

## Georgia's Energy Sector Electricity Market Watch

#### **Highlights of 8M19**

Electricity consumption growth slowed to 2.3% y/y in 8M19, significantly below forecasted numbers as well as growth levels of previous periods. On supply side, hydrogenation decreased by 9.7% y/y due to unfavourable hydrological conditions. Reduced generation created demand on imported electricity despite the low consumption growth rate. As a result, electricity trade deficit widened 80.5% y/y to US\$ 29.6mn in 8M19, and we expect trade deficit to double for the full year of 2019.

The Ministry of Economy revised downwards 2019 electricity consumption growth forecast to 5.7% from initial projection of 13.2%. The revised forecast takes into consideration actual consumption figures of 1H19.

Energy sector was largest FDI recipient in 1H19. FDI in energy sector increased 32% y/y and stood at US\$ 112mn.

Importantly, market deregulation process is evidenced by intensified activities from power traders and direct consumers' increased share in the total electricity consumption mix. The latter increased from 12% of total electricity consumption in 2017 to 21.5% in 8M19, as a result of legislative changes.

Parliament is discussing two energy-related laws - 1) on energy and water supply and 2) on promotion of renewable energy sources. Both laws are expected to be adopted by the end of the year, but the bylaws are set for a longer term.

#### Eva Bochorishvili

Head of Research evabochorishvili@gt.ge +995 322 401 111 ext.8036 Energy

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Georgia |

Mariam Chakhvashvili Senior Analyst mchakhvashvili@gt.ge +995 322 401 111 ext.7897

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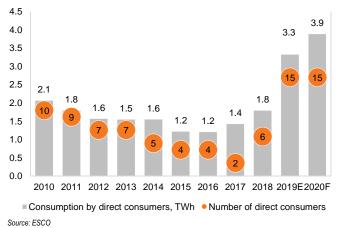


#### General updates on energy market

In 2019, number of players on wholesale energy market reached record high 11 new direct consumers and 10 power traders. In line with planned market deregulation, 11 new companies with average monthly consumption over 5GWh were mandatory registered as direct consumers since May-19. The same also happened in May-18 for companies consuming 15GWh/month or above. As a result of these legislative changes, the number of direct consumers increased to total 15 companies. Moreover, the average monthly consumption of the group tripled from 108GWh in Jan-18 to 334GWh in Jul-19 and their share in overall domestic consumption increased from 12% in 2017 to 21.5% in 8M19.

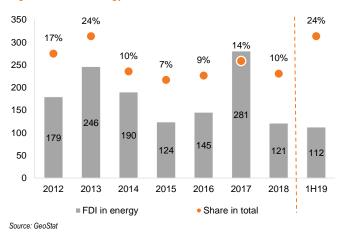
The Direct Consumers buy electricity on the wholesale market and are not subscribers of distribution licensees. At wholesale market, electricity can be purchased from power producers, ESCO and power traders. In 8M19, 10 new companies entered the wholesale energy market as power traders, from which only 3 were actively involved in trading. Despite appearance of power traders on the market, ESCO was still the main provider of energy to the direct consumers (37.1% in 8M18) due to the low balancing energy price in May and June (see figure 10).

Figure 1: Electricity consumption by Direct consumers, TWh



# Energy sector was the largest FDI recipient in 1H19, attracting almost a quarter of total. FDI in energy sector increased 32% y/y to US\$ 112mn in 1H19. FDI flows were mostly directed to Nenskra HPP, Achar Energy-2007 and Energo-pro Georgia projects.

#### Figure 2: FDI in energy sector, US\$ mn





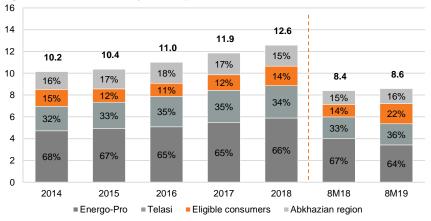
#### Electricity Consumption, Exports, Generation and Imports – 8M19

#### **Domestic consumption**

**Domestic consumption of electricity increased by 2.3% y/y and reached 8.6TWh in 8M19.** The growth is far below expected, as well as last years' similar figures. The growth of electricity consumption over the same period in 2018 and 2017 was 7.7% and 8.2%, respectively. According to revised annual balance of electricity, Ministry of Economy and Sustainable Development reduced annual electricity consumption forecast in 2019 to 13.3TWh, which is 5.7% growth down from initially projected 13.2%. The slowdown in growth is explained by climate conditions and decreased demand from the crypto-currency miners.

Electricity consumption dynamics of certain consumer groups are explained by legislative changes. Consumption by eligible consumers (also known as direct consumers) increased by 61.4% y/y, while distribution licensees' consumption was down 10.5% y/y in 8M19. From the group of distribution licensees Energo-pro Georgia's consumption reduced most (-14.3% y/y), as its several subscribers were registered as direct consumers.

#### Figure 3: Domestic electricity consumption, TWh



Source: ESCO

Note: Kakheti Energy Distribution was purchased by Energo-Pro Georgia in August, 2017

#### **Domestic supply**

**Hydro generation was down by 9.7% y/y in 8M19** due to unfavourable hydrological conditions and accounted for 73.2% of total supply compared to 79.6% in 8M18.

Reduced hydro generation was compensated by increased thermal generation (+35.3% y/y) and imports (+20.5% y/y). In total, electricity from imported sources (both thermal generation and electricity imports) reached 2.4TWh in 8M19, a 26.1% of total supply.

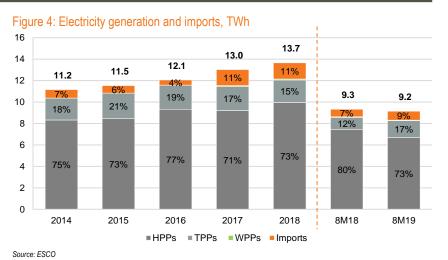
Increased consumption of Abkhazian region (+9.0% y/y) fully absorbed Enguri and Vardnili's generation of 4M19 and created need of electricity imports from Russia through Salkhino interconnection line during February and March.

**The guaranteed capacity fee averaged** USc 0.5/kWh over 8M19 (-1.1% y/y). The reduction of the fee is explained by planned maintenance works on all thermal power plans during the summer months.

#### Table 1: Demand growth breakdown, 8M19

Consumer	Growth rate, y/y	Share in consumption				
Domestic consumption	+2.3%	100.0%				
Abkhazian region	+9.0%	16.0%				
Eligible consumers	+61.5%	21.5%				
Distribution	-10.5%	62.5%				
Energo-Pro Georgia	-14.3%	39.8%				
Telasi	-2.9%	22.7%				
Source: ESCO						





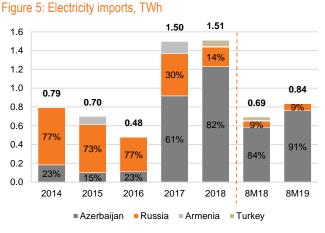
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Supply source	Growth rate, y/y	Share in supply			
Total Supply	-1.8%	100.0%			
Imports	+20.5%	9.1%			
Domestic generation	-3.6%	90.9%			
TPPs	+35.3%	17.0%			
WPPs	+2.3%	0.6%			
HPPs	-9.7%	73.2%			
Enguri and Vardnili	-16.5%	33.6%			
Other regulated HPPs	-8.1%	21.1%			
Deregulated HPPs	+3.7%	18.5%			

#### Import of electricity - 8M19

**Import of electricity increased by 20.5% y/y in 8M19.** Notably, for the first time this year electricity was imported in July along with August – the months generally considered as most suitable for export. Azerbaijan was the main provider of import with 91.1% share in total, the rest was imported from Russia (8.9% of total) and was fully absorbed by Abkhazian region. The cost of import increased by 9.1% y/y and reached US\$ 38.6mn in 8M19.

**Average price of electricity imported in Georgia** was down by 9.5% y/y to USc 4.6/kWh in 8M19. The drop in imported price is explained by cheap electricity imports from Russia to supply Abkhazian region during Feb-19 and Mar-19.

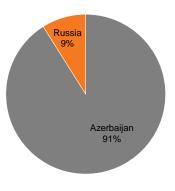


Source: ESCO

**ESCO** was the largest importer of electricity in 8M19. BFDC Georgia – one of the newly registered eligible consumers – imported mere 3.8% of total imports for its own consumption.

**Ministry of Economy forecasts electricity imports in 2019 to reach 1.6TWh, a 9.0% y/y** increase from already high base of 2017-18. Notably reasons of import needs varies every year, in 2017 it was related to Enguri's temporary closure, in 2018 it was driven by increased consumption and 2019 imports reflects reduced local hydro generation.

Figure 6: Breakdown of electricity imports, 8M19



Source: ESCO



#### Electricity exports

**May and June were the only export months in 2019.** Exports of electricity more than halved in 8M19 (-59.1% y/y) and accounted for mere 2.6% of total electricity supply (compared to 6.3% in 2018). Continues reduction in exports over years is explained by increased local consumption and poor generation. Notably, for the first time in 2019 electricity was imported in July also, while generally July is assumed to be an export month.

**Turkey was the largest export direction for Georgia (46.9% of total).** Exporters to Turkey were Georgian Urban Energy and Achar Energy-2007 - exporting electricity based on their long term Transmission and Dispatch Agreements, and Bakhvi Hydro Power.

Georgian International Energy Corporation exported electricity to Armenia, while ESCO was the sole exporter of energy to Russia and Azerbaijan.

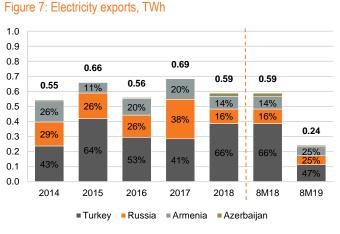
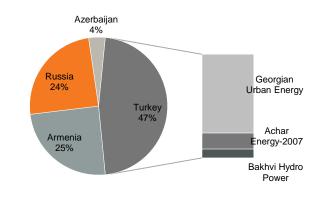


Figure 8: Breakdown of electricity exports, 8M19

Source: ESCO



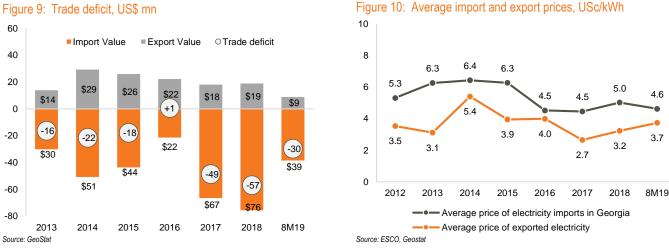
Source: ESCO

**Electricity transit from Azerbaijan to Turkey reached 61.4GWh in 8M19.** The transit amount increased 4.6 times compared to 8M18, but is far below the high transit levels of 2016 and 2017.

Average price of exported electricity from Georgia increased by 15.7% y/y in 8M19, explained by change in export mix in favour of more expensive markets. Despite the increase of average export price, the limited volume of exports resulted in 52.7% y/y drop of export revenues in 8M19 to only US\$ 9.0mn.

**Trade deficit in electricity is expected at record high in 2019.** In 8M19, electricity exports reached mere 0.2TWh (-59.1% y/y), while imports were up by 20.5% y/y to 0.8TWh. Furthermore, according to the revised annual balance of electricity no further exports are expected, while imports forecasted at 1.6TWh in 2019. This means that the trade deficit will reach record high 1.4TWh in 2019. In value terms, the electricity trade deficit was US\$ 29.6 mn in 8M19, and will likely double for the full year.



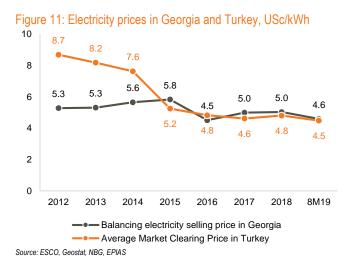


#### Electricity Prices in Georgia and Turkey - 8M19

Balancing electricity price in Georgia was USc 4.6/kWh (-8.9% y/y) in 8M19. Notably, the price of balancing electricity (ESCO's selling price) is frequently regarded as wholesale market price in Georgia (at which power generators and importers sell electricity). The latter is not public as bilateral contracts are confidential. Currently, it is less desirable to treat the balancing energy price as wholesale market price as number of players as well as trading on wholesale market increased this year.

The slight decrease of the average balancing price in 8M19 is attributable to the access of ESCO to the Enguri's cheap electricity and consequently decreased average price of electricity. An 18.6% of total electricity supplied to the grid was traded through the market operator (ESCO), with the rest traded through bilateral contracts.

Turkish electricity prices averaged USc 4.5/kWh in 8M19 (-2% y/y).





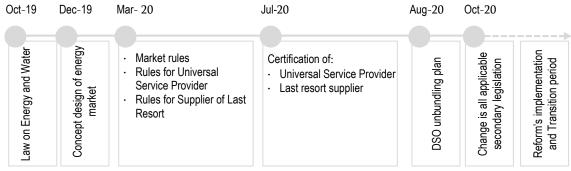
#### Draft law on Energy

**New Energy law is currently discussed at the Parliament.** The adoption of the law is expected in Oct-19. Draft law mainly replicates the EU rules and regulations in energy sector and meets the obligations undertaken by Georgia under Energy Community membership.

Draft law defines general principles of market reform and sets deadlines for its implementation. The energy sector reform aims to reach competitive and transparent energy market, which will ensure fair price and be attractive for investors. Importantly, that draft law defines general framework of the upcoming markets and gives guidelines for transition period, but does not give answers to most interesting topics for market participants: what will be the trading principles in the future, how the PPAs will be integrated into the market, who will be classified as vulnerable consumer and what portion of the end-user tariff will remain regulated.

Answers to these questions are supposed to be found in the secondary legislation subject to approval within the year after adoption of the law. Diagram below presents adoption timeline for key documents under draft energy law, while detailed changes in the legislation are provided in next pages.

#### Diagram 1: timeline for adoption of key documents under draft energy law



Source: Parliament of Georgia, Galt & Taggart Research

#### Below listed the most significant changes envisaged in draft Energy Law.

## Delivery and trading of energy should be separated, which requires reorganisation of some companies.

Companies responsible for physical delivery of energy are forbidden to produce and sell electricity. The activities for physical supply of electricity, like transmission and distribution of energy will remain regulated activities, while energy trade will become fully deregulated activity. To achieve this separation of business activities, companies currently holding transmission and distribution licenses should be reorganised. The draft law envisages up to 1 year period for the reorganisation procedures.

**Reorganisation requirement of the draft law will impact** Georgian State Electrosystem, Energo-trans, SakRusEnergo, Telasi and Energo-pro Georgia. The latter two companies should unbundle their current activities into two parts: 1) distribution – physical delivery of electricity at regulated price and 2) supply – sales of electricity, which might have de-regulated price. At the initial stage of reform Energo-

New law on energy is expected to be adopted in Oct-19

Reform of energy market will be done gradually

Bylaws should be adopted in a year

Unbundling- Natural monopolies do not have right of commercial activities

Transmission and distribution companies cannot simultaneously generate, trade and supply electricity

Energo-pro Georgia and Telasi should prepare the reorganisation plan within 9 months after adoption of energy law



pro Georgia and Telasi might get status of Universal Service Provider to supply electricity to the household and small companies (*The definition of Universal Service Provider is given below*). Importantly, both Energo-pro Georgia and Telasi are in the reorganisation process currently and they already meet the second requirement of the draft law - separation of generation activity from others.

#### Draft law defines new participants of both wholesale and retail markets:

- <u>Power suppliers</u> sell electricity or natural gas to end-users, including households.
- <u>Universal service providers</u> sell electricity to household and small companies within the predefined geographical area. Their activity is regulated in order to ensure the secured supply of electricity. At initial stage, the draft law allows GNERC to regulate the selling tariff of universal service provider, but there should be predefined deadline when the tariffs become free from regulations, but transparent and accessible for end-users. Probably, Energo-pro Georgia's and Telasi's affiliated companies will be assigned to fulfil this function.
- <u>Supplier of last resort is supplying electricity to the consumers, if only the contractor of that particular consumer is unable to supply electricity. The supplier of last resort is chosen by the government of Georgia based on transparent tender procedures, and regulated by GNERC. The draft law envisages defining the rules of operations and tariff calculation.</u>
- <u>Energy traders</u> operate on wholesale energy market and sell electricity to wholesale consumers, including eligible consumers.
- Electricity <u>producers</u> and <u>eligible consumers</u> (also known as direct consumers) will still remain participants of wholesale energy market. Any legal entity can voluntarily register as eligible consumer, while mandatory registration threshold will be defined by the Government.
- In addition to universal supplier, the law defines certain incentive mechanisms and subsidies to protect <u>vulnerable customers</u>, for only predefined short-term periods. In this regard, the government should define vulnerable consumers.

**In order to encourage production**, the law permits both the encouragement of renewable energy and the tendering of capacity by the government. The procedures for both mechanisms should be detailed in the bylaws. A draft law on incentives for renewable energy is also under discussion in parliament.

## Wholesale should be done through organized markets and participants should be held responsible for the imbalances.

The draft law sets out the general principles of electricity trading, as well as the major participants in the retail and wholesale markets, and introduces the notion of an authority responsible for imbalances. However, the law does not describe the details of market organization and settlement. For this purpose, the draft law instructs the government and GNERC to develop the concept of the electricity market model and the rules of the electricity market within 2 to 5 months of the law's adoption.

The first document on the concept of the energy market model was approved by the Ministry of Economy on December 28, 2018, the main part of which is incorporated in the new draft law on energy. According to this version of the **Power Suppliers** sell energy to end-users

**Universal service providers** is a regulated company selling energy to household and small businesses

**Supplier of last resort is** consumer protection mechanism from the supplier risks

Energy traders trade on wholesale energy markets

**Producers** generate electricity

*Eligible consumers* are companies directly trading on wholesale energy markets

*Vulnerable consumers* - the group of consumers to which the state subsidy applies

The wholesale electricity trade will take place through organised markets

Day-ahead market will be fully functional in 2022, according to preliminary concept design of electricity market

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concept, in addition to the bilateral contract market, the daily trading and balancing markets will also be functional in Georgia. According to the concept, the rules of operation of these markets will be established in 2019, and the full launch of the organized daily trading platform is planned in 2022. The government is required to prepare an updated and highly detailed document on the concept of the energy market model within two months of the new law coming into force.

The draft Energy law also covers the natural gas and water supply sectors. Similar reforms in the natural gas sector are planned, though relatively long deadlines are set for the reform, and the bylaws need to be fully approved in 2-2.5 years. There are no plans for changes in the water supply sector, however, as this document completely replaces the old law, water supply norms have also been moved into the new law.

#### Regulatory impact assessment of the draft energy law

The reform will reduce the average consumer tariff by 1% annually until 2025. The draft law is accompanied by the results of a study conducted by USAID. According to the study, export potential increases and average consumer tariff is reduced in case of reform. In particular, by 2025 an additional GEL 1mn will be exported, and the consumer tariff, thanks to the reforms, will be reduced by 1% on average annually until 2025. It is noteworthy that without reform, USAID forecasts a 1% increase in consumer tariffs for the same period.

The wholesale price of electricity may increase at the initial stage of the reform, with a long-term decline expected. According to USAID research, competition in the wholesale market will reduce wholesale electricity prices. International experience shows this too. In our opinion, this decrease in wholesale prices will occur only after new power plants generate additional energy and create market competition on the supply side. As long as the system is deficient and growing consumption is satisfied with imports, we believe the wholesale price of electricity will increase. This expectation is further reinforced by the fact that, according to the draft law, the inexpensive Enguri resource is likely to be fully distributed only to the consumer segment. Georgia | Energy 8M19 October 3, 2019

Roadmap for natural gas sector reform is stretched over next 5 years, including 2 years for preparation of secondary legislation

Households will see decrease in their electricity tariffs annually by average 1%

The wholesale price of electricity may increase at the initial stage of the reform, with a long-term decline expected



#### Draft law on promotion of the production and use of energy from renewable sources

Parliament is expected to approve the law in October 2019. The draft law is consistent and largely repeats EU directives and regulations.

The law regulates the issues of energy production from renewable sources. Renewable energy is energy derived from non-renewable non-fossil sources, namely wind, solar, hydropower, biomass, aerothermal, geothermal, hydrothermal and ocean energy, gas derived from the decomposition of organic material in landfills, wastewater treatment plants and biogas.

The law sets national targets for total energy consumption and transport. According to the draft law, by 2030 Georgia should increase its share of renewable energy in total energy consumption from 29.5% (to 2019) to 35%; and this share of transport should make up at least 10%. The total energy consumption in addition to electricity consumption includes consumption of natural gas, petroleum products (gasoline, diesel, diesel), coal, biofuels, etc. In order to achieve the target, the government should, within one year of the adoption of the law, develop a national action plan detailing activities, deadlines, responsible persons, budget, sources of funding, etc.

The draft law allows for the introduction of incentive mechanisms. Incentives can be implemented in a variety of ways, including: tax reliefs, direct price support schemes, fixed and variable premium payments, including feed-in tariffs, contract for differences, green certificates, auctions, etc. The government is given a one-year deadline for approval of the precise list of incentives and implementation conditions; And for other related bylaws, the government, the ministry and the GNERC are given up to two years.

Minimum requirements, norms, certification rules, monitoring rules, etc. for micro power plants, biofuels, biogas, biofuels and heat pumps must be approved within 2 years after the law is adopted.

About EUR 75mn have already been mobilized from donors to finance the reforms envisaged by the draft law. However, the full budget needed for reform will be known after the National Action Plan is approved. According to the explanatory note to the law, a number of grants or low-interest loans have been earmarked to support energy reforms and donors are also ready to allocate additional funds. Notably, from mentioned support, EUR 2mn from European Commission in the form of grant and total of EUR 74mn from KfW and AFD in the form of budget-support loans are already allocated.

**Renewable energy-** hydro, wind, solar, geothermal, hydrothermal energies, biomass...

Targets for 2030:

35% - The share of energy from renewable sources in gross final consumption
10% - The share of energy from renewable sources in transport

#### **Promotion mechanisms**

- Feed-in tariff
- Premium payments
- Green certificates
- Contract for differences
- Special RE auctions
- Others

EUR 76mn from donors to be invested in reforms



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#### Table 3: Electricity prices in Georgia and Turkey, USc/kWh

	Sep-18	Oct-18	Nov-18	Dec-18	2018	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	8M19
Balancing electricity price in Georgia	4.5	5.3	5.1	5.3	5.0	5.1	5.2	5.0	4.8	2.7	2.6	4.7	4.9	4.6
% change y/y	-7%	-4%	-3%	+9%	+1%	+1%	-3%	+0%	-3%	-50%	-50%	+30%	+4%	-8%
Average price of electricity imports in Georgia	4.2	5.1	5.0	5.2	5.0	5.0	4.5	3.6	5.0	NM	5.5	5.2	5.2	4.6
% change y/y	-13%	-3%	+4%	+7%	+13%	-3%	-14%	-27%	-12%	-	-4%	-13%	+12%	-10%
Average price of electricity exports from Georgia	5.9	7.5	-	-	3.2	-	-	NM	NM	4.0	3.2	7.2	NM	3.7
% change y/y	+21%	+43%	-	-	+22%	-	-	-	-	-31%	-44%	+20%	-	+16%
Market clearing price in Turkey	5.2	5.5	5.5	5.0	4.8	4.4	5.0	4.8	3.4	3.4	4.1	5.4	5.4	4.5
% change y/y	-2%	+20%	+19%	+21%	+4%	-11%	+6%	+16%	-29%	-18%	+1%	+23%	+2%	-2%

Source: ESCO, Geostat, I/BG, EPIAS Note: when export or import is insignificant the average tariff is not-meaningful (NM)



#### Table 4: Electricity Balance, GWh

	Sep-18	Oct-18	Nov-18	Dec-18	2018	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	8M19
Domestic consumption, total	954	977	1,077	1,171	12,577	1,148	1,036	1,137	1,010	984	1,064	1,107	1,103	8,589
% change y/y	+4%	+3%	+4%	+1%	+6.1%	-2%	-2%	+2.0%	+3.2%	+2.4%	+8.6%	+1.5%	+5.3%	+2.3%
Of which:														
- Abkhazian Region	105	122	193	243	1,922	254	221	242	187	114	108	117	128	1,371
% change y/y	+4%	-10%	-1%	+1%	-4.0%	+3%	+2%	+17%	+26%	+13%	+7%	+1%	+6%	+9.0%
- Eligible consumers	160	170	159	159	1,794	144	129	154	144	313	324	334	308	1,850
% change y/y	+32%	+40%	+49%	+56%	+25.7%	+33%	+24%	+34%	+31%	+74%	+84%	+84%	+80%	+61.5%
- Distribution Companies	688	685	725	769	8,862	750	686	741	680	557	631	656	666	5,368
% change y/y	-1%	-1%	-1%	-6%	+5.2%	-8%	-7%	-6%	-6%	-18%	-10%	-17%	-12%	-10.5%
Of which:														
- Energo-Pro Georgia	468	465	477	492	5,891	481	445	488	458	341	379	404	424	3,421
% change y/y	+3%	+2%	-1%	-7%	+12.1%	-8%	-6%	-6%	-5%	-27%	-20%	-23%	-19%	-14.3%
-Telasi	221	220	248	276	2,970	269	241	253	221	216	252	252	243	1,947
% change y/y	-8%	-6%	-1%	-5%	+1.2%	-8%	-8%	-7%	-7%	+1%	+12%	-7%	+3%	-2.9%
Domestic Generation,	849	783	900	986	12,149	1,011	939	974	966	1,156	1,198	1,055	1,020	8,319
total										,	,	,		
% change y/y	+3%	-5%	-7%	-9%	+5.4%	-0%	+0%	-2%	-9%	-0%	-1%	-17%	+4%	-3.6%
Of which:								= 10		4 4 5 9			074	
- HPPs	681	578	563	705	9,949	601	511	540	801	1,150	1,185	1,043	874	6,705
% change y/y	-4%	-1%	-15%	+3%	+8.0%	-11%	-14%	-30%	-21%	+7%	-1%	-17%	+6%	-9.7%
- TPPs	160	198	331	275	2,115	405	420	426	159 +348	0	7 +141	3	138	1,557
% change y/y	+50%	-17%	+9%	-30%	-5.3%	+22%	+26%	+98%	%	-100%	%	-52%	-8%	+35.3%
- WPPs	8	7	7	6	84	6	7	8	7	6	5	9	8	57
% change y/y	18%	4%	33%	11%	-4.0%	-18%	18%	17%	-27%	17%	6%	11%	9%	+2.3%
Imports	139	230	219	228	1,509	182	142	209	81	0	8	94	119	835
% change y/y	+5%	+46%	+99%	+69%	+0.8%	-10%	-15%	+30%	+621 %	-99%	+29%	NM	+20%	+20.5%
Exports	0	0		-	589	-	0	0	0	134	100	6	0	241
% change y/y	N/A	N/A	N/A	N/A	-14.2%	N/A	N/A	N/A	N/A	-33%	-49%	-95%	N/A	-59.1%
Net Export/Import	(139)	(229)	(219)	(228)	(920)	(182)	(142)	(209)	(81)	134	92	(88)	(119)	(595)
Transit	-	-	108	112	13	-	9	6	9	-	-	-	38	61
% change y/y	N/A	N/A	+373%	+113%	-94.7%	N/A	-33%	N/A	N/A	N/A	N/A	N/A		+356.8%



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#### Head of Research

Eva Bochorishvili | evabochorishvili@gt.ge

Head of Macroeconomic Analysis and Forecasting Lasha Kavtaradze | lashakavtaradze@gt.ge

Head of Analytics Giorgi Iremashvili | giremashvili@gt.ge

Head of Sector Research Bachana Shengelia | bshengelia@gt.ge

Senior Analyst Mariam Chakhvashvili | mchakhvashvili@gt.ge

Senior Analyst Kakha Samkurashvili | ksamkurashvili@gt.ge

Senior Analyst Ana Nachkebia | anachkebia@gt.ge

Analyst Tatia Mamrikishvili | tmamrikishvili@gt.ge

Analyst

Nino Peranidze | ninoperanidze@gt.ge

Analyst Nika Megutnishvili | nmegutnishvili@gt.ge Address: 79 D. Agmashenebeli Avenue, Tbilisi 0102, Georgia Tel: + (995) 32 2401 111 Email: research@gt.ge