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RESEARCH

Georgia's Energy Sector

Electricity Market Watch

Georgia │ Energy
Monthly Bulletin
February 8, 2017

Electricity market highlights	
Balancing price of electricity in Georgia, December*	USc 4.2/ kWh
Market clearing price of electricity in Turkey, December*	USc 6.5/ kWh
Average export price for Georgian electricity, December**	USc 5.4/ kWh
Average import price for electricity, December	USc 5.8/ kWh
Y/Y change in domestic consumption in kWh, FY16	6.2%
Y/Y change in exports in kWh, FY16	-15.3%
Y/Y change in exports to Turkey in kWh, FY16	-29.8%

***Average exchange rates in December GEL/US$ = 2.6511; TRY/US$= 3.4889*

*** Exports were negligible in December(0.107 gWh)*

HPPs commissioned in late 2016 (164.9MW) are expected to account for 5.7% of total hydro generation in 2017. Generation of deregulated HPPs already posted a significant increase in Dec-16 (+27.5% y/y). Dariali HPP, commissioned in Nov-16, was the main contributor to the increase. The 108MW Dariali HPP has already generated 22.1gWh of electricity and is expected to generate 464.5gWh in 2017. The HPPs commissioned in 2016 also include Debeda (3.0MW), Shakshaheti (1.5MW), Maksania (0.5MW), and Saguramo (4.4MW). Khelvachauri HPP (47.5MW), constructed by Turkish company Adjar Energy 2007, is currently operating in test mode and will be granted a generation license in 2017. It is part of a cascade of three HPPs, including Khelvachauri, Kirnati, and Khelvachauri 2, the last two of which are to be commissioned in coming years. The cascade is expected to provide 512.7gWh, on average, to the grid annually.

An estimated US$ 733mn will be spent on the construction of the Namakhvani HPP cascade in the next 5 years. An SPV established by the Norwegian company, Clean Energy Group, was granted the right to build, own, and operate the Namakhvani HPP cascade (433MW), the third largest HPP project in Georgia after Enguri and Khudoni. Expression of interest was held by the current project owner, Namakhvani LLC, a subsidiary of the state-owned company GEDF. Experience and financial performance were the prequalification criteria, while the PPA terms offered by the bidders were the deciding factors (the tariff and the period requested from GoG for purchasing generated electricity). The investor requested a guaranteed tariff for only eight months (September through April) for the first 10 years. Annual generation of the Namakhvani HPP cascade is estimated at 1.5tWh, which represents 11.0% of the projected Georgian electricity consumption in 2022.

Solar energy potential in Georgia. GoG has signed an MoU with Caucasian Solar Company JSC for the feasibility study of solar power plants (SPPs) in ten different locations: Ksani, Marneuli, Kaspi, Gldani, Akhaltsikhe (2 SPPs), Gardabani (2 SPPs), Saakadze, and Algeti. The approximate capacity of each SPP is 50MW. The exact amount of installed capacity and required investment will be known after the completion of the 18-month feasibility study. Currently there are two other solar projects on the feasibility stage: one developed by GEDF in Udabno, Kakheti region, with approximate capacity of 5MW and another by Solar Energy Company Ltd. in Kvemo Kartli region, with approximate capacity of 50MW.

GEDF offers investors its 150MW Zestafoni WPP project for further mutual development. Pre-feasibility revealed the possibility to construct 50 wind turbines on the site, which would require an investment of US$ 227mn. The main investor selection criteria are the rates offered for call and put options, which can be activated after the completion of the feasibility study. GEDF is also developing the Central WPP project (150MW) in the Imereti region and the Nigoza WPP project (50MW) in the Kartli region, together with the Turkish company Calik Enerji Sanayi ve Ticaret A.S. via an SPV, Chalik Georgia Wind JSC. GEDF is also the owner of Gori WPP, which commenced operations in November 2016 and already reached 0.6% of total energy supplied to the grid in December 2016.

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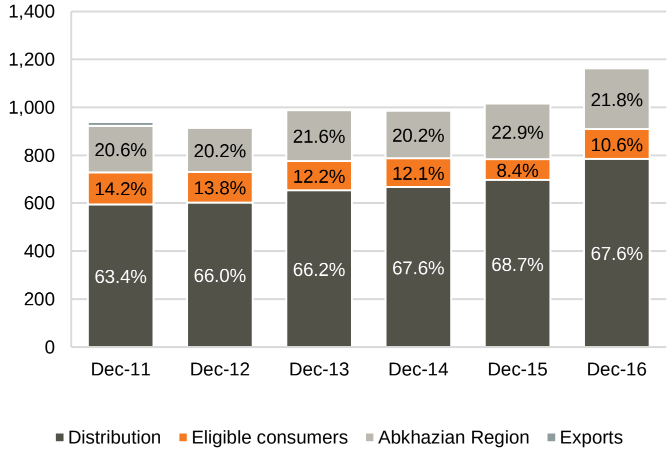
Electricity Consumption, Exports, and Generation – December 2016

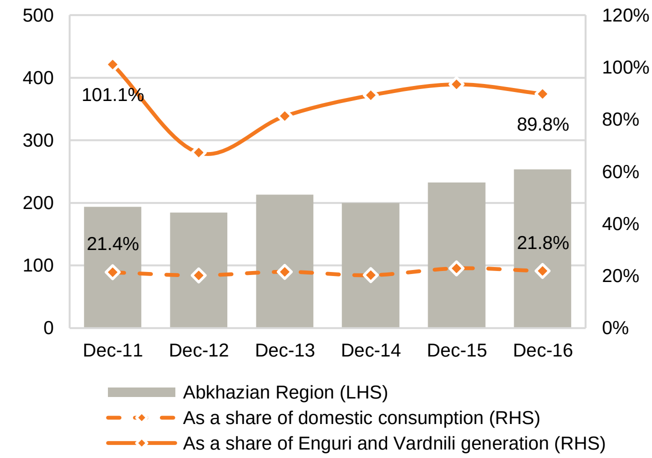
Domestic consumption increased 14.5% y/y in December 2016, with Telasi and eligible consumers driving the growth. DNO consumption was up 12.6% y/y, with the greater Tbilisi area (Telasi subscribers) posting an outsized 20.5% y/y growth rate. Usage of Energo-Pro subscribers was up 8.4% y/y, while Kakheti Energy Distribution usage was up 6.0% y/y. Consumption of the Abkhazian region was up 9.2% y/y. Eligible consumer usage was up 44.3% y/y from the very low base in December 2015 (-28.6% y/y). Georgian Manganese, the largest direct consumer (81.4% of direct consumption), drove the growth with a 71.7% y/y increase from the December 2015 low base (-36.4% y/y). Electricity exports were negligible, while a significant amount of electricity transit (134.4gWh) took place from Azerbaijan to Turkey in December 2016.

Figure 1: Domestic electricity consumption and export, gWh



Source: ESCO

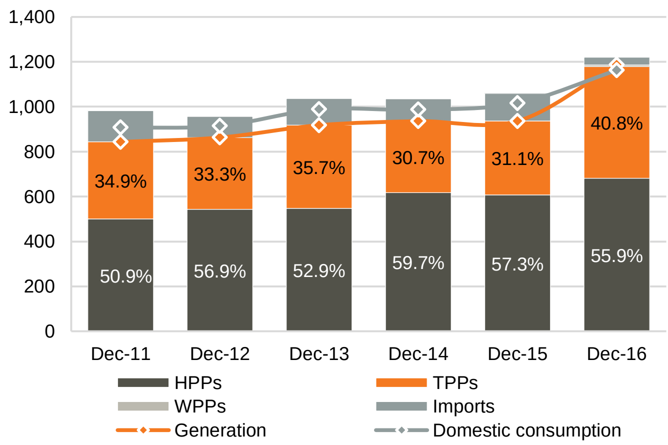
Figure 2: Electricity consumption, Abkhazian Region (gWh)



Source: ESCO

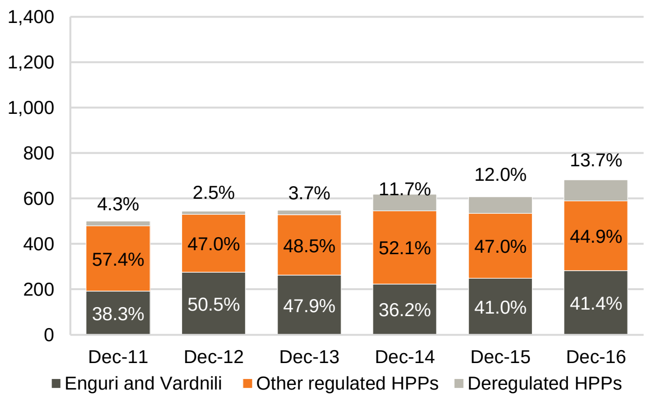
Domestic consumption needs were met almost entirely by domestic generation in December 2016. Imports (-72.7% y/y) accounted for a mere 2.8% of total electricity supplied to the grid, with 58.8% coming from Azerbaijan and the rest from Russia. Total generation increased 26.7% y/y, with TPPs driving the growth (+50.9% y/y) and accounting for 40.8% of total electricity supply. The newly commissioned wind power plant accounted for 0.6% of total electricity supplied to the grid (7.2gWh). HPP generation was up 12.4% y/y, following the high growth rate in November 2016 (+17.0% y/y). The main drivers of the increase in hydro generation were Enguri and Vardnili (+13.6% y/y) and deregulated HPPs (+27.5% y/y), as newly commissioned HPPs commenced operations. The GC fee was down 63.4% y/y to USc 0.25/kWh, as guaranteed capacity days were limited – Gardabani CCGT (7 days), Block N4 (8 days), GPower (25 days) and Mtkvari Energy (25 days).

Figure 3: Electricity generation, import, domestic consumption, gWh



Source: ESCO

Figure 4: Hydro generation, gWh

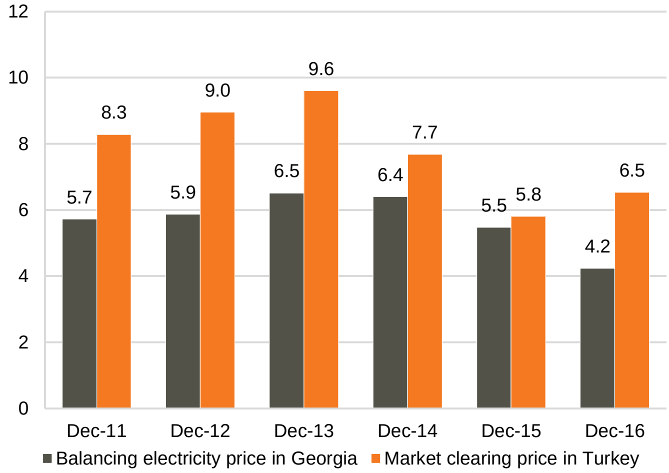


Source: ESCO

Electricity Prices in Georgia and Turkey

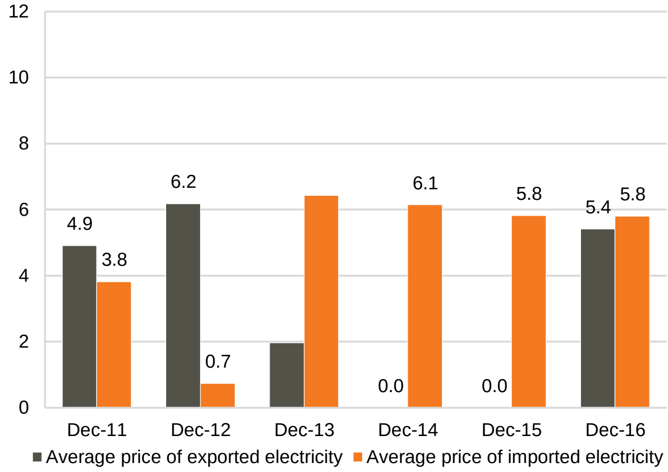
Wholesale market prices in Georgia decreased 23.3% y/y to USc 4.2/kWh, 35.2% below the Turkish market clearing price in December 2016. Turkish electricity prices increased 12.6% y/y to USc 6.5/kWh from a significantly low base in December 2015 (-24.5% y/y). 22% of total electricity supplied to the grid in December 2016 was traded through the market operator, with the rest traded through bilateral contracts.

Figure 5: Electricity prices in Georgia and Turkey, USc/kWh



Source: ESCO, EPIAS

Figure 6: Average prices for imports and exports, USc/kWh

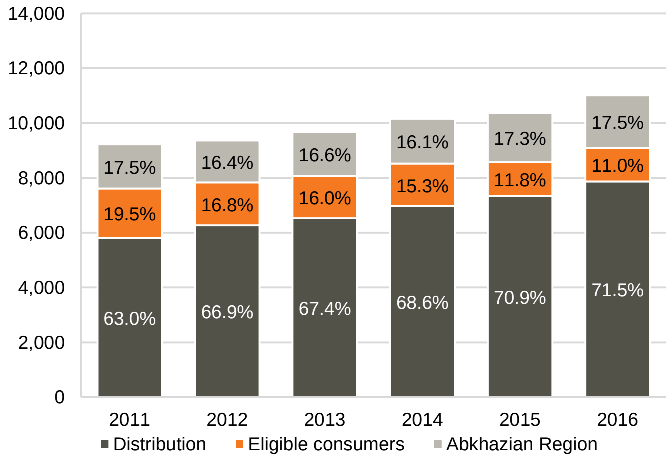


Source: ESCO, GeoStat
Note: Exports were negligible

Electricity Consumption, Exports, and Generation – 2016 Summary

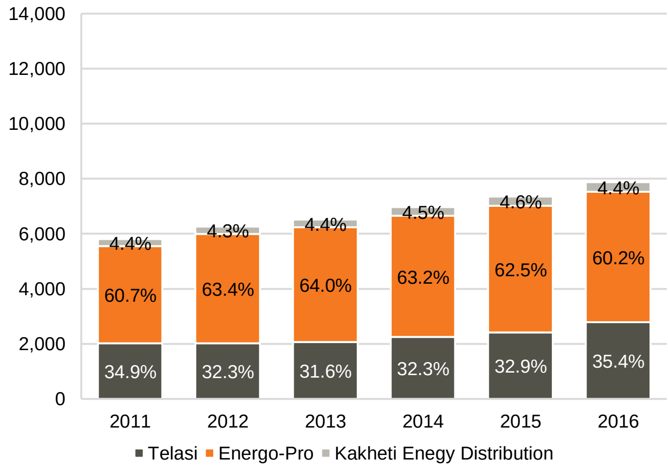
Domestic consumption increased 6.2% y/y in 2016. The main contributor was Telasi (+15.3% annually), which doubled its 2015 annual growth rate (+7.5% y/y). The Abkhazian region, which led the growth in 2015, continued steady growth (+7.0% y/y) in 2016. Energo-Pro subscribers increased their consumption by 3.3% y/y in 2016, slightly lower than the growth in 2015 (+4.3% y/y). Consumption by Kakheti Energy Distribution subscribers increased by only 1.9% in 2016, following much larger increases in previous years (8.4% in 2015 and 8.1% in 2014). Consumption of eligible consumers decreased 1.0% y/y from the low base in 2015 (-21.4% y/y), but the decrease was the result of Rustavi Water Company giving up its eligible consumer status in 2016 (it accounted for 3.4% of direct consumption in 2015). Consumption of Georgian Manganese, the largest direct consumer, was up 4.4% y/y from the 2015 low base (-20.3% y/y).

Figure 7: Domestic electricity consumption, 2016 (gWh)



Source: ESCO

Figure 8: Consumption of distribution companies, 2016 (gWh)

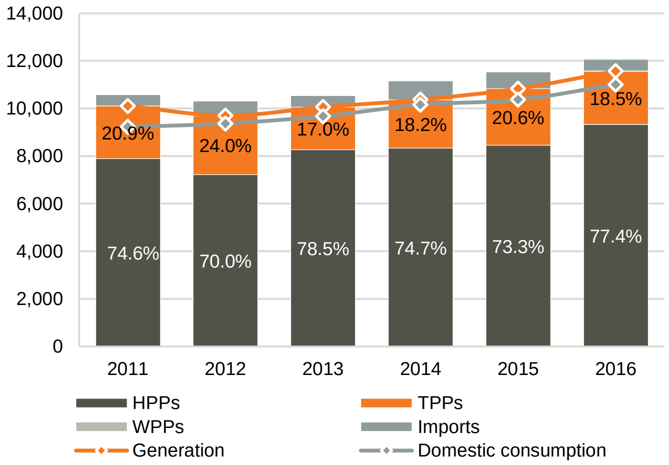


Source: ESCO

The increased level of consumption was satisfied almost entirely by domestic generation sources. Domestic generation increased 6.8% y/y and comprised 96.0% of total electricity supply. HPP generation increased 10.4% y/y, while TPP generation decreased 6.0% y/y in 2016. Growth of hydro generation was mainly driven by regulated HPPs, with generation up 7.8% y/y by Enguri and Vardnili and 11.9% y/y by other regulated HPPs. Generation by deregulated HPPs was up by 16.6% y/y. 91.3% of total electricity supply was consumed by domestic consumers, 4.6% was exported, and 4.1% was consumed by power plants or lost during transmission.

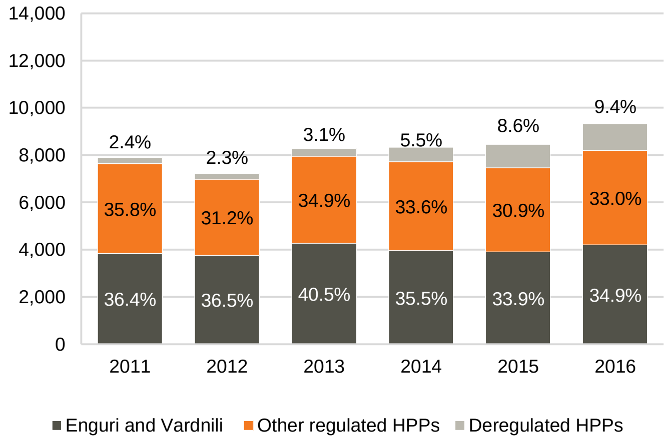
Georgia became a net exporter of electricity in 2016 with 80.1gWh of net export. Electricity import decreased dramatically (-31.5% y/y) to 478.9gWh in 2016 and accounted for only 4.0% of total electricity supply. 77.1% of imported electricity came from Russia, the rest from Azerbaijan. Exports in 2016 were down 15.3% y/y to 559.0gWh. Exports to the main export market, Turkey (52.7% of 2016 export), decreased 29.8% y/y, largely due to the fewer export months for Paravani HPP, per the amended MoU with Georgian Urban Energy. There was a significant increase in export to Armenia (+57.4% y/y), while export to Russia declined 13.0% y/y and accounted for 26.4% of exported electricity. Total amount of electricity transit reached 849.6 gWh in 2016.

Figure 9: Electricity generation, import, and domestic consumption, 2016 (gWh)



Source: ESCO

Figure 10: Hydro generation, 2016 (gWh)



Source: ESCO

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