>
<td>120.634</td>
<td>24.1</td>
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<td>EUROSTAT</td>
<td>140.225</td>
<td>25.4</td>
<td>165.658</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>EUROSTAT</td>
<td>156.034</td>
<td>33.0</td>
<td>189.028</td>
</tr>
</tbody>
</table>

**Table 2.4. Comparison of Natural gas household tariffs (Tetri/m³)**

**Explanations:**
TC - Regulatory body of Azerbaijan - Tariff Council
ERRA - Energy Regulators Regional Association
GNERC – Georgian National Energy and Water Supply Regulatory Commission

**Notes:**
Exchange rates by January 17 2018 are used for calculation:
1 EUR = 3.106 GEL
1 AZN = 1.497 GEL
The following gas thermal indicators are used for calculation
1 m³ = 11.06 kWh
1 m³ = 0.04 GJ
Oil and Gas Corporation LLC and Georgian Gas Transportation Company LLC, and for the purposes of construction and rehabilitation of natural gas distribution network and fulfillment of licensing condition the investments were made by KazTransGas Tbilisi LLC, Socar Georgia Gas LLC and SakOrgGaz JSC. Actual investments made by the above-mentioned licensees according to their activities are illustrated on Figure 2.24.

2.3.4.1. Natural Gas Transportation

The amount of planned investments in 2017 for high pressure transportation main gas pipelines was 52,295,645 GEL, however, actual performance amounted 17,534,849.32 GEL, from which 94.01% (16,485,248.32 GEL) was financed by the Georgian Oil and Gas Corporation LLC and 5.99% (1,049,601.0 GEL) – by Georgian Gas Transportation Company LLC.

The above-mentioned investments were mainly used for the construction and rehabilitation of main gas pipelines (17,120,407.32 GEL), purchasing materials, organizing metering devices, purchasing the main equipment for offices, and also special equipment, devices and software.

2.3.4.2 Natural Gas Distribution Activity

In 2017 the volume of planed investments accounted for 173,034,000 GEL, including Socar Georgia Gas LLC – 139,062,000 GEL, SakOrgGaz JSC – 18,602,000 GEL and KazTransGas Tbilisi LLC - 15,370,000 GEL. The actual investments amounted 178,848,480 GEL, including 165,295,478 GEL – with own funds and 13,553,002 GEL – with the third party (customer) financing.

In 2017 the significant part of actual investments - 83.46% or 149,269,974 GEL were made by Socar Georgia Gas LLC in the distribution sector, which according to purchase agreement of December 26, 2008 on the shares of regional gas distribution companies under the state ownership, constructed and put into operation 3,857 km natural gas distribution network in the reporting year ensuring the gasification of 76,000 new potential subscribers. In 2017 investments made by SakOrgGaz JSC amounted 18,328,198 GEL, including, 16,681,093 GEL – with own funds and 1,647,105 GEL – with the third party financing. Therefore, 106.686 km new gas pipelines were constructed by the company in the different regions in the reporting year. The existing networks were rehabilitated and the new subscribers were connected to the distribution networks as a result.

As for KazTransGas Tbilisi LLC, despite the fact that the company is under special management, it carries on investing for the purpose of fulfilling licensing activities. In 2017, the volume of planed investments by KazTransGas Tbilisi LLC accounted for 15,370,000 GEL and actual investments amounted 11,250,308 GEL (2,869,516 GEL – with own funds and 8,380,792 GEL - with the third party financing). Investments were made for construction and rehabilitation of gas pipelines, purchasing machinery and equipment, transport facilities, office equipment, intangible assets, gasification of new customers, moving the meters outside the customer’s territories and etc.

The investments in the distribution network made by companies are shown on Figure 2.25.
Water Supply Sector
3. Water Supply Sector

3.1. Regulatory Framework

According to the amendments made to the Law of Georgia on Electricity and Natural Gas on November 20, 2007, regulation of water supply sector falls within the competence of the Commission. Based on the above-mentioned primary legal act, the Commission developed number of secondary legal acts in order to regulate water supply sector. Water Supply sector is regulated by the following primary and secondary legal acts:

- Law of Georgia on Electricity and Natural Gas;
- The Commission’s Resolution № 23 of September 18, 2008 “On Approving the Rules for Licensing and Activity Control in the Electricity, Natural Gas and Water Supply Sectors”;

Amendments

In 2017 the Commission has made amendments to some secondary legal acts regulating water supply sectors and at the same time the following new secondary legal act has been adopted:

The Commission’s Resolution №45 “On Approving Rules for Calculation of Drinking Water Normative Losses”:

- defines the principles and rules for the calculation of the normative losses of drinking water in water supply system that are set for the water supply licensees;
- defines those categories of allowed expenditures which are the components of the normative losses of drinking water;
- encompass the obligation to reduce the allowed technical expenditures of drinking water, which are determined based on the incentive regulation principles according to the best international practice;
- encompass the procedures and rules for recalculation of the determined targets of the normative losses in each specific cases.

3.2. General Overview of the Sector

Based on the data of December 31, 2017, 9 licensees operate in the water supply sector of Georgia.

According to the data provided by the National Statistics Office of Georgia, population of Georgia is 3,718,000 by January 1, 2017, 55.5% of the population (2,064,998 persons) is supplied with water by 9 licensed company, whereas 44.5% (1,653,201) is supplied by other companies.

<table>
<thead>
<tr>
<th>Name of the Licensee</th>
<th>Ownership</th>
<th>Number of Customers (Subscribers)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Household</td>
<td>Non-household</td>
</tr>
<tr>
<td>Georgian Water and Power LLC</td>
<td>Private</td>
<td>474,436</td>
<td>29,703</td>
</tr>
<tr>
<td>Rustavis Tskali LLC</td>
<td>Private</td>
<td>50,578</td>
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</tr>
<tr>
<td>Mtskhetis Tskali LLC</td>
<td>Private</td>
<td>2,847</td>
<td>262</td>
</tr>
<tr>
<td>Georgian United Water Supply Company LLC</td>
<td>State</td>
<td>294,497</td>
<td>18,562</td>
</tr>
<tr>
<td>Batumis Tskali LLC</td>
<td>Municipal</td>
<td>75,097</td>
<td>9,749</td>
</tr>
<tr>
<td>Kobuletis Tskali LLC</td>
<td>Municipal</td>
<td>5,577</td>
<td>593</td>
</tr>
<tr>
<td>Sachkheris Tskalkanali LLC</td>
<td>Municipal</td>
<td>5,337</td>
<td>494</td>
</tr>
<tr>
<td>Marneulis Soptskali LLC</td>
<td>Municipal</td>
<td>7,972</td>
<td>70</td>
</tr>
<tr>
<td>Soguri LLC</td>
<td>Private</td>
<td>90</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>916,431</td>
<td>62,064</td>
</tr>
</tbody>
</table>

Table 3.1 General information on the licensees
plied through water supply systems that are under the ownership of local municipalities (see table 3.1).

Out of the licensees operating in water supply sector, 5 companies are under the state or municipal ownership, whereas 4 are under the private ownership. Table 3.1 provides information on the entities owning shares at the licensed companies (see table N3.1).

3.2.1. Licensing

16 water supply licenses have been issued by the Commission by December 31, 2017. Currently, only 9 licenses carry out water supply activities as 7 licenses have been revoked (see table N3.2).

Water supply licenses have been revoked based on the request of license holder and due to the non-fulfillment of licensing conditions by the licensees. The above-mentioned companies continued operation under the ownership of local municipalities.

3.2.2. Service Coverage Area of the Licensees

Information on the service areas of each licensee according to the territorial units is provided on the Figure 3.1. As it is shown on this figure, the lowest indicator (≈20%) is observed in Guria region where United Water Supply Company of Georgia LLC operates, whereas the highest indicator (≈95%) is in Tbilisi where Georgian Water and Power LLC carries out its activities. As per other cities, Rustavis Tskali LLC has the largest coverage area.

3.2.3. Continuity of Water Supply and Metering

Among other licensees Georgian Water and Power LLC has the lowest metering indicator (≈24%) and Sachkheris Tskalkanali LLC has the highest one (≈99%). It should be noted that Georgian Water and Power LLC submitted the investment plans for the years of 2018-2020 to the Commission which encompass plans of installation of 50,000 metering nodes during the above-mentioned period and other investment plans, which will increase metering indicator by 11%. Indicators of uninterrupted water supply for each licensee by December 31, 2017 are provided in table N3.2. As it is shown on the diagram, Mameulis Sop’tskali LLC has the lowest 24-hour water supply indicator and Sachkheris Tskali LLC has the highest one. In general, 6 licensees provide 24-hour water supply, whereas 3 licensees provide drinking water supply according to the schedule. In this regard, United Water Supply Company of Georgia LLC has to be mentioned separately.

In the service area covered by United Water Supply Company of Georgia LLC, average duration of water supply to the customers is 15.80 hours (see Figure N3.4). The lowest indicator of drinking water supply is observed in Kakheti region (12.7 hours in average), while the highest indicator is observed in Racha-Lechkhumi and Kvemo Svaneti regions (24 hours in average). It should be mentioned that in some cases those customers, that are provided with the drinking water less frequently, consume more water than the customers having 24-hour water supply (see Figure 3.5). For example: average indicator of water supply in Imereti region is 13.6 hours and the volume of consumed water in one day per person constitutes 155 liters, while average indicator of water supply in Guria region is 20 hours and the volume of consumed drinking water in one day per person constitutes 151 liters. In Racha-Lechkhumi and Kvemo Svaneti regions having 24-hour water supply, the volume of consumed drinking water in one day per person constitutes 151 liters. It can be said, that frequent interruptions of drinking water supply and the schedule of water supply force the customers to find another sources, including creating of drinking water reservoirs that increase the indicator of drinking water consumption. The existence of non-metered household customers also has very significant impact on the above-mentioned indicators (see Figure 3.6). As this figure shows, in the regions having the shortest water supply schedule, the metering percentage constitutes 50% in average compared to the number of metered customers. The Commission intensely
works with the companies to prioritize the metering and 24-hour water supply issues. Information on the consumption of drinking water per one metered customer is provided on Figure 3.7. As it was mentioned before, Kobuletis Tskali LLC and Soguri LLC do not have metered household customers. Therefore, information on these licensees is not provided. From other licensees the customers of Marneulis Sopistskali LLC have consumed the least volume of water (81 liters per person within 24 hours) and Mtskhetis Tskali LLC has the highest indicator of water consumption (467 liters per person within 24 hours).

In the whole country the average volume of drinking water consumption (metered segment) per person within 24 hours constitutes 169 liters (see the comparison to EU countries, annex N14).

3.2.4. Proper Functioning of Water Supply Systems and Reliability

Two main indicators can be used to assess the proper functioning of water supply systems and reliability for each licensees. The first indicator is the frequency of damages of pipelines (accident/per year/per 100 km network) and the volume of losses (volume of non-revenue water), which is the difference between the extracted and sold water. Information on the frequency of damages of pipelines is provided on Figure 3.8. During the reporting year, the highest number of accidents is observed in the following companies: Georgian Water and Power LLC (220 accident per 100 km network) and Rustavis Tskali LLC (294 accident per 100 km network).

This data has been improved compared to the data of year of 2016, in particular, the number of accidents in the system owned by the Georgian Water and Power LLC has been decreased by 10% whereas in case of Rustavis Tskali LLC the accidents has been decreased by 28%. In addition to the frequency of damages, information on the connected customers for each 1 km network in average is also very important to assess the proper functioning of the systems and reliability (see Figure 3.9). In this direction Batumis Tskali LLC has the highest indicator in the household and non-household segments (household segment – 329.3 and non-household – 46.9). Information on the volume of drinking water and non-revenue water is provided on Figure 3.10. The highest percentage of correlation between the extracted and non-revenue water is observed in case of Georgian Water and Power LLC, United Water Supply of Georgia LLC and Kobuletis Tskali LLC and the total percentage of the
correlation for these three companies constitutes 79%. It should be noted that the volume of non-revenue water by its nature is the sum of any type of losses and consumed water (except the volume of water legally sold to the customers). The main reasons beyond the losses are the drinking water losses in the amortized systems, inefficient usage caused by the non-metered customers and usage of drinking water for own purposes. From the presented information, it can be clearly observed that the companies having lowest indicators of non-revenue water at the same time have lowest indicators of metered customers. Information about the total volume of sold and non-revenue water per licensees is provided.
3.3. Drinking Water Availability Index

Correlation between the tariff level in water supply sector and the average income of population is assessed by Drinking Water Availability Index which is calculated considering the water supply service fee payed by one customer (subscriber/household) during one year and the average annual income. Figure 3.12 provides information on the amount of average fee charged to the household customers (metered and non-metered) by the licensees for the provision of water supply services during one year. Difference between the data provided on Figure 3.12 is not caused only due to the tariff rate. Consumption of different volume of water by the customers has also impact on it.

According to the data provided by the National Statistical Office of Georgia, the average income of the population of Georgia has been constituted 1,042.20 GEL per month during the reporting period, whereas water supply service fee for one household customer is 62.9 GEL in average (see Figure 3.13).

Drinking Water Availability Index has been constituted 0.84% in average in European Union countries (detailed information is provided on Annex N15). It should be noted that in the most European Union countries value added taxes do not apply to water supply activities (for example, Great Britain and Malta), whereas in some European Union countries standard value added taxes constitutes 21.5% in average, but the tax for the water supply activity is 14% in average (see Annex N15).

3.4. Pricing and Tariff Regulation

3.4.1. Legal and Methodological Basis

By Resolution №1 of August 5, 2017 the Commission approved the new methodology for calculation of water supply tariffs and also depreciation/amortization norms of tariff regulated companies on the basis of the Article 5 of Law of Georgia on Electricity and Natural Gas and the Article 14 of Law of Georgia of Normative Acts.
Similarly to the new tariff regulations in the electricity and natural gas sectors, the conceptual principles were defined based on the best international practice that envisages the incentive regulations for optimization of the operational costs, uses consumer price index mechanisms and creates incentives for attracting the investments.

The tariff methodology ensures determination of rate of return on the regulatory asset base by Weighted Average Cost of Capital (WACC) method, which was defined as 15.99% (pre-tax) for 2018-2020 regulatory period.

Based on the new tariff methodology, the company shall submit a tariff application in accordance with the tariff application template approved by the Commission by Decision №48/41 of July 13, 2016. Financial and technical data of the company and planned investments for tariff regulatory period are indicated in the tariff application form.

### 3.4.2. Tariff Regulation and Current Tariffs of the Sector

In the reporting year, the tariff regulation procedures were carried out for the following licensees: Georgian Water and Power LLC, Mtskhetis Tskali LLC and Rustavis Tskali LLC pursuant to the principles of the applicable tariff methodology. Accordingly, the new rates of water supply marginal tariffs were set with validity period from January 1, 2018 including December 31, 2020.

#### 3.4.3 Comparative analysis of tariffs

Figure 3.15 represents the water supply household tariffs in the different countries by 2nd quarter of 2017.

#### 3.4.4. Analysis of Investment Project Implementation

For the purpose of ensuring 24-hour continuous water supply by water supply licensing companies, rehabilitation of existing network, construction of new network and installation of individual metering, the actual investments of the two largest water supply companies of Georgia, Georgian Water and Power LLC (operating in Tbilisi) and United Water Supply Company of Georgia LLC (operating on the almost whole territory of Georgia except of Adjara AR and Tbilisi) amounted 266,571,466 GEL for 2017. Figure 3.17 indicates the above-mentioned information by licensees.
Figure 3.14. Existing tariffs in water supply sector
Figure 3.15. Water supply household tariffs by countries for 2nd quarter of 2017 (GEL/m³)

Figure 3.16. Planned and actual investments of 2017 (1000 GEL)

Figure 3.17. Made investments by licensees (1000 GEL)
Methodological Activity
4. Methodological Activities

4.1. Development of Regulation

For the purposes of improving existing legislative base in the electricity, natural gas and water supply sectors the following reforms have been carried out:

1. On the basis of the Resolutions №16, №17 and №18 of July 21, 2017 amendments have been made to the Supply and Consumption Rules of Electricity, Natural Gas and Water Supply Sectors approved by the Commission. Those amendments aimed at ensuring compliance with Commercial Service Quality Rules approved by the Commission’s Resolution №13 of July 25, 2016 and facilitating the processes. As a result, companies’ actions have become more predictable for the customers.

According to the amendments (the Commission’s Resolution №6 of April 19, 2017) to the Commission’s Resolution №20 of September 18, 2008 “On Approving Electricity (Capacity) Supply and Consumption Rules”, obligations and scope of responsibility of Licensees and License seekers have been specified, the obligation of the company to notify customer 1-5 days in advance of the exact date of commencing supply and send immediate notification after commencement of supply has been prescribed. Procedure according to voltage levels has been detailed, specifically, actions the company should take if customer of 220 V does not consent to commencement of supply, if the customer is not present on place or connection of the internal network to the distribution network cannot be ensured. As a result, connection procedures to the electricity distribution network have become much more simplified and clarified. Hereby, companies register notification in a mandatory field of the electronic journal that has ensured more predictable and transparent connection process.

Hereby, it should be noted that the reforms carried out by the Commission in consultation with the companies have gained recognition at the international arena. Specifically, in 2017 Georgia has advanced by 9 positions according to electricity getting index of business simplicity rating, as far as in the recent (2018) report of Doing Business respective data have been reflected (procedures and connection fee has been decreased):

- Simplified procedure of new connection that has been recognized by the doing business team as three interactive procedure (according to the new connection procedure Georgia stands on the same level as leading countries such as Japan, Sweden, Germany);
- Reduced fee of connecting to the electricity distribution network – 15 254 GEL, without VAT (According to the doing business report the fee was 29 600 GEL).

Doing Business team has positively evaluated real time monitoring mechanism of the companies that was enforced by the Commission (observation of the following processes through electronic journals: registration of customer application, responding to them and accruing compensation to the customers in case of violation of the guaranteed standards and also reducing connection fee by half).

2. Systemic monitoring rule of the regulated activities of the companies has been implemented at the Commission taking ISO 9001 cycle management principles into consideration.

According to the mentioned rule the staff of the Commission analyses data of the electronic journals of uniform system of accounting, the Commission’s decisions and mystery shopper project regularly (on a monthly, quarterly and annual basis). On the basis of analyzing such information the departments of the Commission are obliged to identify circumstances that have been impeding development of the energy and water supply sectors and submit proposed solutions to the Commission.

3. More than 80 standard application forms have been developed and become publicly available in all three sectors:

- Seekers of the connection to the electricity, natural gas and water supply networks (including cases of new constructions, separation of real estate and/or other cases) have been provided with the possibility to use standard forms developed by the Commission;
- Standard forms envisage mandatory information that the applicant shall submit to the company envisaging peculiarities of the specific legislative acts;
- Standard application forms are available at the Commission’s website titled as “Standard Application Forms for Customers” and is available for any stakeholder;
• Standard forms have recommendatory character (except of the forms that are approved by the Commission’s decision), though it provides important information to the customer on his/her rights. In the informational field of each standard form it is indicated that the Company is obliged to register standard application submitted by the customer, issue a registration number and send text message to the customer indicating registration number and date of the application.

4. Service of electronic notification has been implemented. It bears interactive character and after responding to the received message with respective code the most recent message or bill will be repeatedly sent to the customer. Through the same method change of contact details is possible. Companies providing services have become obliged to send the information to customers that ensures predictability of their services and planned actions. Specifically, companies became obliged to provide the following information to the customers:

• Reminder on bill payment deadline;
• Number and date of registering the application;
• Response or reaction to the application;
• Time and duration of the planned electricity (natural gas, drinking water) supply interruption;
• In case of unplanned interruption (outage) of the electricity (natural gas, drinking water) supply and when complex work has to be undertaken for the restoration (drafting design and budgetary documents), specific reasons for interruption, presumable time for restoring supply, etc.

Except of the abovementioned, interactive message service has been implemented in all large distribution companies, according to which at any stage of reviewing a specific issue an applicant is entitled to request:

a) repeated sending of received message – by sending “111” to an electronic address/number received by an applicant, also through hotline or in writing;

b) to an electronic address/number indicated by the distribution licensee in advance and by sending new number/electronic address, also in writing;

c) specification and/or definition of the text message content – through a hotline or in writing.

Note: despite the fact that companies have sent out service codes, availability of such codes is still a problem and the work is carried out currently for improving it.

4.2. Mystery Shopper Project

The aim of the mystery shopper project is to monitor fulfillment of the requirements set by the Commission, improving service quality of the Companies and
identification of the service quality issues that need to be improved. The project envisages two stages (checking and rechecking of identified violations).

The project has been implemented by observing process of providing services to the customers by Telasi JSC, Kaztransgas LLC and Georgian Water and Power LLC (hereinafter the companies). The first intermediary report of the checking stage has been already submitted which reflects violations identified within the project.

The companies have been notified about the violations identified during the recent year and have been given recommendations and deadline for eliminating such violations. At the second stage it will be verified whether or not the identified violations have been eliminated.

The main value of the project is that identified violations are accompanied with the evidences and the Commission will be able both to see actual picture how the service is provided to a retail customer and how the administrative proceedings are being carried out.

No similar project exists in the energy and water supply sector. In the future it will have systematic character and will be expanded to the regions as well. This will facilitate ongoing improving of services provided by the companies acting in those sectors.

4.3. Explanations of the Commission and Cooperation with other Public Authorities

1. The Commission provides explanations to the regulated companies and other stakeholders regarding the issues envisaged in regulatory normative acts:

   • The Commission started administrative proceedings for the purpose of approving decision №69/3 of September 14, 2017 on the basis of the application of Trans Service LLC against Telasi JSC. Though, in the case review process the Commission revealed that there have been gaps in the company while concluding contract with the customer. As a result, the Company was fined and explanations on respective regulatory norms have been provided to it. Specifically, the issue concerned electricity purchase contracts with Trans Service LLC and 714 other (commercial) customers as far as some Articles of those contracts were contradicting the conditions and requirements set by the Commission under the Electricity (Capacity) Supply and Consumption Rules. Those Articles defined different conditions and significantly worsened customers’ situation, hereby they neglected direct indications and requirements of the Commission.

   • For the purpose of assessing readiness of customers’ internal network for gas supply the Commission approved the decision №71/6 of September 21, 2017 and the decision №78/4 of October 19, 2017, based on which the complete list of documents proving that new customer’s facilities are ready for the distribution licensee to start natural gas supply has been defined. As far as approval of the Commission’s individual administrative legal acts is not enough for final solution of the problem, a draft of Technical Resolution of the Government of Georgia on Security of Natural Gas Internal Network has been prepared that will facilitate prevention of accidents resulting from improper exploitation of customers internal networks and reduction of risks. The draft directly defines rules and procedures of actions of the distribution licensee in case of problematic issues related to gas supply, that will also make relations of the distribution licensee with customer on security issues easier and transparent.

   • In 2017 the Commission has reviewed a number of applications of the distribution licensees concerning prolongation of terms of connecting new customers to the network. The Commission has established a practice according to which terms of new connection will be prolonged only in case when exceptional and inevitable conditions preventing connection exists and the Licensee is not able to ensure completion of connection works on time.

Based on the regulatory practice of the Commission such circumstances are: failure of the administrative body to issue permission of linear construction on time despite the fact that the permission seeker has submitted application in a timely manner. After careful analysis of the issue it has been observed that the current legislation does not envisage peculiarities of constructing communal networks. As a result of close cooperation with other stakeholders the draft of amendments to the resolution of the Government of Georgia on Rules of Issuing Construction Permits and Terms of Permit has been prepared envisaging that communal linear constructions of the I class shall be agreed in accordance with one-stop shop principle. In case the draft will be approved, terms and costs of planned and unplanned works will be
significantly reduced that will have positive effect on new customer connections and reliability of supply standards.

2. The Commission has been actively working together with the Ministry of Finance and the Ministry of Energy of Georgia for promoting renewable energy sources. Government of Georgia has supported solutions to all those problems which have been identified during regulatory process.

- Net-metering rules have been fully envisaged by the Order № 996 of December 2010 of the Minister of Finance of Georgia on Tax Administration. According to an Order, VAT is accrued to the amount of electricity price which is paid by the retail owner of micro-generating power plant to the distribution licensee, envisaging netting of the electricity flown from party to party throughout the month in accordance with the bill;
- An income received through micro-generating power plant has been excluded from an income and profit taxes (in case of physical and legal persons);
- Law on Entrepreneurs has defined that the usage of micro-generation power plant is not considered as an entrepreneurial activity.
Commercial Service Quality
The year of 2017 was very important and fruitful in the direction of improving commercial quality of service. During reporting period the electronic monitoring system of commercial service quality was fully launched and activated which aims at achieving goals set by the Commission’s Resolution N13 of July 25, 2016 “On Approving Commercial Quality Rules of Service” by efficient monitoring of regulated companies. With the help of this system, it is possible to analyze compliance with the set standards in real time, to identify problematic issues and protect consumers’ interest by paying compensation for overdue rendered service.

Commercial Service Quality Rules adopted by the Commission apply to electricity, natural gas and water supply sectors. Commercial Service quality standards are commercial quality indicators approved by the Commission that set minimum level for quality of service rendered to the consumers. Maintenance of those indicators is the obligation of the company. Monitoring of the following general and guaranteed standards set by the Resolution is carried out through the electronic monitoring system of service commercial quality:

• General Standard:
  1. Providing information to the consumers concerning the date and duration of scheduled outages – consumers shall be informed about 90% of total number of outages on time in order to comply with the standard;
  2. Restoration of supply to the consumer to whom the supply has been interrupted due to the unscheduled outage – 80% of total number of outages shall be restored on time in order to comply with the standard;
  3. Time required for responding calls by the call center operator.

• Guaranteed Standard:
  1. Restoration of supply to consumers being disconnected due to unpaid charges: timeframe of compliance – if the amount is paid until 16:00 o’clock, supply shall be restored in 5 hours after payment; if the amount is paid after 16:00 o’clock, supply shall be restored until 12:00 o’clock of upcoming day (in the mountain region – until 14:00 o’clock of upcoming day);
  2. Provision of reasonable answers in writing to the written queries of consumers and/or reacting to them – timeframe of compliance - 10 working days;
  3. Provision of on-site inspection of metering tools on the basis of consumer’s application – timeframe of compliance – 10 working days;
  4. Registration as a subscriber and ensuring supply under requested conditions – timeframe of compliance – 5 working days;
Figure 5.1. Provision of information to the consumers concerning the date and duration of scheduled outages

Figure 5.2. Restoration of supply to the consumer to whom the supply has been interrupted due to the unscheduled outage

Figure 5.3. Restoration of supply to consumers being disconnected due to the unpaid charges
Figure 5.4. Provision of reasonable answers in writing to the written queries of consumers and/or reacting to them

Figure 5.5. Provision of on-site inspection of metering tools on the basis of consumer’s application

Figure 5.6. Registration as a subscriber
5. Connection of a new consumer to the network – timeframe of compliance is determined according to the package selected by the consumer;

6. Provision of on-site inspection of technical quality of supply on the basis of consumer application – timeframe of compliance – 5 working days.

It should be noted that electronic monitoring system of commercial service quality is an innovative instrument which is essentially different from the existing practice and methods applied in the world, in particular, instead of processed statistic information received from the companies, the Commission has instant access to all written application submitted to the company which creates initial database at the Commission and is the effective mechanism of efficient monitoring. Monitoring system encompasses electronic journals and the relevant information shall be inserted into the electronic journals immediately once the obligation of providing services under the Commercial Service Quality Rules arises. Database of electronic journals (server) is kept at the Commission. Obviously, such approach implies keeping large amount of information at the Commission and effective systematization of information processing and analysis is necessary. For this purpose, Service Commercial Quality Monitoring Unit was established in 2017 which controls the commercial quality of service provided to the retail consumers by the distribution licencees in electricity, natural gas and water supply sectors, by the supply licencees in natural gas sector and also facilitates the identification of gaps, preparation of recommendations for improving commercial service quality and development of monitoring systems. Statistical data prepared based on the records from the electronic monitoring system of commercial service quality in 2017 is provided below:

If the company fails to provide services envisaged under guaranteed standards, it shall compensate the consumer in an amount envisaged for such failure:

- Amount of compensation for failing to connect a new consumer in the timeframe set under the guaranteed standard in electricity, natural gas
Figure 5.9. Total amount of paid compensation pursuant to the guaranteed standards in the sectors in 2017

Total Amount of Compensation: 1,281,330 GEL

- Electricity: 46%
- Natural Gas: 44%
- Water Supply: 10%

Figure 5.10. Paid compensations according to the standards in 2017

- Registration as a subscriber: 93%
- Restoration of supply to consumers being disconnected due to unpaid charges: 7%
- Provision of on-site inspection of metering tools on the basis of customer’s application: 2%
- Provision of reasonable answers in writing to the written queries of customers and/or reacting to them: 25%
- Provision of on-site inspection of technical quality of supply on the basis of customer application: 1%

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and water supply sectors are determined according to the following principles:

In case of initial expiry of connection term defined by the Commission for respective service package to connect a new consumer to the network (system), connection fee shall be reduced by 50%; in case of repeated expiration of term, if the connection works to the network (system) is not completed, connection fee shall be annulled.

In case of expiry of term for connecting a new consumer to the network (system) for the third or more time, the licensee is obliged to compensate 50% of connection fee to the connection applicant for each expired term.

For non-compliance with other guaranteed standards, the compensation shall be paid only one time and the amount of compensation for household consumers consists of 5 GEL and for non-household consumers – 10 GEL.

Compensation envisaged by guaranteed standard shall be credited to the consumer’s subscriber card for further financial settlement. Hereby, the compensation shall be reflected at consumer’s subscriber card within 15 days after breach of guaranteed standard occurred.

In 2017 the companies paid to the consumers 1,281,330 GEL as a compensation for the non-compliance with guaranteed standards. From which 1,193,925 is paid due to the non-compliance with the standard concerning to the connection of a new consumer to the network and the amount of money – 87,405 GEL is paid for non-compliance with other guaranteed standards.

Amount of compensation which shall be compensated by the companies due to the non-compliance with the guaranteed standards within the determined timeframe in 2017 is provided below in the table:

It should be noted that at the initial stage after permanent monitoring of all records inserted in the electronic journal, the following violations were identified: giving incorrect standard to the record; inserting record into the wrong category; uploading improper documentation; completing record in an wrong way by inserting terms and other information in it incorrectly; non-registering the applications submitted to the companies in the electronic journal and etc. Intensive work was carried out with the companies on these violations and number of meetings were held. In case of repeated violation, the companies were receiving notification through text or written message on the fact of violation requesting its elimination. If the company doesn’t fulfill requirements determined by the Commission (there was only one case), the case will be presented to the Commission for reviewing it on public hearing. After reviewing the case on public hearing, one company – Georgian Water and Power LLC was fined for multiple violation of licensing condition.

<table>
<thead>
<tr>
<th>Company (GEL)</th>
<th>Compensation</th>
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<tbody>
<tr>
<td>Telasi JSC</td>
<td>55,080</td>
</tr>
<tr>
<td>Energo-Pro Georgia JSC</td>
<td>68,475</td>
</tr>
<tr>
<td>Kaztransgas Tbilisi LLC</td>
<td>8,435</td>
</tr>
<tr>
<td>Socar Georgia Gas LLC</td>
<td>511,375</td>
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<tr>
<td>Sakorgaz JSC</td>
<td>74,050</td>
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<td>SG gas company LLC</td>
<td>5</td>
</tr>
<tr>
<td>Mamedi LLC</td>
<td>10</td>
</tr>
<tr>
<td>United Water Supply Company of Georgia</td>
<td>615</td>
</tr>
<tr>
<td>Georgian Water and Power LLC</td>
<td>555,245</td>
</tr>
<tr>
<td>Rustavis Tskali LLC</td>
<td>7,515</td>
</tr>
<tr>
<td>Batumis Tskali LLC</td>
<td>500</td>
</tr>
<tr>
<td>Mtskhetis Tskali LLC</td>
<td>15</td>
</tr>
<tr>
<td>Kobuletis Tskali LLC</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 5.1. Amount of compensation which shall be paid by the companies
Dispute Settlement
6. Dispute Settlement

6.1. Overview of the Dispute Settlement Regulatory Framework

According to the Article 4 (5) of the Law of Georgia on Electricity and Natural Gas, one of the main functions of the Commission is to settle disputes arising between licensees, small power plants, importers, exporters, suppliers, consumers and market operator within its competence. These competences are determined by the following legal acts: Code of Administrative Violations of Georgia, Resolution N12 of July 9, 2009 “On Approving Natural Gas Supply and Consumption Rules” approved by the Commission, Resolution N20 of September 18, 2008 “On Approving Electricity (Capacity) Supply and Consumption Rules” approved by the Commission, Resolution N32 of November 26, 2008 “On Approving Drinking Water Supply and Consumption Rules” approved by the Commission and other legal acts.

On December 29, 2017 the Dispute Settlement Procedural Rules have been approved by the Commission’s Resolution N54 in order to ensure dispute settlements between the regulated utilities and also between the utilities and consumers.

The Commission is independent in its decision-making process and performs its activities only according to the Georgian legislation. It resolves disputes impartially, in full compliance with the legal requirements. Despite the fact that Public Defender’s office of Consumers’ Interests carries out its functions independently from the Commission, protection of consumers’ interests is still one of most important functions of the Commission.

Disputes are reviewed on an oral hearing of the Commission’s sessions on the basis of the rules set by the General Administrative Code of Georgia. Oral hearings of the case enable parties to express their positions, present evidences, submit petitions and etc. Such approach facilitates the Commission to take objective and lawful decision as a result of comprehensive examination of case materials. The Commission issues administrative-legal act – decision, after reviewing the case.

The function of the Commission to protect consumers’ interests in accordance with the legislation, does not exclude right of the Commission to defend company’s interests, if the company submits well-grounded arguments which are based on the evidences and are in compliance with the existing legislation.

6.2. Electricity Sector

In electricity sector relations between consumers and companies are regulated by the Commission’s Resolution N20 of September 18, 2008 on Approving Electricity (Capacity) Supply and Consumption Rules.

The substantial part of disputes during reporting period were caused by claims of utilities to reimburse liabilities being out of the period of limitation. The cause of dispute has been non-fulfillment of requirements by the company, particularly, incorrect billings caused by damaging meters, incorrect determination of supervision and charging period, charging when meter was not checked by authorized body and etc. Part of disputes that consider unauthorized connections and charging with tariffs according to incorrect level, has been also relevant throughout reporting period. The total number of applications/complaints in the electricity sector submitted directly to the Commission during the reporting period has been 1,900. The applications/complaints were submitted against the following companies:

a) Telasi JSC – 1284;
b) Energo-pro Georgia JSC – 599;
c) Kakheti Energodistribution JSC – 17.

As a result of dispute resolution, the Commission made 521 decisions. 482 applications/complaints were satisfied fully, 22 – partially and 17 applications/complaints were not satisfied.

Amount cut off from consumers’ accounts in electricity sector has constituted 4,451,756.62 GEL.

6.3. Natural Gas Sector

In natural gas sector relations between consumers and companies are regulated by the Commission’s Resolution N12 of July 9, 2009 “On Approving Natural Gas Supply and Consumption Rules”. The main reasons of complaints in natural gas sector are the following: non-fulfilment of rules by the companies, specifically, improperly drafted protocols and acts on illegal use (theft) of natural gas, drafting administrative violations protocol in cases when drafting of protocol is not permissible at all, incomplete examination of cases by company itself, incorrect charging consumers with metering costs and improper application of principles set by rules for charging. Consumers’ complaints were also caused by wrong
The total number of applications/complaints in the natural gas sector submitted directly to the Consumers’ Complaints Department at the Commission during the reporting period has been 2862. The applications/complaints were submitted against the following companies:

a) Kaztransgaz-Tbilisi LLC – 673;
b) Socar Georgia Gas LLC – 1949;
c) Sakorgaz JSC – 109;
d) Taba LLC – 86;
e) Kamargazi LLC – 1;
f) Energokavshiri JSC – 6;
g) SG Gas Company LLC – 2;
h) Varketilairi LLC – 20;
i) Kamari M LLC – 6;
j) Mamed LLC – 1;
k) Socar Georgia Gas Distribution JSC – 1;

As a result of dispute resolution, the Commission made 231 decisions. 117 applications/complaints were satisfied fully, 67 – partially and 9 applications/complaints were not satisfied.

Amount cut off from consumers’ accounts in natural gas sector has constituted 4,451,756.62 GEL.

6.4. Water Supply Sector

In water supply sector relations between consumers and companies are regulated by the Commission’s Resolution N32 of November 26, 2008 “On Approving Drinking Water Supply and Consumption Rules”. The main reasons of complaints in water supply sector are the following: non-fulfillment of rules and requirements by companies, specifically, complaints for claiming reimbursement of liabilities being out the period of limitation, improper charging of consumers by non-metered water supply acts, also charging household consumers with tariffs set for non-household consumers and charging per inhabitant. The reason of claims has been also charging consumers in the address in a period when they were not actually residing there.

The total number of applications/complaints in the water supply and sewerage sector submitted directly to the Consumers’ Complaints Department at
the Commission during the reporting period has been 2420. The applications/complaints were submitted against to the following companies:

a) Georgian Water and Power LLC – 1,548;
b) Georgian United Water Supply Company LLC – 171;
c) Mtskhetis Tskali LLC – 178;
d) Rustavis Tskali LLC – 498;
e) Batumis Tskali LLC – 25.

As a result of dispute resolution, the Commission made 231 decisions. 117 applications/complaints were satisfied fully, 67 – partially and 9 applications/complaints were not satisfied.

Amount cut off from consumers’ accounts in the water supply sector has constituted 1,314,876.65 GEL.

During reporting period, the Commission has made 2,655 decisions. Total amount cut off from consumers’ accounts has constituted 7.14 mln GEL in all regulated sectors.

Taking into account the dispute resolution practice, the Commission is working to improve the corresponding supply and consumption rules in the above-mentioned three sectors which will notably decrease the number of complaints.
International Relations
7. International Relations

7.1. Membership to the Energy Community

2017 has been important for the Commission for a number of challenges having international character. On April 21 of the mentioned year the Parliament of Georgia ratified Protocol of Accession of Georgia to the Treaty Establishing Energy Community as a result of which Georgia became a member to the Energy Community. Georgia, as the contracting party to the Treaty Establishing Energy Community is obliged to comply with the legislative acts of European Union and approximate national legislation with the European standards. The Commission has already started work in that direction.

7.2. Observership to the Council of European Energy Regulators (CEER)

On July 1, 2017 the Georgian National Energy and Water Supply Regulatory Commission (the Commission) was granted status of an observer to the Council of European Energy Regulators (CEER).

The CEER is a platform of European Energy Regulators that encompasses 36 independent energy regulatory organizations. Obtaining the status of an observer will assist the Commission in the process of approximating its activities with the European standards.

Members of the CEER are regulatory commissions of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, United Kingdom, whereas observers together with Georgia are energy regulatory commissions of Bosnia-Herzegovina, Macedonia, Kosovo, Moldova, Montenegro and Switzerland.

7.3. Partner International Organizations

Cooperation with international organizations has special importance for achieving the Commission’s aims and objectives. A number of events have taken place in 2017.

Energy Regulators Regional Association (ERRA) has organized and financed General Assembly, Chairmen Session, Licensing and Competition and Tariff and Pricing Committee meetings in Tbilisi on May 22-23. Representatives of the energy and water supply authorities from various countries have participated in the abovementioned meetings where they discussed important topics in the energy sector such as: liberalization of energy markets and the role of the regulator; development of markets; tariff regulation, licensing, enhancing competition etc.

During 2017 the Commission’s employees have been actively sharing their experience with partner organizations within the framework of various international projects. The Commissioner, Giorgi Pangani has made presentation on Georgian Electricity Market at the training organized by the Energy Regulators Regional Association (ERRA). Under the program organized by National Association of Regulatory Utility Commis-
sioners (NARUC) employees of the Commission have been in Ukraine and Rwanda were they shared their experience in tariff regulation.

On June 20-21, 2017 the Georgian National Energy and Water Supply Regulatory Commission has organized General Assembly and Working Group meeting of Network of European Water Regulators (WAREG). Representatives of the regulatory commissions of Italy, Belgium, Portugal, Moldova, Malta, Macedonia, Latvia, Ireland, Hungary, Scotland, Romania and Bulgaria have participated in the meeting.

For the purpose of sharing European best practices participants of the meeting have discussed monitoring and regulation principles of water supply companies. Hereby, they discussed mechanisms of agreeing investment projects of the companies with the regulatory commissions.

Hereby, it shall be also mentioned that on December 5 of 2017 WAREG has been founded as a legal entity and the Commission is one of its founding members. The aim of this organization is to share experience, best practices and information among regulatory authorities of different countries.

7.4. Relations with Energy and Water Supply Regulatory Authorities of Other Countries

A meeting of the Commissioner of the Georgian National Energy and Water Supply Regulatory Commission, Ms. Maia Melikidze with the representatives of Energy and Water Regulatory Commission of Bulgaria was organized in Bulgaria (Sofia) on November 29. Within the framework of the meeting an agreement on cooperation has been signed that envisages sharing of experience on issues related to the energy sector regulation. Hereby, a meeting with the sector committee representatives of the Bulgarian Parliament has been held on 30th of November.

7.5. Implemented and Ongoing International Projects

A number of international projects have been implemented in 2017. Some of them have started in 2017 and are scheduled to be finalized in 2018.

We should mention Energy Summit that was organized within the framework of Government For Growth (G4G) project and by the Ministry of Energy of Georgia. This event was attended by the Ambassadors of Turkey and United States, the Head of the European Union Delegation, the representatives of energy regulatory authorities of neighboring countries, donor organizations, local private and public authorities and non-governmental organizations. During the meeting attention has been paid to the integration of Georgia to the European Union and obligations undertaken by Georgia under Association Agreement.

The EBRD-funded Project on Providing Consultancy Services to the Commission has been implemented in 2017. The project had been executed by DNV.GL – Kema Consulting Gmbh. The terms of reference envisaged calculation of losses in electricity and natural gas sectors, regulation of service quality in the electricity and natural gas sectors, licensing in the natural gas sector, investment appraisal, unbundling in the natural gas sector and implementation of Uniform System of Accounting.

The European Bank for Reconstruction and Development (EBRD) has funded a project concerning the electricity market model. Under the mentioned project meetings have been held in the Ministry of Energy of Georgia and the Commission. The representatives of the Ministry and the Commission have provided information on existing market, main problems and future perspectives to the experts. On the basis of the abovementioned information the primary and final reports have been prepared.

Technical Assistance and Information Exchange (TAIEX) project has been carried out on 24th and 25th of July on Providing Information to the customers in the Energy Sector. Foreign experts have made presentations on planning social media strategy, its contents and implementation.

The EU Twinning Project on “Strengthening Capacities of Georgian National Energy and Water Supply Regulatory Commission has been finalized. Trainings,
meetings and study visits have been held within the project that enabled the Commission to improve regulatory processes in accordance with the best regulatory practices.

The project, funded by Asian Development Bank (ADB), on Strengthening Capacities of Georgian National Energy and Water Supply Regulatory Commission has been carried out. The project envisaged development of financial management rules, tariff setting and network loss calculation methodologies, service standards and key performance indicators. Within the project study visits have been organized to Italy, France and Scotland. During the meetings representatives of the Commission have received an information on challenges and international practices in the water supply sector.

A project on energy efficiency is being implemented by the Ministry of the Foreign Affairs of Denmark. The project concerns data collection, verification and processing and integration of renewables into the grid.

A technical cooperation project for the purpose of developing Law on Energy Efficiency funded by the European Bank for Reconstruction and Development (EBRD) is being implemented. The preparation of the draft of the mentioned Law is scheduled for the June of 2018.

Currently, several projects are being carried out that are funded by the United States Agency for International Development (USAID) and organized by the National Association of Regulatory Utility Commissioners (NARUC), including:

- Technical assistance on net-metering;
- Technical assistance on distribution network planning;
- Technical assistance on natural gas transportation network rules;
- Cyber-security initiative of Black Sea Energy Regulators;
- Project on integration of regional balancing markets.
Public Relations
8. Public Relations

2017 has been important for the Commission with regards to informing customers on their rights in the electricity, natural gas and water supply sectors. Main aim of the communication activities of the Commission has been to provide society with the information regarding activities of the Commission in 2017. The abovementioned concerned regulations protecting customers’ rights, also tariff issues and other novelties in the energy and water supply sectors.

The Commission has declared 2017 as the year of protecting customers’ rights and all the activities have been directed towards the provision of the information to the customers on their rights to a maximum extent. The Commission has simplified the communication with customers and made it transparent. Together with other projects aimed at informing society, active work has been carried out for ensuring significant and important provision of information to the citizens through the social network, call center (hotline -16 216). The social video clip related to the call center has been recorded and transferred through the public broadcaster which has promoted it. Such activity facilitated provision of the respective information to the customers living in the regions. It is important that calling to the call center from any phone operator is free of charge that makes consultation process at the Commission much easier.

Based on the fact that the society increasingly uses social media, one of the main mandatory conditions for ensuring the Commission’s communication aims and objectives is to develop social media activities. Provision of thematic diversity of the information published in the social media by the Commission is important. Hereby, social media platform has gone beyond the informational aspects and in case of the
Commission has acquired function of informing and consulting customers.

Based on the consultations provided to the citizens through social network by the Commission in 2017 it has been identified that claims and complaints towards companies carrying out their activities in energy and water supply sectors mainly concerned quality of service.

The same trend is observed according to the incoming calls to the call center, specifically, 9499 calls have been identified in the call center throughout 2017, out of which 5623 calls concerned supply of various type of information, emergency outages, belated provision of the information to the customers regarding outages, communication problems with the citizens, belated reconnection works carried out by the companies.

2255 calls related to unlawful charging have been observed in a call center. In this regard calls of customers concerned incorrect billing by the moment of meter reading and debts out of statute of limitations.

1621 calls have been related to the terms and procedures for connecting new customers to the distribution networks.

Diagrams with sectoral breakdown of calls and problems identified in the sectors are provided below:

Throughout the reporting year tariff issues have been relevant for the society. Public Relation’s Department has ensured provision of the information regarding tariff discussions to the stakeholders, including provision of the comprehensive information to the representatives of media, non-governmental organizations in real time.

Media communication is one of the priority directions among the Commission’s activities and the Public Relations’ Department ensures provision of the information related to every relevant issue. The Media Club exists in the Commission in the framework of which meetings are organized and important issues are discussed with the Chair, Commissioners and employees of the Commission.

For the purpose of detailed analysis of tariff issues within the framework of Media Club representatives of the Commission have developed tariff simulation model for journalists participating in the Media tour. The simulation model implied calculation of provisional tariffs by the journalists. Such practice has been positively evaluated by the participants as far as simulation model provided opportunity to the participants to calculate all the tariff components and define possibility of its impact on final tariffs.

Tariffs have been most important topic for the media in 2017. As a result of media monitoring survey it has been identified that broadcasting trend has been characterized by neutral assessments. The Chair of the Commission, Ms. Irina Milorava has been the most frequent guest of TV and Radio programs.

Quantitative indicators of the media news on the Commission’s activities in 2017:

The Commission continues cooperation with the Radio Commerant. The host of the radio program “Professionals” is the Director of the Electricity Department of the Commission, Mr. Nugzar Beridze. Throughout the year guests of the radio program have discussed activities of the Commission, different news in the energy and water supply sectors, tariff issues, service quality and protection of customers’ rights.
Publicity of Information
9. Publicity of Information

The Commission ensures proactive publication of public information on its website (the Commission’s website – www.gnerc.org) according to the Resolution N7 on Approving Rules of Electronically Requesting Public Information kept at the Georgian National Energy and Water Supply Regulatory Commission and its Proactive Publication which is adopted by the Commission on March 28, 2014.

Pursuant to the Article 49 of Chapter III of the General Administrative Code of Georgia, report on public information was prepared and approved by the Commission Decision №82/33 on December 9, 2016 which includes analysis of ensuring freedom of information, availability of public information and fulfilling the requirements of public information issuance according to the Article 40 of this Code and analysis of being in compliance with the timeframe prescribed by this Code.

The above-mentioned document has been sent to the President of Georgia, the Prime-Minister of Georgia, the Parliament of Georgia and has been published in the Legislative Herald of Georgia pursuant to the Article 49 of Chapter III of the General Administrative Code of Georgia.

In 2017 72 written requests were submitted to the Commission from which 63 requests were fully satisfied, 7 requests were partially satisfied and 2 applications were transferred to the different departments of the Commission for giving response in compliance with the timeframe determined by the legislation. Partially satisfaction was caused by the absence of requested information at the Commission as well as by confidentiality reasons and existence of relevant legal basis.

With regard to issuance of public information, person responsible for ensuring availability of public information has kept register of letters submitted by e-mail (publicinfo@gnerc.org) or chancellery division on requesting issuance or interpretation of public information. Annual report of the Commission on issuance of public information is published on the Commission’s website (www.gnerc.org).

In 2017 116 public hearings were held at the Commission and 54 resolutions and 2,998 decisions were adopted. Resolutions and decisions adopted by the Commission are published on the Commission’s official website: www.gnerc.org.

The Commission fulfills the requirements of the Article 32 of General Administrative Code of Georgia, which concerns publicity of the Commission’s public hearings according to which the Commission’s hearings are public and any interested person is authorized to attend them, except the cases where the public hearing or its part is closed. During reporting period, the Commission did not make decision on the closure of public hearing.

Before making decision by the Commission, public consultations are held on issuance, modification, revocation, suspension of licenses, setting, adjustment or revocation of tariffs as well as disputes between the consumers and regulated companies or between the regulated companies themselves. Notifications on public hearings are published on the Commission’s official website.

In case of request of any interested person, the Commission makes decision on recognizing the submitted information as a commercially confidential information. In 2017 22 decisions were made on the recognition of information as a commercially confidential, including: 7 decisions – on fully recognition, 14 – on partially recognition and 1 – on refusing recognition it as a commercially confidential information.
Annex №1 - List of Licensees in the Electricity Sector

<table>
<thead>
<tr>
<th>Types of Activities/Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
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<tr>
<td>Electricity Generation</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
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<td>20</td>
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<td>Electricity Distribution</td>
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<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2*</td>
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<tr>
<td>Electricity Transmission</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3*</td>
<td>3*</td>
<td>3**</td>
</tr>
<tr>
<td>Electricity Dispatch</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>25</td>
<td>26</td>
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</table>

*Energo-Pro Georgia JSC provides electricity distribution and supply activities in the licensing area of Kakheti Energodistribution from September 1, 2017

** Additionally preliminary license is issued for Energo-Pro Georgia JSC

<table>
<thead>
<tr>
<th>Generation</th>
<th>Country/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Khramhesi 1 JSC</td>
<td></td>
</tr>
<tr>
<td>• Khramhesi 2 JSC</td>
<td></td>
</tr>
<tr>
<td>• Georgian Water and Power LLC</td>
<td>(Jinvali HPP)</td>
</tr>
<tr>
<td>• Vardnili HPP Cascade LLC</td>
<td></td>
</tr>
<tr>
<td>• Enguri HPP LLC</td>
<td></td>
</tr>
<tr>
<td>• Eastern Energy Corporation LLC</td>
<td>(Khadori HPP)</td>
</tr>
<tr>
<td>• Mtkvari Energy LLC</td>
<td></td>
</tr>
<tr>
<td>• Vartsikhe-2005 LLC</td>
<td></td>
</tr>
<tr>
<td>• Zahesri JSC</td>
<td></td>
</tr>
<tr>
<td>• G-Power LLC</td>
<td></td>
</tr>
<tr>
<td>• Energia LLC (Larsi HPP)</td>
<td></td>
</tr>
<tr>
<td>• Gardabani Thermal Power Plant</td>
<td></td>
</tr>
<tr>
<td>• Sakartvelo-Urban Energy LLC</td>
<td>(Paravani HPP)</td>
</tr>
<tr>
<td>• Saknakhshiri LLC</td>
<td></td>
</tr>
<tr>
<td>• Darial Energy LLC</td>
<td></td>
</tr>
<tr>
<td>• Energo-Pro Georgia JSC</td>
<td></td>
</tr>
<tr>
<td>• Rioni HPP</td>
<td></td>
</tr>
<tr>
<td>• Lajanuri HPP</td>
<td></td>
</tr>
<tr>
<td>• Dzevru HPP</td>
<td></td>
</tr>
<tr>
<td>• Atshesri</td>
<td></td>
</tr>
<tr>
<td>• Gumati HPP Cascade</td>
<td></td>
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<tr>
<td>• Shaori HPP</td>
<td></td>
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<tr>
<td>• Satoshkhe HPP</td>
<td></td>
</tr>
<tr>
<td>• Chitakhevi HPP</td>
<td></td>
</tr>
<tr>
<td>• Ortachala HPP</td>
<td></td>
</tr>
<tr>
<td>• Georgian International Energy</td>
<td>(Tbilisresi)</td>
</tr>
<tr>
<td>• Kartli Wind Power Plant LLC</td>
<td></td>
</tr>
<tr>
<td>• Adjara Energy – 2007 LLC</td>
<td>(Khelvachauri HPP)</td>
</tr>
<tr>
<td>• Adjaristskali Georgia LLC</td>
<td>(Shuakhevi HPP)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Dispatch</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Georgian State Electrosystem JSC</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transmission</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sakrusenergo JSC</td>
<td></td>
</tr>
<tr>
<td>• Energotrans LLC</td>
<td></td>
</tr>
<tr>
<td>• Georgian State Electrosystem JSC</td>
<td></td>
</tr>
<tr>
<td>• Energo-Pro Georgia JSC (Preliminary License)</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Telasi JSC</td>
<td></td>
</tr>
<tr>
<td>• Energo-Pro Georgia JSC</td>
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</tr>
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</table>

Annex №2 - Number of Electricity Customers in 2010-2017

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Retail Customer</td>
<td>1,474,527</td>
<td>1,522,259</td>
<td>1,581,896</td>
<td>1,623,110</td>
<td>1,664,802</td>
<td>1,653,549</td>
<td>1,688,903</td>
<td>1,753,615</td>
</tr>
<tr>
<td>Including: Household</td>
<td>1,401,821</td>
<td>1,446,887</td>
<td>1,499,971</td>
<td>1,529,187</td>
<td>1,566,277</td>
<td>1,556,003</td>
<td>1,562,485</td>
<td>1,641,904</td>
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<tr>
<td>Non-household</td>
<td>72,706</td>
<td>75,372</td>
<td>81,925</td>
<td>93,923</td>
<td>98,525</td>
<td>97,546</td>
<td>126,418</td>
<td>111,711</td>
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<td>Direct Customer</td>
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<td>9</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>2</td>
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<tr>
<td>Total</td>
<td>1,474,537</td>
<td>1,522,268</td>
<td>1,581,903</td>
<td>1,623,117</td>
<td>1,664,807</td>
<td>1,653,553</td>
<td>1,688,907</td>
<td>1,753,617</td>
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### Annex №3 - Length of Electricity Transmission Lines (km)

<table>
<thead>
<tr>
<th>Voltage Levels/ Years</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<th>2016</th>
<th>2017</th>
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<tbody>
<tr>
<td>500 kV</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Transmission</td>
<td>871</td>
<td>871</td>
<td>871</td>
<td>1,181</td>
<td>1,181</td>
<td>1,138.7</td>
<td>1,149.7</td>
<td>1,149.7</td>
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<tr>
<td>400 kV</td>
<td></td>
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<tr>
<td>Transmission</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>32.6</td>
<td>32.6</td>
<td>32.2</td>
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<tr>
<td>330 kV</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>220 kV</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Transmission</td>
<td>1,635.3</td>
<td>1,410.3</td>
<td>1,410.3</td>
<td>1,666.25</td>
<td>1,783.85</td>
<td>1,611.5</td>
<td>1,608.8</td>
<td>1,625.09</td>
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<tr>
<td>110 kV</td>
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</tr>
<tr>
<td>Transmission</td>
<td>884.8</td>
<td>900.7</td>
<td>921.7</td>
<td>738.3</td>
<td>738.3</td>
<td>940.4</td>
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<td>Distribution</td>
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<td>2,889.5</td>
<td>2,889.5</td>
<td>2,881.5</td>
<td>2,877.8</td>
<td>2,142</td>
<td>2,122</td>
<td>2,032</td>
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<td>35 kV</td>
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<td></td>
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</tr>
<tr>
<td>Transmission</td>
<td>537</td>
<td>574</td>
<td>574</td>
<td>526.43</td>
<td>526.43</td>
<td>509.2</td>
<td>552.61</td>
<td>567.7</td>
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<tr>
<td>Distribution</td>
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<td>2,683.63</td>
<td>2,684.77</td>
<td>2,684.77</td>
<td>2,259.2</td>
<td>2,318</td>
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<td>Including: Overhead</td>
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<td>2,624.9</td>
<td>2,631.6</td>
<td>2,627.9</td>
<td>2,627.9</td>
<td>2,198.7</td>
<td>2,251.7</td>
<td>2,251.5</td>
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<tr>
<td>Cable</td>
<td>53.8</td>
<td>50.55</td>
<td>52.03</td>
<td>56.87</td>
<td>56.87</td>
<td>60.5</td>
<td>66.3</td>
<td>76.595</td>
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<td>6-10 kV</td>
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<td>14,351.3</td>
<td>15,027.4</td>
<td>16,092.49</td>
<td>16,331.83</td>
</tr>
<tr>
<td>Including: Overhead</td>
<td>15,051.9</td>
<td>12,178.6</td>
<td>12,304</td>
<td>12,453</td>
<td>12,453</td>
<td>12,968.9</td>
<td>13,983.84</td>
<td>13,795.07</td>
</tr>
<tr>
<td>Cable</td>
<td>2,662.9</td>
<td>1,837</td>
<td>1,840</td>
<td>1,898.3</td>
<td>1,898.3</td>
<td>2,058.5</td>
<td>2,108.65</td>
<td>2,536.764</td>
</tr>
<tr>
<td>0.4 kV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution</td>
<td>41,058.4</td>
<td>39,509</td>
<td>39,800</td>
<td>39,468.8</td>
<td>39,468.8</td>
<td>39,205.8</td>
<td>38,072.9</td>
<td>38,381.78</td>
</tr>
<tr>
<td>Including: Overhead</td>
<td>37,623.3</td>
<td>37,435</td>
<td>37,590</td>
<td>36,255.9</td>
<td>36,255.9</td>
<td>36,780.9</td>
<td>35,162.6</td>
<td>35,596.15</td>
</tr>
<tr>
<td>Cable</td>
<td>3,435.1</td>
<td>2,074</td>
<td>2,210</td>
<td>3,212.9</td>
<td>3,212.9</td>
<td>2,424.9</td>
<td>2,910.3</td>
<td>3,235.63</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission</td>
<td>6,156.4</td>
<td>3,777.1</td>
<td>3,798.1</td>
<td>4,165.68</td>
<td>4,283.28</td>
<td>4,253.1</td>
<td>4,278.01</td>
<td>4,325.94</td>
</tr>
<tr>
<td>Distribution</td>
<td>64,341.4</td>
<td>59,089.7</td>
<td>59,517.1</td>
<td>59,386.37</td>
<td>59,382.67</td>
<td>58,634.4</td>
<td>58,605.39</td>
<td>59,523.71</td>
</tr>
<tr>
<td>Including: Overhead</td>
<td>55,300.1</td>
<td>52,238.5</td>
<td>52,525.6</td>
<td>51,336.8</td>
<td>51,336.8</td>
<td>51,948.5</td>
<td>53,520.14</td>
<td>53,674.72</td>
</tr>
<tr>
<td>Cable</td>
<td>6,151.8</td>
<td>3,961.6</td>
<td>4,102</td>
<td>5,168.07</td>
<td>5,168.07</td>
<td>4,543.9</td>
<td>5,085.25</td>
<td>5,848.99</td>
</tr>
</tbody>
</table>
Annex №4 - System Peak Load in 2007-2017

![Graph showing system peak load from 2007 to 2017.]

Annex №5 - Electricity Losses in Distribution Network in 2017

<table>
<thead>
<tr>
<th>Losses</th>
<th>Distribution Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Telasi JSC</td>
</tr>
<tr>
<td>Normative (%)</td>
<td>5.34%</td>
</tr>
<tr>
<td>Actual (%)</td>
<td>5.12%</td>
</tr>
<tr>
<td>Actual (mln kWh)</td>
<td>161.18 mln kWh</td>
</tr>
</tbody>
</table>

Annex №6 - State of Metering in Distribution Companies by January 1, 2017

<table>
<thead>
<tr>
<th>№</th>
<th>Companies</th>
<th>Number of Subscribers in 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Subscribers having individual meters</td>
</tr>
<tr>
<td>1</td>
<td>Telasi JSC</td>
<td>564,026</td>
</tr>
<tr>
<td>2</td>
<td>Energo-Pro Georgia JSC²</td>
<td>1,189,589</td>
</tr>
</tbody>
</table>

¹Customers consuming less than 1 kW that do not need metering point
²Subscribers of Energo-Pro Georgia JSC includes subscribers of Kakheti region
³Subscribers of Energo-Pro Georgia JSC receiving electricity with communal meter
Annex №7 – Electricity sector entities by forms of ownership

<table>
<thead>
<tr>
<th></th>
<th>Private ownership</th>
<th>State ownership</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation Licensees</td>
<td>18</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Transmission Licensees</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Distribution Licensees</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Dispatch Licensee</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Annex №8 – Real growth of electricity consumption and GDP in 2004-2017*


Annex №9 – Electricity consumption by regions in total and per person
## Annex №10- Existing Tariffs in Electricity Sector

### Generation Tariffs (Tetri/kWh)

<table>
<thead>
<tr>
<th>Company</th>
<th>Generation Facility</th>
<th>2017</th>
<th>2018-2020</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hydro Power Plants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enguri HPP LLC</td>
<td>Enguri HPP</td>
<td>1.496</td>
<td>1.818</td>
<td>0.322</td>
</tr>
<tr>
<td>Vardnili HPP Cascade LLC</td>
<td>Vardnili HPP Cascade</td>
<td>2.880</td>
<td>4.002</td>
<td>1.122</td>
</tr>
<tr>
<td>Georgian Water and Power LLC</td>
<td>Jinvali HPP</td>
<td>1.830</td>
<td>2.177</td>
<td>0.347</td>
</tr>
<tr>
<td>Energo-pro Georgia JSC</td>
<td>Lajanuri HPP</td>
<td>1.593</td>
<td>1.679</td>
<td>0.086</td>
</tr>
<tr>
<td></td>
<td>Gumati HPP Cascade</td>
<td>2.004</td>
<td>2.209</td>
<td>0.205</td>
</tr>
<tr>
<td></td>
<td>Dzevrula HPP</td>
<td>2.616</td>
<td>1.986</td>
<td>(0.630)</td>
</tr>
<tr>
<td></td>
<td>Rioni HPP</td>
<td>3.301</td>
<td>4.060</td>
<td>0.759</td>
</tr>
<tr>
<td></td>
<td>Shaori HPP</td>
<td>1.933</td>
<td>2.747</td>
<td>0.814</td>
</tr>
<tr>
<td><strong>Thermal Power Plants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mtkvari Energy LLC</td>
<td>9th Unit of Tbilsresi</td>
<td>11.358</td>
<td>11.512</td>
<td>0.154</td>
</tr>
<tr>
<td>Georgian International Energy Corporation LLC</td>
<td>3rd Unit of Tbilsresi</td>
<td>10.963</td>
<td>11.511</td>
<td>0.548</td>
</tr>
<tr>
<td>Georgian International Energy Corporation LLC</td>
<td>4th Unit of Tbilsresi</td>
<td>10.963</td>
<td>11.511</td>
<td>0.548</td>
</tr>
<tr>
<td>G-Power LLC</td>
<td>Gas turbine power plant</td>
<td>10.537</td>
<td>9.431</td>
<td>(1.106)</td>
</tr>
<tr>
<td>Gardabani TPP LLC</td>
<td>Combined cycle of gas turbine</td>
<td>8.056</td>
<td>8.012</td>
<td>(0.044)</td>
</tr>
</tbody>
</table>

### Guaranteed Capacity Fee for Thermal Power Plants (GEL/Day)

<table>
<thead>
<tr>
<th>Company</th>
<th>Generation Facility</th>
<th>2017</th>
<th>2018-2020</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mtkvari Energy LLC</td>
<td>9th Unit of Tbilsresi</td>
<td>66,264</td>
<td>59,630</td>
<td>(6,634)</td>
</tr>
<tr>
<td>Georgian International Energy Corporation LLC</td>
<td>3rd Unit of Tbilsresi</td>
<td>17,513</td>
<td>18,637</td>
<td>1,124</td>
</tr>
<tr>
<td>Georgian International Energy Corporation LLC</td>
<td>4th Unit of Tbilsresi</td>
<td>18,340</td>
<td>20,357</td>
<td>2,017</td>
</tr>
<tr>
<td>G-Power LLC</td>
<td>Gas turbine power plant</td>
<td>42,256</td>
<td>44,874</td>
<td>2,618</td>
</tr>
<tr>
<td>Gardabani TPP LLC</td>
<td>Combined cycle of gas turbine</td>
<td>343,884</td>
<td>385,893</td>
<td>42,009</td>
</tr>
</tbody>
</table>

### Tariffs for Transmission and Dispatch Activities (Tetri/kWh)

<table>
<thead>
<tr>
<th>Company</th>
<th>Activity</th>
<th>2017</th>
<th>2018-2020</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgian State Electrosystem JSC</td>
<td>Dispatch</td>
<td>0.082</td>
<td>0.412</td>
<td>0.330</td>
</tr>
<tr>
<td></td>
<td>Transmission</td>
<td>0.872</td>
<td>1.323</td>
<td>0.451</td>
</tr>
<tr>
<td>Sakrusenergo JSC</td>
<td>Transmission</td>
<td>0.180</td>
<td>0.278</td>
<td>0.098</td>
</tr>
<tr>
<td>Energotrans LLC</td>
<td>Transmission, 500 kV</td>
<td>0.387</td>
<td>0.380</td>
<td>(0.007)</td>
</tr>
<tr>
<td></td>
<td>Transmission, 400 kV</td>
<td>0.496</td>
<td></td>
<td>(0.116)</td>
</tr>
</tbody>
</table>
Electricity Final Consumption Tariffs for 2018-2020 (Tetri / kWh)

- Distribution Tariff
- Weighted Average Price of Electricity, Transmission Tariff***
- Weighted Average Price of Electricity, Dispatch Tariff**
- Weighted Average Price of Electricity, Guaranteed Capacity Charge**
- Weighted Average Price of Electricity, Weighted Average Price of Energy*
# Annex №11 - Existing Household Tariffs in Natural Gas Sector

<table>
<thead>
<tr>
<th>№</th>
<th>Name of Distribution Licensee</th>
<th>Consumption tariffs for household customers without VAT (tetra/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1. KazTransGas Tbilisi LLC</td>
<td>39.113</td>
</tr>
<tr>
<td>2</td>
<td>2. Socar Georgia Gas LLC</td>
<td>48.254</td>
</tr>
<tr>
<td>3</td>
<td>3. Sakorgazi JSC</td>
<td>48.314</td>
</tr>
<tr>
<td>4</td>
<td>4. Visol Petroleum Georgia JSC</td>
<td>44.915</td>
</tr>
<tr>
<td>5</td>
<td>5. Gazmsheni LLC</td>
<td>35.161</td>
</tr>
<tr>
<td>6</td>
<td>6. Energokavshiri JSC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Medium pressure</td>
<td>34.576</td>
</tr>
<tr>
<td></td>
<td>- Low pressure</td>
<td>42.797</td>
</tr>
<tr>
<td>7</td>
<td>7. Gogochuri GP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Medium pressure</td>
<td>35.712</td>
</tr>
<tr>
<td>8</td>
<td>8. Arzu-Gazi LLC</td>
<td>46.964</td>
</tr>
<tr>
<td>9</td>
<td>9. Ambrolaurigazi JSC</td>
<td>44.915</td>
</tr>
<tr>
<td>10</td>
<td>10. Sachkheregazi JSC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Medium pressure</td>
<td>31.836</td>
</tr>
<tr>
<td></td>
<td>- Low pressure</td>
<td>37.287</td>
</tr>
<tr>
<td>11</td>
<td>11. Gama LLC</td>
<td>35.610</td>
</tr>
<tr>
<td>12</td>
<td>12. Kamari M LLC</td>
<td>43.220</td>
</tr>
<tr>
<td>13</td>
<td>13. Varketiliairi LLC</td>
<td>42.797</td>
</tr>
<tr>
<td>14</td>
<td>14. Vake LLC</td>
<td>41.310</td>
</tr>
<tr>
<td>15</td>
<td>15. Didi Digomi LLC</td>
<td>43.136</td>
</tr>
<tr>
<td>16</td>
<td>16. Taba LLC</td>
<td>43.025</td>
</tr>
<tr>
<td>17</td>
<td>17. Energy + LLC</td>
<td>40.848</td>
</tr>
<tr>
<td>18</td>
<td>18. D-V-S LLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Medium pressure</td>
<td>34.873</td>
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<tr>
<td></td>
<td>- Low pressure</td>
<td>41.102</td>
</tr>
<tr>
<td>19</td>
<td>19. Gasko + LLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Medium pressure</td>
<td>34.661</td>
</tr>
<tr>
<td></td>
<td>- Low pressure</td>
<td>45.170</td>
</tr>
<tr>
<td>20</td>
<td>20. Akriani 2006 LLC</td>
<td>43.220</td>
</tr>
<tr>
<td>21</td>
<td>21. Chiraghdani XXI Saukune LLC</td>
<td>42.330</td>
</tr>
<tr>
<td>22</td>
<td>22. Chiraghdani LLC</td>
<td>45.763</td>
</tr>
<tr>
<td>23</td>
<td>23. SGgaz-company LLC</td>
<td>45.085</td>
</tr>
<tr>
<td>24</td>
<td>24. Gaztrans Service LLC</td>
<td>40.678</td>
</tr>
<tr>
<td>25</td>
<td>25. Intergazi LLC</td>
<td>deregulated</td>
</tr>
<tr>
<td>26</td>
<td>26. Mamedi LLC</td>
<td>44.068</td>
</tr>
</tbody>
</table>
Annex №12 – Consumption of drinking water per person in EU countries and Georgia (per liter/per person/within 24 hours)

Annex №13 – VAT in EU countries and in Georgia (%)
Annex №14 - Percentage of non-revenue water in EU countries (%)

Annex №15 - Drinking Water Availability Index in EU countries (%)