

Georgia's Energy Sector **Electricity Market Watch**

Georgia | Energy Summary of 2019 January 30, 2020

Highlights of 2019

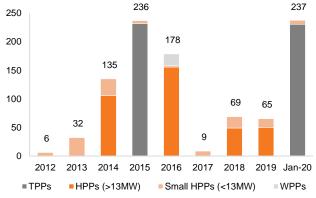
Electricity trade deficit widened by 24.2% y/y to US\$ 70.5mn in 2019. In 2019, electricity consumption increased by 1.4%, while hydro generation was down by 10.1% due to unfavourable hydrological conditions. Under reduced hydro generation, local demand on electricity was met by increased imports (+7.8% y/y) and thermal generation (+34.3% y/y), additionally the exports were down by 58.8% y/y. In overall, cost of imported electricity amounted to US\$ 78.3mn (+3.4% y/y), while export revenue was mere US\$ 7.8mn. Consequently, the electricity trade deficit widened by 24.5% y/y and reached a historic maximum of US\$ 70.5mn.

Electricity consumption in Georgia is expected to grow by 5.0% in 2020. Ministry of Economy and Sustainable Development approved annual forecasted balance of electricity on December 28, 2019. According to the forecasted annual balance, 72.6% of total demand on electricity in 2020 will be met by hydro generation, 18.2% by thermal power plants, 0.6% by wind generation and 8.6% by imports. The forecast defined May, June, July and August as potential export months of 2020.

Georgia Capital purchased Qartli Wind Farm and Hydrolea Ltd. Georgia Capital paid US\$ 14.4mn to purchase the sole operational wind power plant (20.6MW) in Georgia, constructed by state owned company Georgian Energy Development Fund. During transaction the PPA tariff was reduced from USc 6.89/kWh to USc 6.5/kWh. Equity transaction cost of Hydrolea with its 4 HPPs - 3 operational (21MMW) and 1 greenfield project (19MW) – was up to US\$23.3mn. Other than these, renewable energy direction of Georgia Capital holds 220MW operational HPPs and up to 350MW wind and hydro projects under development.

In 2019 and beginning of 2020, 9 hydro power plants were commissioned, with a total capacity of 72 MW. The largest of them were Mestiachala 1&2 (50MW in total) and the rest were small HPPs with average capacity of 3.5MW. Additionally, 230MW Gardabani-2 thermal power plant was put into operation by end of 2019.

Figure 1: Installed capacity additions, MW



Source: ESCO, GSE

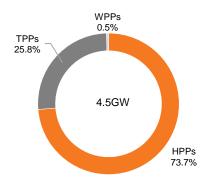
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Figure 2: Installed capacity as of Jan-20



Source: ESCO, GSE



Tariff modifications

GNERC made significant tariff modifications for TPPs, Enguri, Vardnili and Georgian State Electrosystem. Moreover, GNERC approved natural gas tariff for residential users by end of 2019.

Tariffs for Enguri and Vardnili have been reduced due to relocation of planned renovations of 2019 to 2021-22. The Enguri tariff decreased by 25.3% from 1.818 Tetri/kWh to 1.358 Tetri/kWh and Vardnili's tariff almost halved from 4.002 Tetri/kWh to 2.206 Tetri/kWh. According to the GNERC methodology, the tariff for the regulated companies operating in the electricity sector is set for three years period and their intermediate revision happens only if reality is significantly deviated from the initial investment plan. The reason behind the 2020 tariff reduction was the postponed rehabilitation works on Enguri's tunnel and Vardnili's electro-mechanical equipment, originally planned for 2019 and postponed until 2021 or 2022.

Figure 3: Tariffs of regulated HPPs for 2020, Tetri/kWh

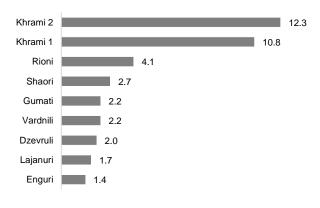
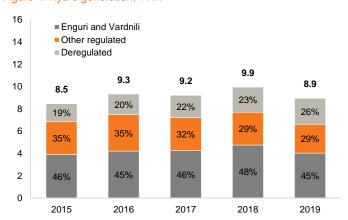


Figure 4: Hydro generation, TWh



Source: GNERC Source: ESCO

The decline in the Enguri's tariff will also affect the prices on balancing market. Enguri HPP has the smallest regulated tariff on the market, which, according to current market rules, is used as reference price of balancing electricity, purchased by the ESCO from deregulated small HPPs during May-August period. Respectively, power plants not having direct purchaser will receive 1.358 Tetri/kWh from ESCO (instead of 1.818 Tetri/kWh) during May-August period of 2020. Notably, September-April reference price was also changed recently but in opposite direction – increased by 15.9% y/y to 12.304 Tetri/kWh.

Transmission fee of the Georgian State Electrosystem was reduced by 23.4% y/y. The tariff for 2020 is set at 1.013 Tetri per kWh, down from the 1.323 Tetri/kWh as in 2018-19. This tariff, along with other service charges, will be paid by direct consumers, exporters and distribution companies. The reduction of this tariff will effect the total service charges and decrease it by 12.9%.

Table 1: Service fees for 2020, Tetri/kWh								
Dispatch fee (GSE)	0.412							
Transmission fee (GSE)	1.013							
Transmission fee (SakRusEnergo)	0.278							
Transmission fee (EnergoTrans)	0.380							
ESCO service fee	0.019							
Total service fees	2.102							



<u>Tariffs for thermal power plants were set for 2020-22.</u> Thermal power plants have two sources of income – tariff for generated electricity and guaranteed capacity fee:

- 1) The methodology for generated electricity tariff calculation changed from fixed annual tariffs to fluctuate monthly ones, but the principle of covering only variable costs remained the same. Notably, gas purchase tariff was set by GNERC at US\$ 143 per 1,000 m³, as it was in previous tariff period. Thus, radical changes in these tariffs are not expected, only a slight increase might be observed in light of currency fluctuations.
- 2) With a guaranteed capacity fee, the investor pays back the investment costs and gets predefined profit margin. On the other hand it is a source of reserve for the system. Guaranteed capacity fee is received by TPPs for its readiness to produce electricity upon dispatcher's command. Guaranteed capacity charges increased for all five power plants, by 25.8% y/y for 3rd and 4th blocks, by 5.3% y/y for Gardabani and insignificantly for Mtkvari Energy and G-Power. According to preliminary data, in 2020 the thermal power plants will receive a total of GEL 170.5mn as guaranteed capacity. This amount is paid by consumers and exporters in proportion to the electricity consumed.

Importantly, the new Gardabani-2 Thermal Power Plant will operate under a different tariff regime and will not be a guaranteed capacity supplier. Its source of income is a 14-year guaranteed power purchase agreement at USc 5.5/kWh for 1,200kWh annual generation.

Figure 5: Guaranteed capacity daily payments, GEL '000

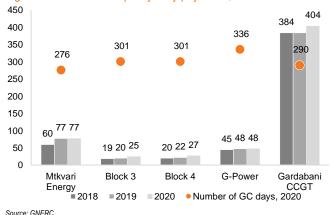
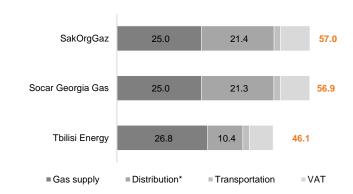


Figure 6: residential tariffs of natural gas, 2020-22, Tetri/m3



Source: GNERC

Note: Distribution tariffs for SOCAR Georgia and SakOrgGas were approved only until July 1, 2020, due to ongoing negotiations with the government regarding the investments reflection into the tariff.

Consumer tariffs for natural gas remained unchanged for 2020-22. Tariff per m³ of consumed natural gas was set at 46.139 Tetri for Tbilisi energy, at 56.928 Tetri for SOCAR Georgia and 56.99 Tetri for SakOrgGas. These 3 companies account for 90% of total supply, while the remaining 10% of natural gas is supplied by 23 different distribution companies, such as Telavgaz, Varketilair, etc.



Electricity Consumption, Exports, Generation and Imports – 2019

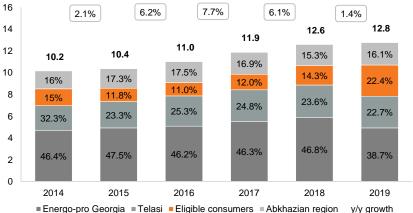
Domestic consumption

Domestic consumption of electricity increased by 1.4% y/y and reached 12.8TWh in 2019. The growth is far below expected, as well as last years' similar figures. The slowdown in growth is mainly explained by climate conditions. Additionally, a 7.8% decrease in Georgian Manganese electricity consumption reduced overall consumption growth by 0.7 percentage points.

Electricity consumption dynamics of certain consumer groups are explained by legislative changes. Consumption by eligible consumers (also known as direct consumers) increased by 59.6% y/y, while distribution licensees' consumption was down 11.6% y/y in 2019. From the group of distribution licensees, Energo-pro Georgia's consumption reduced the most (-16.3% y/y), as its several subscribers were registered as direct consumers. In line with market deregulation, started in 2018, all companies with average monthly consumption over 5GWh were mandatory registered as direct consumers. As a result, the number of direct consumers increased from 2 to total 15 companies. Moreover, their share in overall domestic consumption increased from 12.0% in 2017 to 22.4% in 2019.

ESCO was the main provider of energy to the direct consumers (c. 40% in 10M19) due to the low balancing energy price in May and June (see Table 4). Only 3 out of 10 registered power traders in 2019 were actively involved in trading with mere 3% share on overall power trades. We expect power traders to become more active on the market after enforcement of all the changes envisaged in new energy law.

Figure 7: Domestic electricity consumption, TWh



Source: ESCO

Table 2: Demand growth breakdown, 2019

Consumer	Growth rate, y/y	Share in consumption				
Domestic consumption	+1.4%	100.0%				
Abkhazian region	+7.2%	16.1%				
Eligible consumers	+59.6%	22.4%				
Distribution	-11.6%	61.4%				
Energo-Pro Georgia	-16.3%	38.7%				
Telasi	-2.3%	22.7%				

Source: ESCO

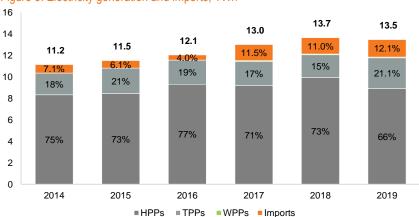


Domestic supply

Despite the slowdown in consumption growth, electricity imports and thermal generation increased by 7.8% y/y and 34.3% y/y, respectively. This growth is associated to 10.1% y/y decrease in hydro generation, attributable to bad hydrological conditions. In 2019, share of hydro generation in total supply was 10-year low 66.3%.

Increased consumption of Abkhazian region (+7.8% y/y) absorbed 45.0% of Enguri and Vardnili's generation in 2019 and created need of electricity imports from Russia through Salkhino interconnection line during February, March and December.

Figure 8: Electricity generation and imports, TWh



Source: ESCO

Table 3: Supply growth breakdown, 2019

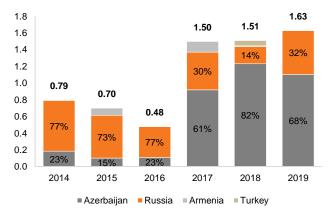
Growth rate, y/y	Share in supply			
-1.2%	100.0%			
+7.8%	12.1%			
-2.3%	87.9%			
+34.3%	21.1%			
+.5%	0.6%			
-10.1%	66.3%			
-15.3%	29.9%			
-11.6%	19.2%			
+2.7%	17.2%			
	rate, y/y -1.2% +7.8% -2.3% +34.3% +.5% -10.1% -15.3% -11.6%			

Source: ESCO

Electricity import, export and transit

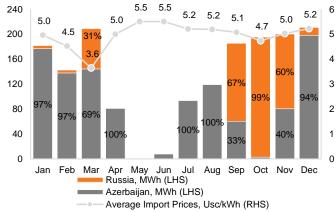
Import of electricity increased by 7.8% y/y and reached 1.6TWh in 2019. Notably, for the first time this year electricity was imported in July along with August - the months generally considered as most suitable for export. A 68% of electricity was imported from Azerbaijan and the rest came from Russia (32% of total).

Figure 9: Electricity imports, TWh



Source: ESCO

Figure 10: Electricity import dynamics and average monthly prices, 2019



Source: ESCO



Trade deficit widened by 24.2% y/y and reached its record high of US\$ 70.5mn in 2019. The cost of import increased by 3.4% y/y and reached US\$ 78.3mn (on average USc 4.8/kWh), from which c. US\$22mn was spent on imports from Russia. On the other side, revenue from electricity exports was 10-year low US\$ 7.8mn. A 58.8% annual decrease of electricity exports to mere 0.2TWh is explained by deficit on local market and comparatively low profitability of export markets.

For the first time in 2019, electricity was included in the list of top-10 imported products. Its share in the country's total imports was 0.86% in 2019 and has been in this range (0.8%-0.9%) since 2017.

Figure 11: Trade deficit, US\$ mn

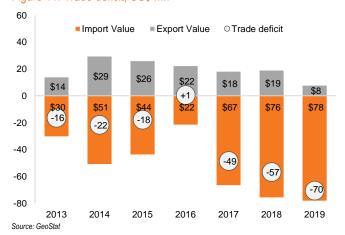
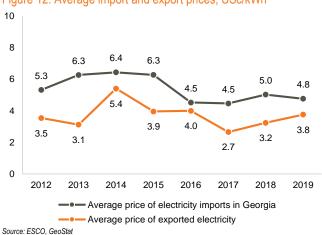


Figure 12: Average import and export prices, USc/kWh



Electricity transit from Azerbaijan to Turkey reached 136.2GWh in 2019. The transit amount increased 10 times compared to 2018, but is far below the high transit levels of 2016 and 2017.

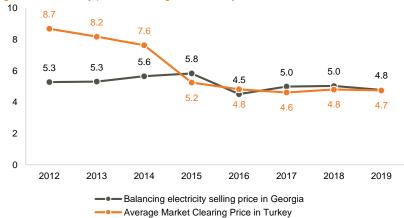


Electricity Prices in Georgia and Turkey –2019

Balancing electricity price in Georgia was USc 4.8/kWh (-5.0% y/y) in 2019. The slight decrease of the average balancing price is attributable to the access of ESCO to the Enguri's cheap electricity and consequently decreased average price of electricity. A 21.4% 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 4.7/kWh in 2019 (-1.3% y/y). Notably, in May and June, the main export months for Georgia, average electricity prices in Turkey were lower, USc 3.4/kWh and USc 4.1/kWh, respectively. This partially explains the lowered export amount to Turkey.

Figure 13: Electricity prices in Georgia and Turkey, USc/kWh



Source: ESCO, GeoStat, NBG, EPIAS

Table 4: Electricity prices in Georgia and Turkey, USc/kWh

	2018	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	2019
Balancing electricity price in Georgia	5.0	5.1	5.2	5.0	4.8	2.7	2.6	4.7	4.9	5.0	5.0	5.2	5.1	4.8
% change y/y	+1%	+1%	-3%	+0%	-3%	-50%	-50%	+30%	+4%	+12%	-6%	+2%	-4%	-5.0%
Average price of electricity imports in Georgia	5.0	5.0	4.5	3.6	5.0	5.5	5.5	5.2	5.2	5.1	4.7	5.0	5.2	4.8
% change y/y	+13%	-3%	-14%	-27%	-12%	-5%	-4%	-13%	+12%	+20%	-7%	+1%	-0%	-4.1%
Average price of electricity exports from Georgia	3.2	-	-	6.0	1.2	3.0	3.2	5.2	5.5	1.7	5.5	5.5	-	3.2
% change y/y	+22%	-	-	-	-59%	-8%	+1%	+52%	-7%	-71.0%	-26%	-	-	-0.4%
Market clearing price in Turkey	4.8	4.4	5.0	4.8	3.4	3.4	4.1	5.4	5.4	5.3	5.1	5.3	5.4	4.7
% change y/y	+4%	-11%	+6%	+16%	-29%	-18%	+1%	+23%	+1.9%	+1.0%	-7%	-4%	+9%	-0.3%

Source: ESCO, GeoStat, NBG, EPIAS

Note: when export or import is insignificant the average tariff is not-meaningful (NM)



Table 5: Electricity Balance, GWh

	2018	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	2019
Domestic consumption, total	12,577	1,148	1,036	1,137	1,010	984	1,064	1,107	1,103	971	958	1,068	1,173	12,759
% change y/y	+6.1%	-2%	-2%	+2%	+3%	+2%	+9%	+1.5%	+5.3%	+1.8%	-1.9%	-0.8%	+0.2%	+1.4%
Of which:														
- Abkhazian Region	1,922	254	221	242	187	114	108	117	128	115	126	197	251	2,060
% change y/y	-4.0%	+3%	+2%	+17%	+26%	+13%	+7%	+1%	+6%	+9%	+3%	+2%	+3%	+7.2%
- Eligible consumers	1,794	144	129	154	144	313	324	334	308	290	257	239	227	2,864
% change y/y	+25.7%	+33%	+24%	+34%	+31%	+74%	+84%	+84%	+80%	+81%	+52%	+50%	+42%	+59.6%
- Distribution Companies	8,862	750	686	741	680	557	631	656	666	566	575	632	695	7,835
% change y/y	+5.2%	-8%	-7%	-6%	-6%	-18%	-10%	-17%	-12%	-18%	-16%	-13%	-10%	-11.6%
Of which: - Energo-Pro	5,891	481	445	488	458	341	379	404	424	358	360	379	416	4,933
Georgia	,													
% change y/y	+12.1%	-8%	-6%	-6%	-5%	-27%	-20%	-23%	-19%	-23%	-23%	-21%	-16%	-16.3%
-Telasi	2,970	269	241	253	221	216	252	252	243	208	215	253	279	2,902
% change y/y	+1.2%	-8%	-8%	-7%	-7%	+1%	+12%	-7%	+3%	-6%	-2%	+2%	+1%	-2.3%
Domestic Generation,	12,149	1,011	939	974	966	1,156	1,198	1,055	1,020	821	800	913	1,012	11,865
total		,					•	,	•				.	
% change y/y	+5.4%	-0%	+0%	-2%	-9%	-0%	-1%	-17%	+4%	-3%	+2%	+1%	+3%	-2.3%
Of which:														
- HPPs	9,949	601	511	540	801	1,150	1,185	1,043	874	607	580	503	545	8,940
% change y/y	+8.0%	-11%	-14%	-30%	-21%	+7%	-1%	-17%	+6%	-11%	+0%	-11%	-23%	-10.1%
- TPPs	2,115	405	420	426	159	0	7	3	138	207	214	402	460	2,840
% change y/y	-5.3%	+22%	+26%	+98%	+348%	-100%	+141%	-52%	-8%	+29%	+8%	+22%	+67%	+34.3%
- WPPs	84	6	7	8	7	6	5	9	8	7	6	8	7	85
% change y/y	-4.0%	-18%	18%	17%	-27%	17%	6%	11%	9%	-11%	-19%	16%	5%	+0.5%
Imports	1,509	182	142	209	81	0	8	94	119	185	195	200	211	1,627
% change y/y	+0.8%	-10%	-15%	+30%	+621%	-99%	+29%	N/A	+20%	+33%	-15%	-9%	-8%	+7.8%
Exports	589	-1070	-10/0	100/0	TUZ1/0	134	100	6	+ZU/0	TJJ/0	3	-370 -	-0/0	243
% change y/y	-14.2%	N/A	N/A	N/A	N/A	-32.8%	-48.7%	-95.3%	N/A	N/A	N/A	N/A	N/A	-58.6%
Trade balance	(920)	(182)	(142)	(209)	(81)	-32.0% 134	-40.7% 92	-90.3%	(119)	(185)	(193)	(200)		(1,383)
	. ,	. ,	. ,	. ,	. ,		92	(00)		. ,		. ,	(211)	
Transit	13	A1/A	9	6	9	- N//A	A / / A	A / / A	38	33	A / / A	22	19	136
% change y/y	-94.7%	N/A	-33%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-80%	-83%	+913.6%

Source: ESCO



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