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International School of Economics at TSU
Policy Institute

JUNE
2020



ELECTRICITY MARKET REVIEW



ISET POLICY INSTITUTE ENERGY AND ENVIRONMENT POLICY RESEARCH CENTER

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INFORMATION

- In June 2020, both power generation (-17%) and consumption (-15%) have decreased compared to the same month in 2019.
- Substantial decrease in consumption in annual basis is clearly caused by the COVID 19 lockdown, while there is a slight increase in consumption (+1%) compared to May 2019.
- Interestingly, electricity consumption in Abkhazia has again increased, by 24% this month, compared to the same month in 2019, while in the rest of the country consumption decreased.
- In June 2020, cross-border electricity trade was unsubstantial, with imports from Azerbaijan and reduced exports to Azerbaijan, Armenia and Turkey compared to the corresponding month of the previous year.
- In June 2020, the weighted average import and export prices have substantially decreased both on an annual and on a monthly basis.
- In June 2020 the concentration in the Demand and in the Supply sides of the market slightly increased compared to the last month. On an annual basis there was a drop in HHI on the generation market, while there was a nonnegligible increase of the HHI on the consumption side.

ABBREVIATION USED

Mln – million
 kWh – kilowatt-hour
 HPP – Hydro Power Plant
 WPP – Wind Power Plant
 TPP – Thermal Power Plant
 HHI – Hirschmann-Herfindahl Index

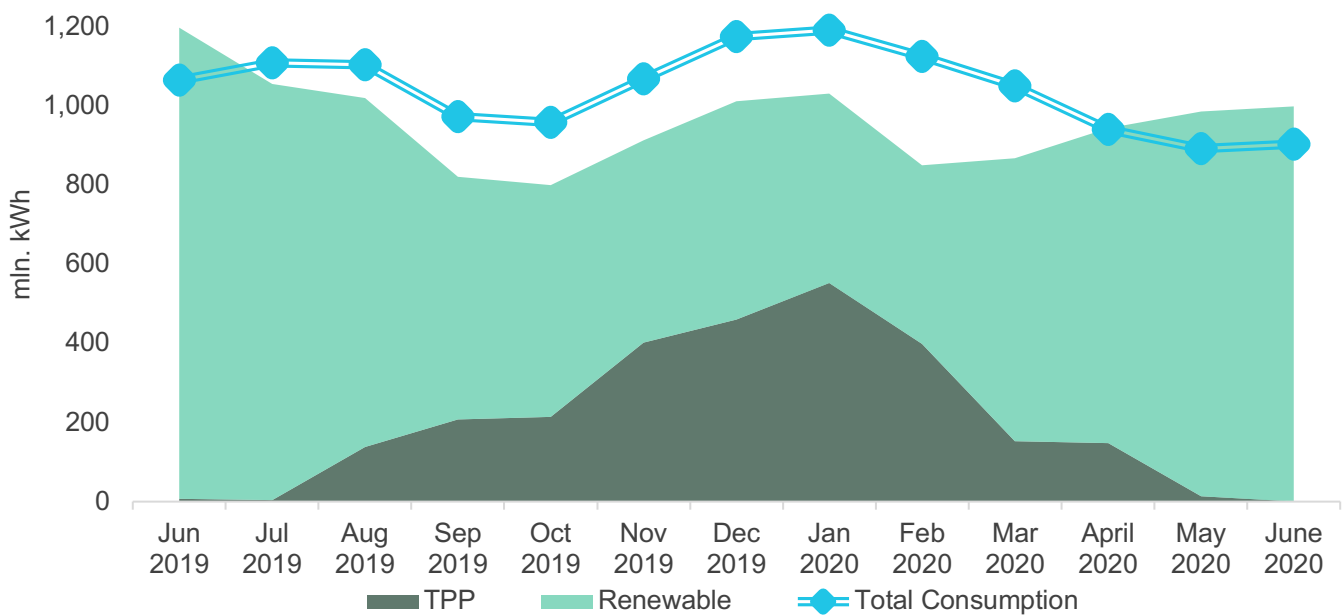
Generation – Consumption – Trade

In June 2020, Georgian power plants generated 999 mln. kWh of electricity (Figure 1). This represents a 16.6% decrease in total generation, compared to the previous year (June 2019, the total generation was 1,198 mln. kWh). The decrease in generation on a yearly basis comes from the decrease of 16% in hydro power generation and more than seven-fold decrease in thermal power generation offsetting an increase in wind power generation (+21% compared to June 2019), which remains however below 1% of total generation.

On a monthly basis, generation increased by 1.4% (in May 2020, total generation was 986 mln. kWh) (Figure 1). The monthly increase in total generation was the result of the increase of 3% in hydro, more than offsetting the decline in wind and thermal power generation (-18% and -100% respectively).

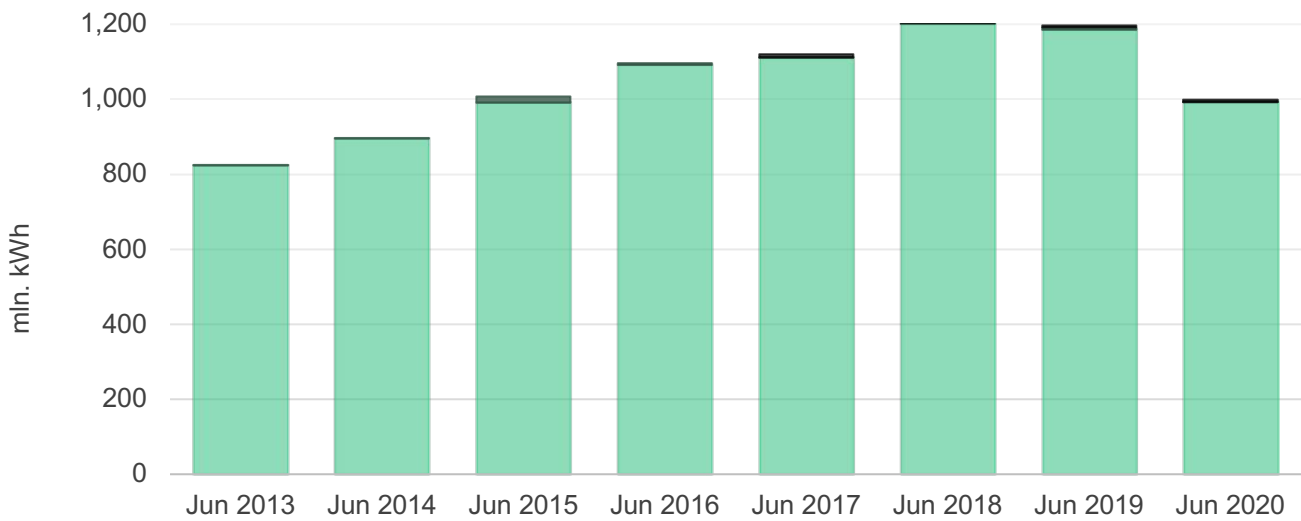
The June consumption of electricity on the local market was 903 mln. kWh (-15% and +1% compared to June 2019, and May 2020, respectively) (Figure 1). In June 2020, power generation exceeded consumption by 96 mln. kWh which was 9.6% of total generation (in contrast in June 2019 difference between total generation and consumption resulted in a surplus of 132 mln. kWh which was around 11% of the total generation for the month).

Figure 1 - Electricity Consumption and Generation



Source: Electricity System Commercial Operator (ESCO)

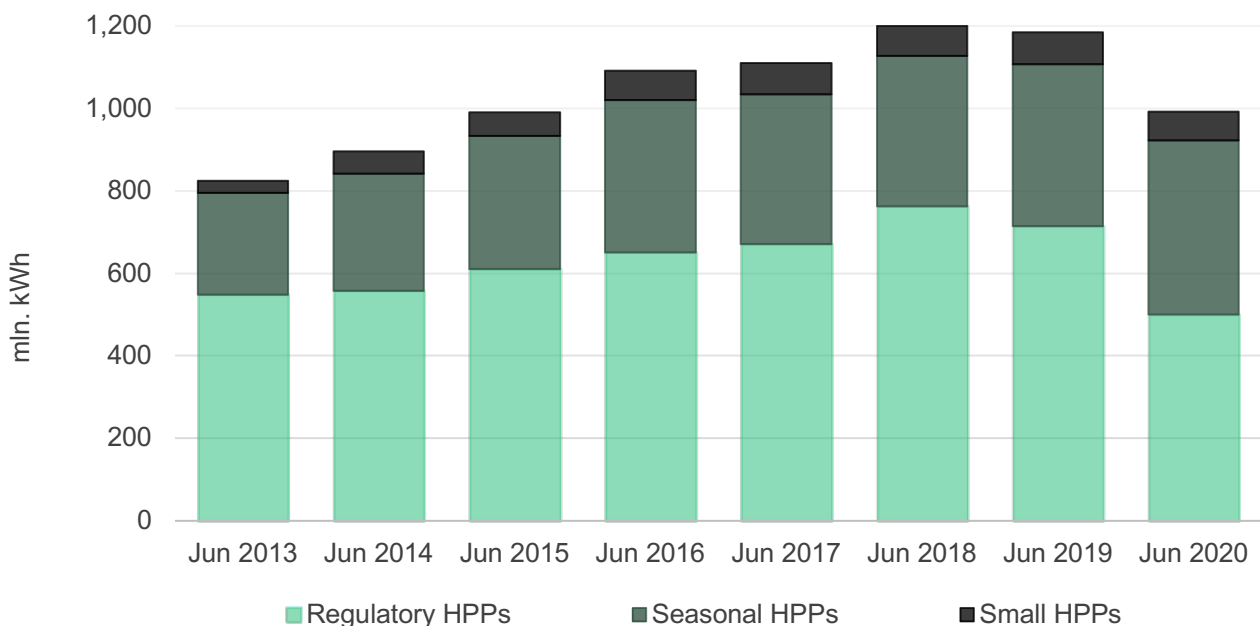
In this month most generation came from hydro power plants. In June 2020, hydro power (HPP) generation amounted to 993 mln. kWh (99.3% of total), while thermal power (TPP) generation was 0.028 mln. kWh (0.003% of total), and wind power (WPP) generation was 7 mln. kWh (0.67% of total) (Figure 2).

Figure 2 - Electricity Generation by Sources

Source: ESCO

■ HPP ■ TPP ■ WPP

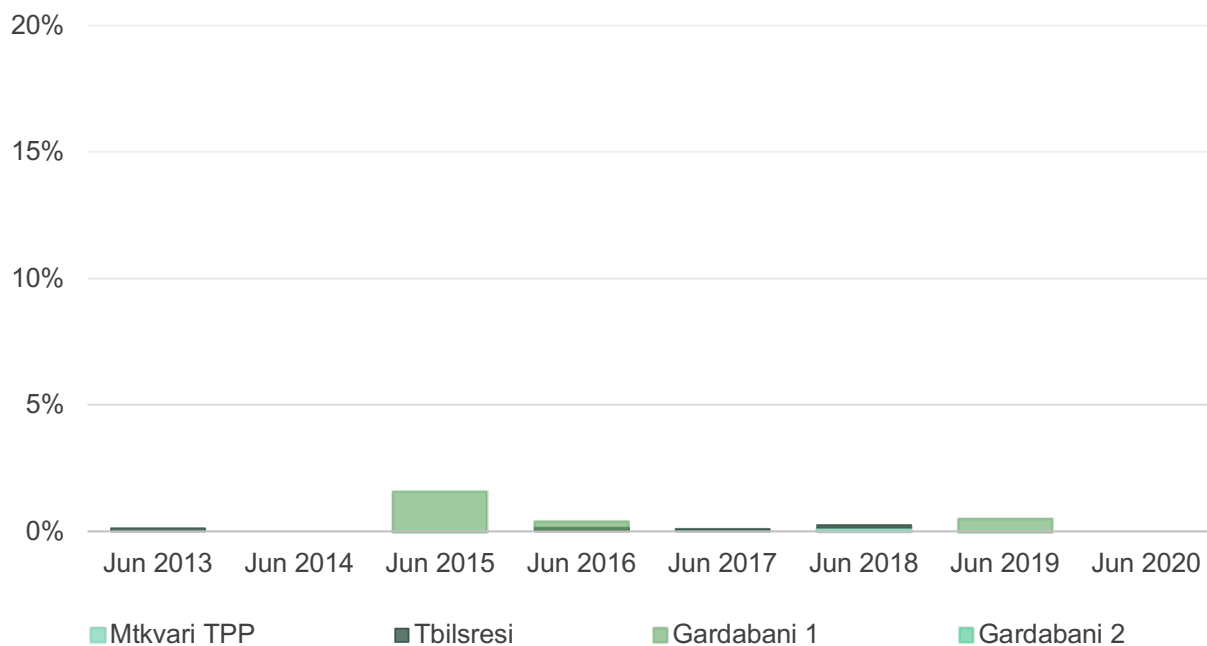
Among hydropower generators, large (regulatory) HPPs produced 50% (500 mln. kWh) of electricity, while seasonal and small HPPs produced 43% (422 mln. kWh) and 7% (70 mln. kWh), respectively (Figure 3).

Figure 3 - HPP Generation by Type

Source: ESCO

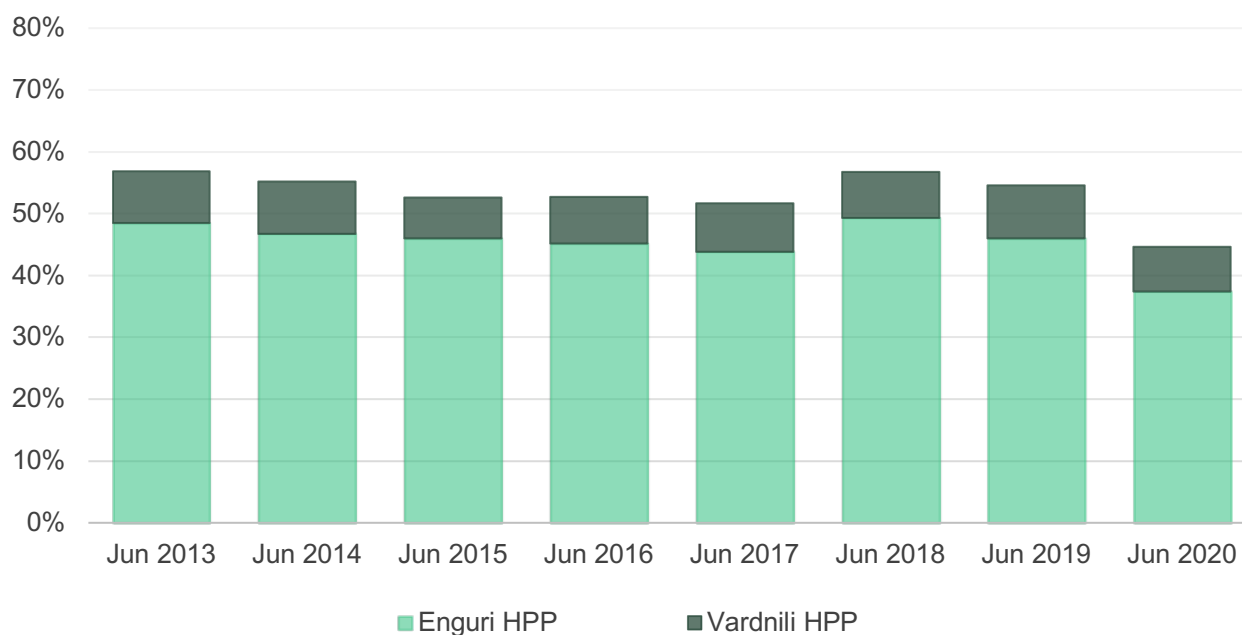
Among thermal power plants, Gpower generated 0.028 mln. kWh, 100% of total thermal power generation and just 0.003% of total generation (Figure 4). As for HPP generation, the large HPPs, Enguri and Vardnili generated 446 mln. kWh (89% of generation for regulatory HPPs), with 374 mln. kWh and 72 mln. kWh, respectively. Power generated by Enguri and Vardnili represented around 45% of the total generation (Figure 5). Overall, total generation decreased by 17% compared to June 2019 (Figure 6).

Figure 4 - Share of Large TPPs in Total Generation

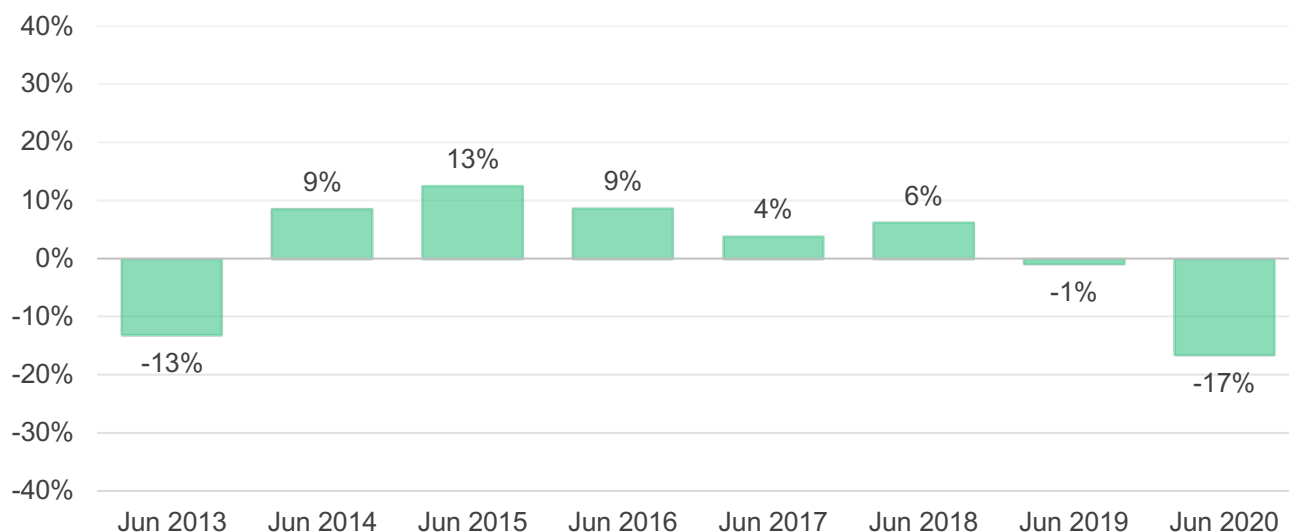


Source: ESCO

Figure 5 - Share of Enguri and Vardnili in Total Generation

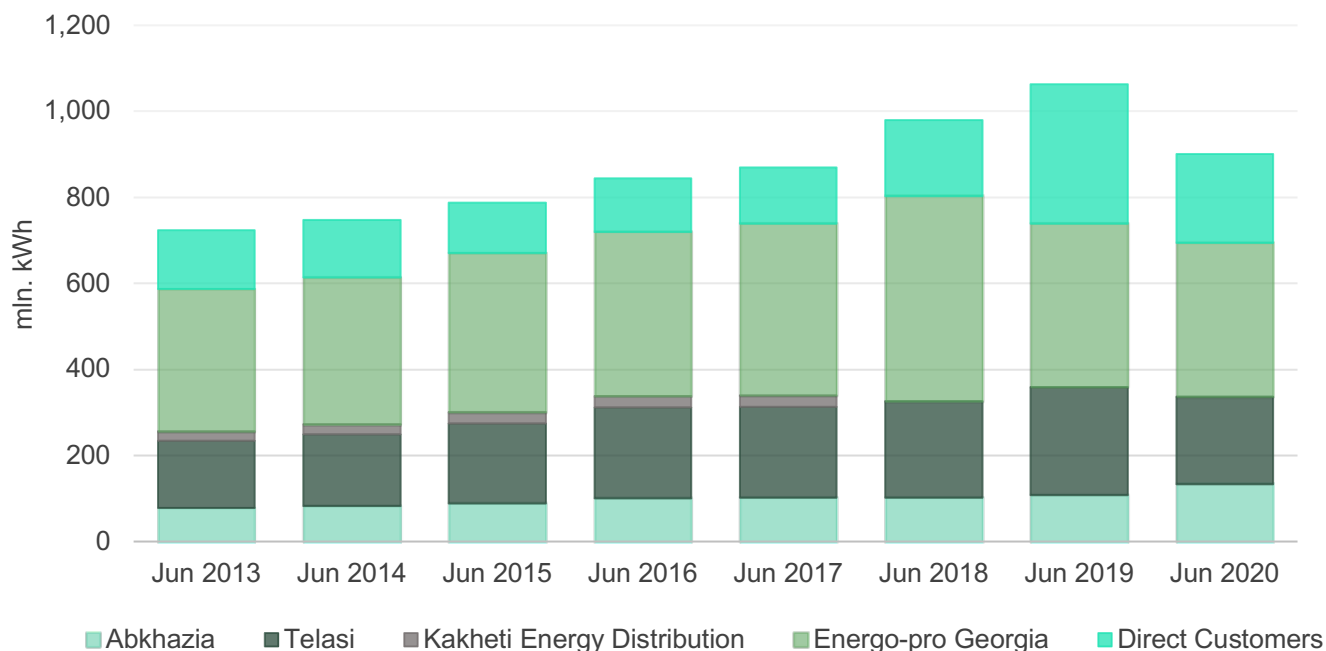


Source: ESCO

Figure 6 - Growth of Generation (% , y/y)

Source: ESCO

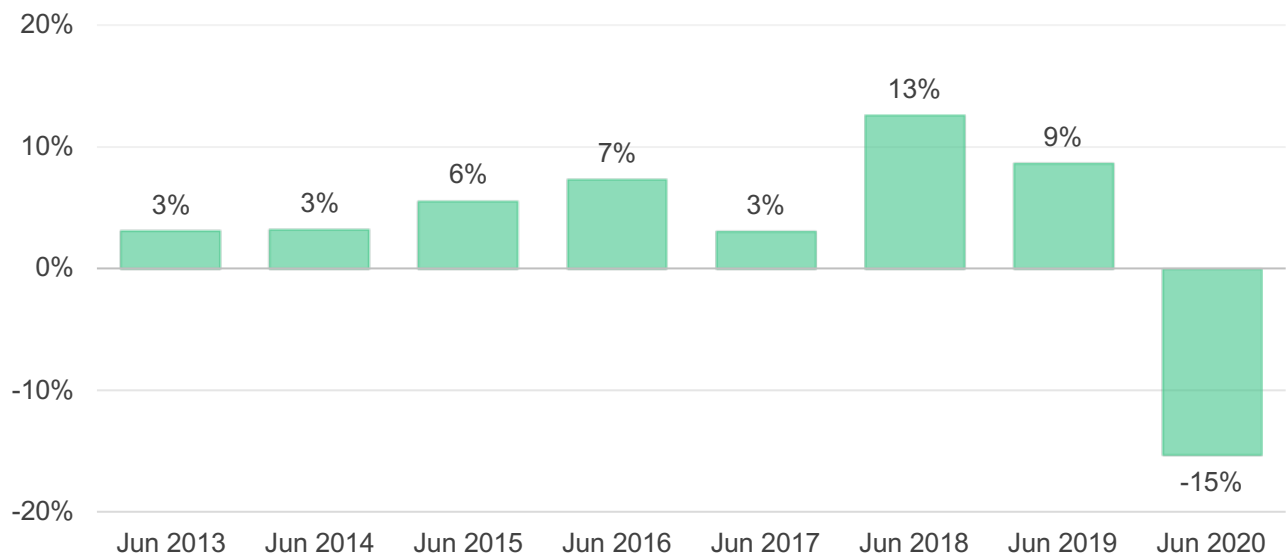
Total electricity demand came from: Energo-Pro Georgia¹ (40% - 357 mln. kWh), Telasi (22% - 204 mln. kWh), Abkhazia (15% - 133 mln. kWh), and direct customers (23% - 207 mln. kWh) (Figure 7). Annual demand from Energo-Pro Georgia, Telasi and direct customers decreased by 6%, 19% and 36%² respectively, while consumption in Abkhazia increased by 24%. Overall, there was an annual decrease of 15% in the total electricity consumption in June 2020, compared to June 2019 (Figure 8). Similar to May, consumption decrease is a direct effect of COVID-19 lockdown on the economy in June 2020.

Figure 7 - Electricity Consumption by Type of Customer

Source: ESCO

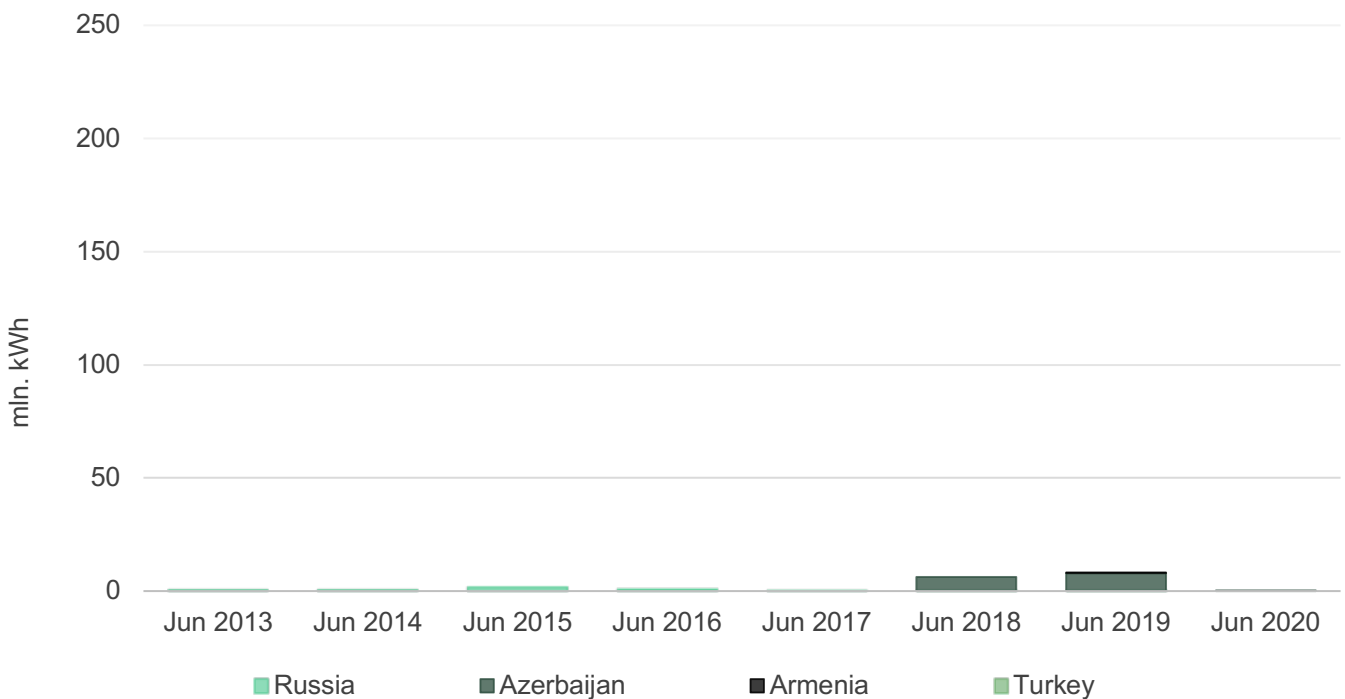
¹ Energo-Pro Georgia acquired Kakheti Energy Distribution in September 2017.

² It has to be noted that with the market opening since May 2019 large customers started buying their electricity on the market, as direct customers. Despite this fact, the effect of Covid-19 shutdown was such large-scale that it was reflected into decreased consumption by this group as well compared to the previous year.

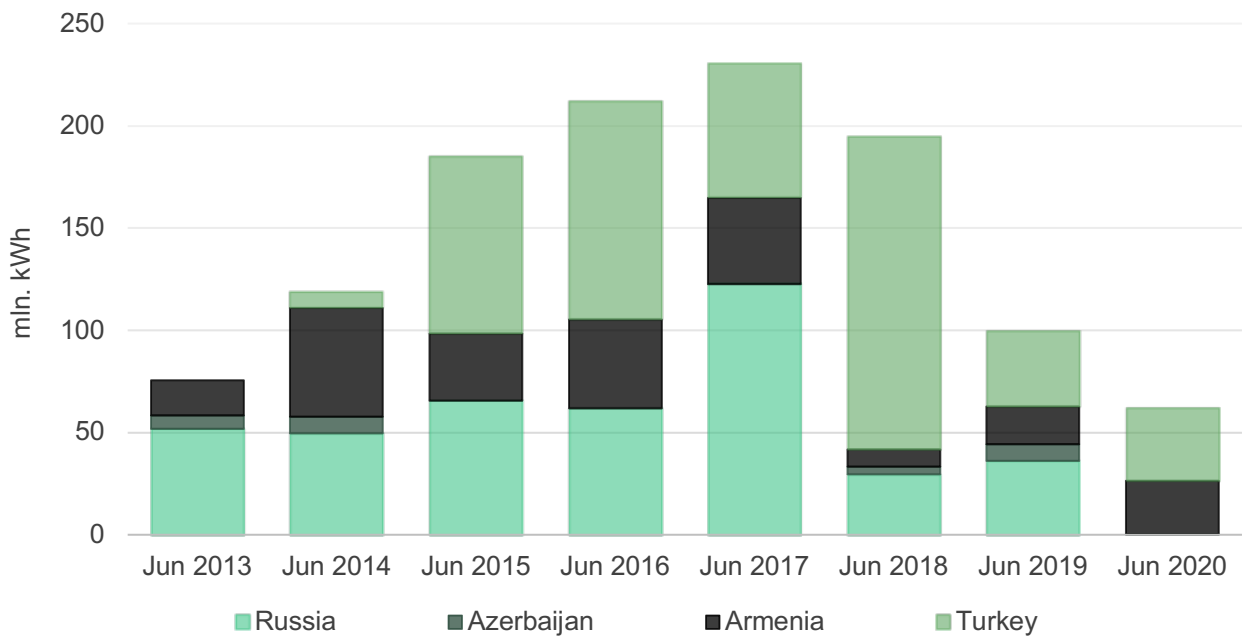
Figure 8 - Electricity Consumption Growth (% , y/y)

Source: ESCO

In June 2020, Georgia imported 0.092 mln. kWh of electricity (compared to 8 mln. kWh June 2019) 100% of which came from Azerbaijan (Figure 9). In June 2020, Georgia exported 62 mln. kWh (38% decrease compared to June 2019), 58% of which was exported to Turkey, 41.9% to Armenia and 0.1% to Azerbaijan. In June 2020, Georgia has transited 31 mln. kWh electricity from Azerbaijan to Turkey.

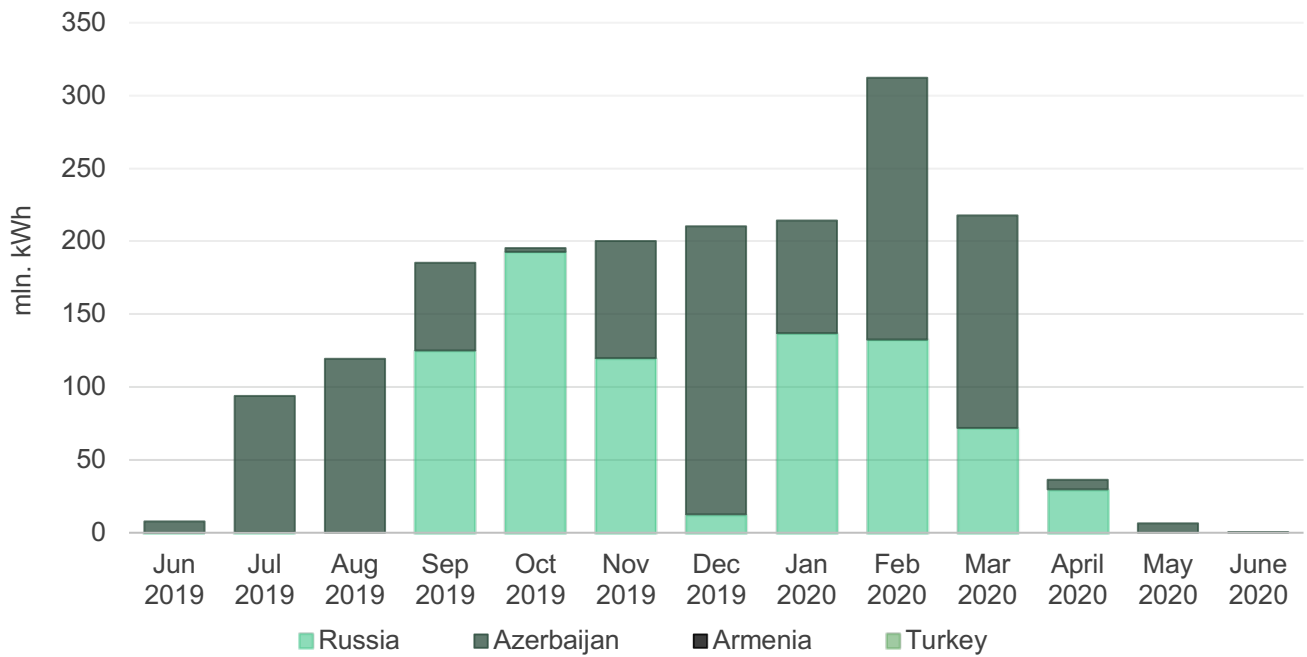
Figure 9 - Imports by Year

Source: ESCO

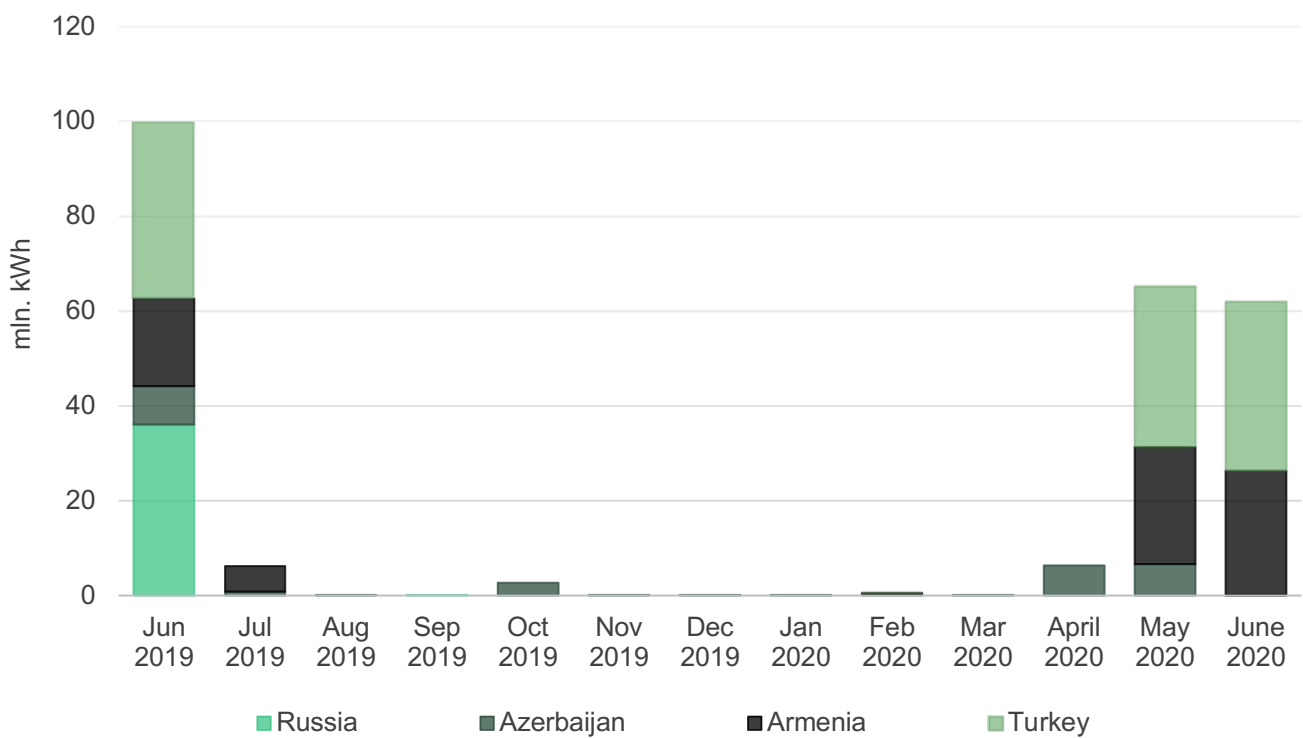
Figure 10 - Exports by Year

Source: ESCO

In June 2020, electricity exports and imports have substantially decreased compared to the previous year due to economic slowdown induced by COVID-related restrictions (Figure 11,12).

Figure 11 - Imports by Month

Source: ESCO

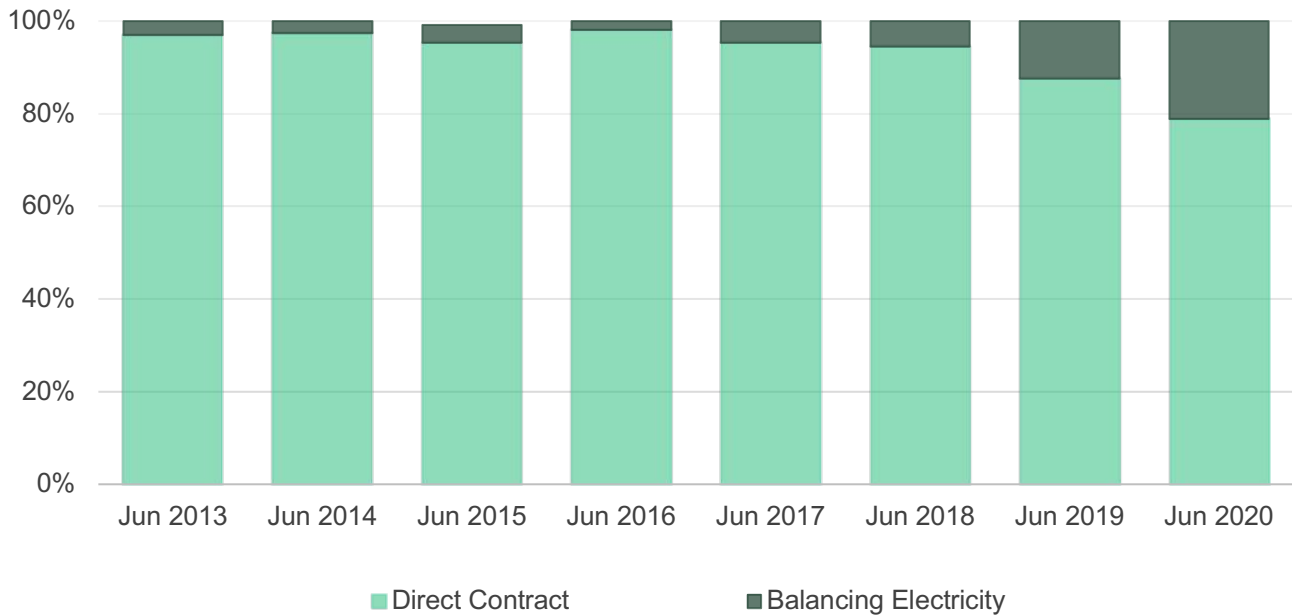
Figure 12 - Exports by Month

Source: ESCO

1. Market Operations

In May 2020, 79% of the electricity sold on/from the local market was sold through direct contracts. The remaining 21% was sold as balancing electricity (Figure 13).

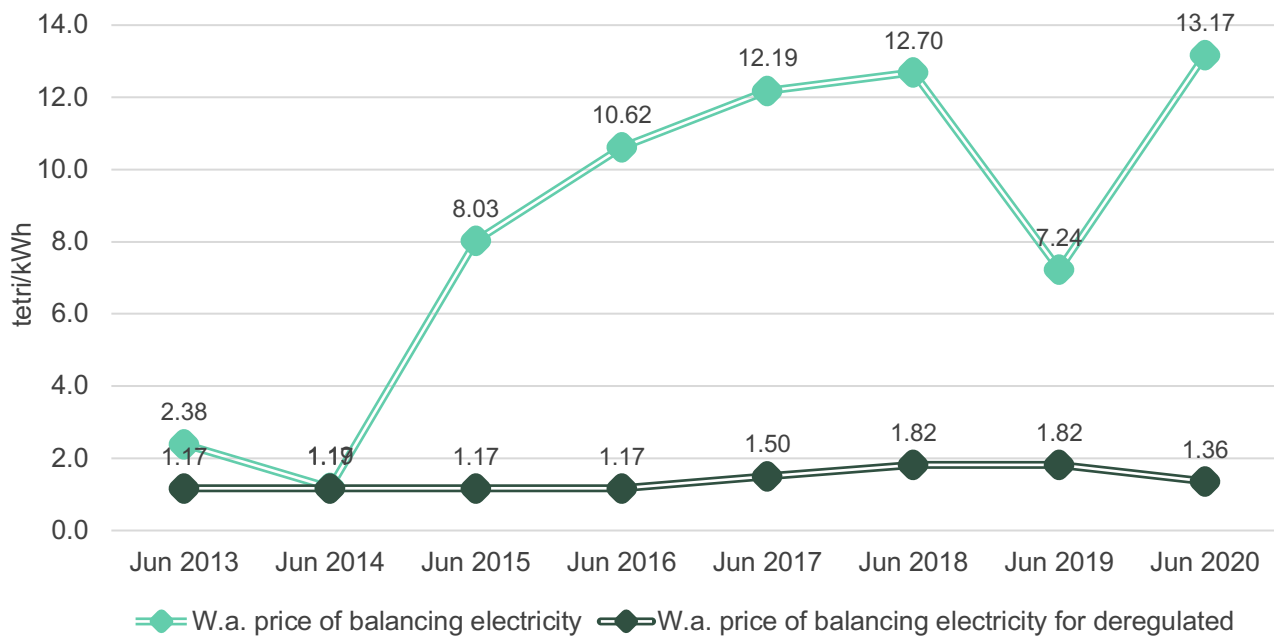
Figure 13 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

In June 2020, the weighted average price of balancing electricity was 13.2 tetri/kWh, which corresponds to an annual increase of 83% compared to June 2019. As for the weighted average price for deregulated (small) HPPs, it was 1.4 tetri/kWh, decreased by 22% compared to the corresponding month of the previous year (Figure 14).

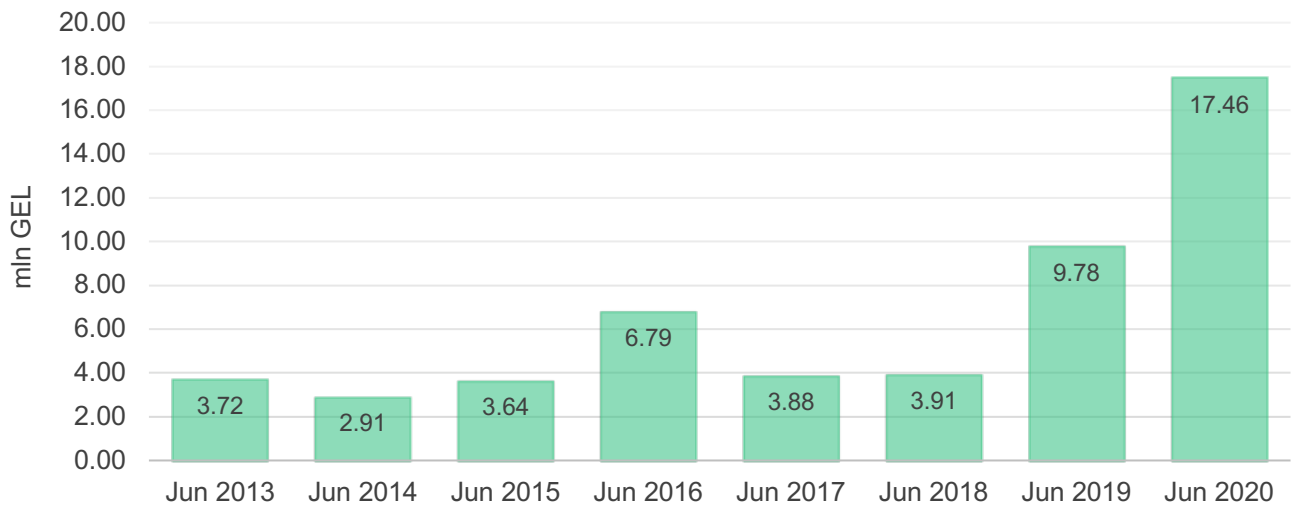
Figure 14 - Balancing Electricity Prices Weighted Average and Weighted Average Price for Deregulated HPPs



Source: ESCO

Guaranteed capacity payments in June 2020 were roughly 17.46 mln. GEL, which represents a 79% increase compared to June 2019 (Figure 15) which is quite significant.

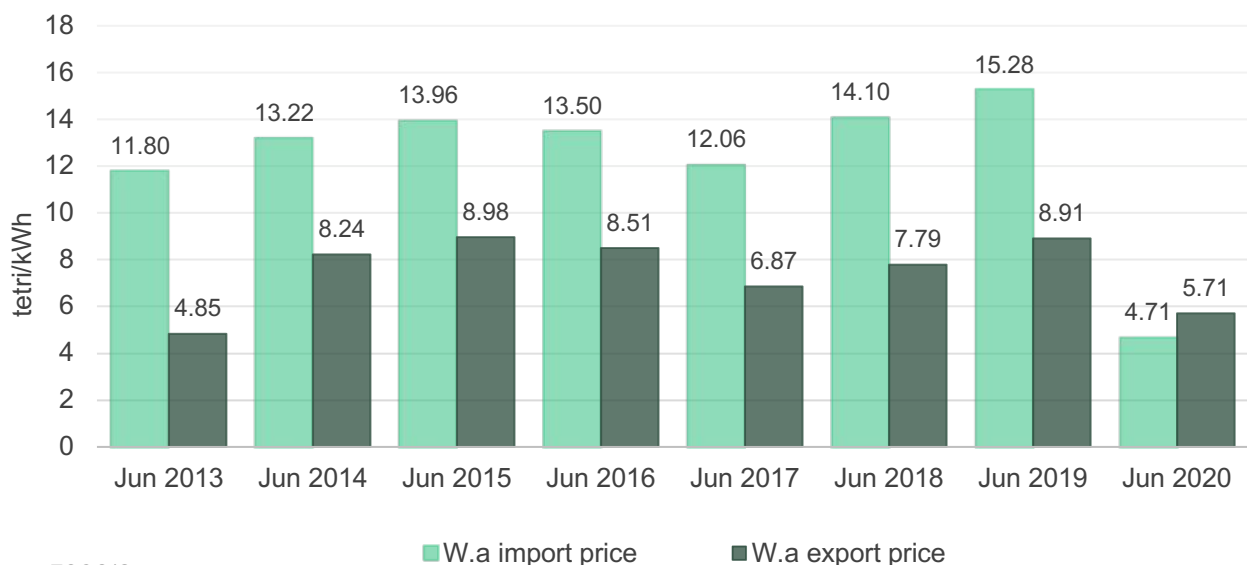
Figure 15 - Cost of Guaranteed Capacity



Source: ESCO

The weighted average electricity import price in June 2020 decreased by 71.8 % in USD, on an annual basis, and 69.2% in GEL (from 5.5 ¢ or 15.28 tetri per kWh in June 2019 to 1.55 ¢ or 4.71 tetri per kWh in June 2020) (Figure 16). The weighted average import price decreased by 70% and 72% in USD and GEL, respectively, on a monthly basis (import price was 5.5 ¢ or 17.47 tetri per kWh in May 2020). According to the available information³ the weighted average electricity export price in June 2020 decreased by 42% and 36% in USD and Gel, respectively, on an annual basis (from 3.21 ¢ or 8.91 tetri per kWh in June 2019 to 1.88 ¢ or 5.71 tetri per kWh in June 2020) (Figure 17). The weighted average export price decreased by 48.7% and 50.9% in USD and GEL, respectively, on a monthly basis (export price was 3.66 ¢ or 11.63 tetri per kWh in May 2020).

Figure 16 - Prices Import/Export

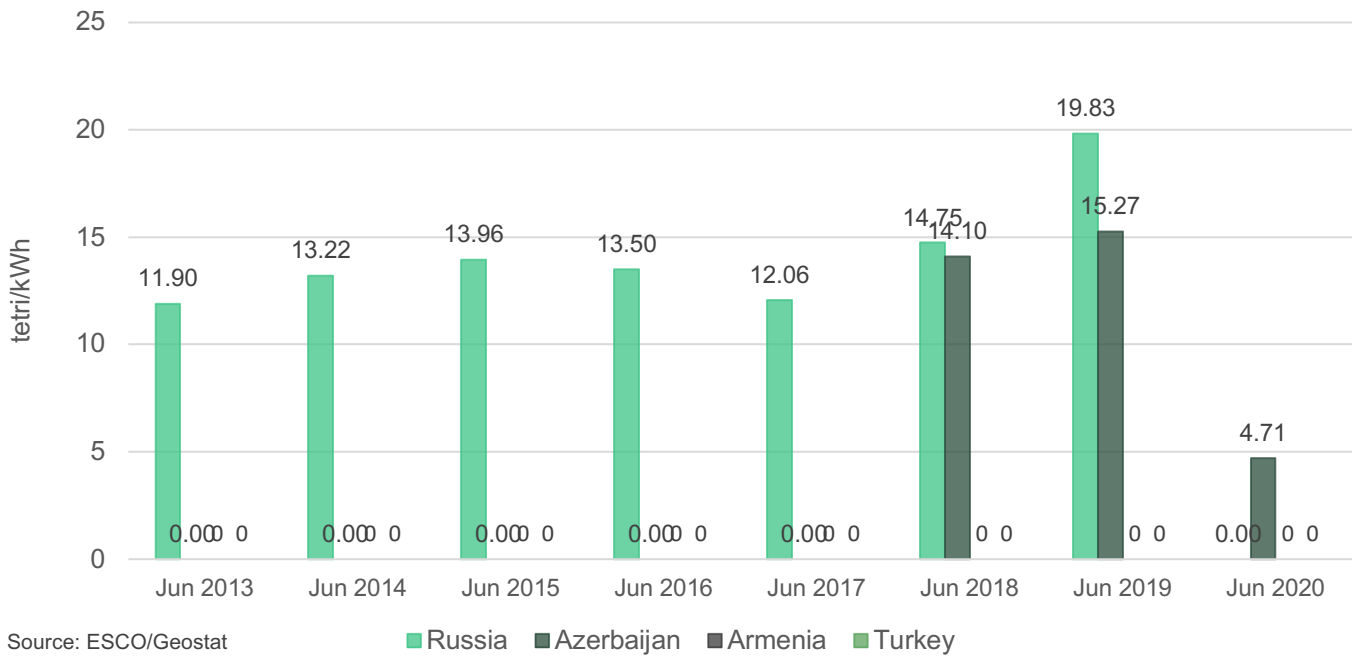


Source: ESCO/Geostat

³ This month the value of exports to Armenia could not be identified by Geostat, consequently the weighted average price of the exports might be mis-measured

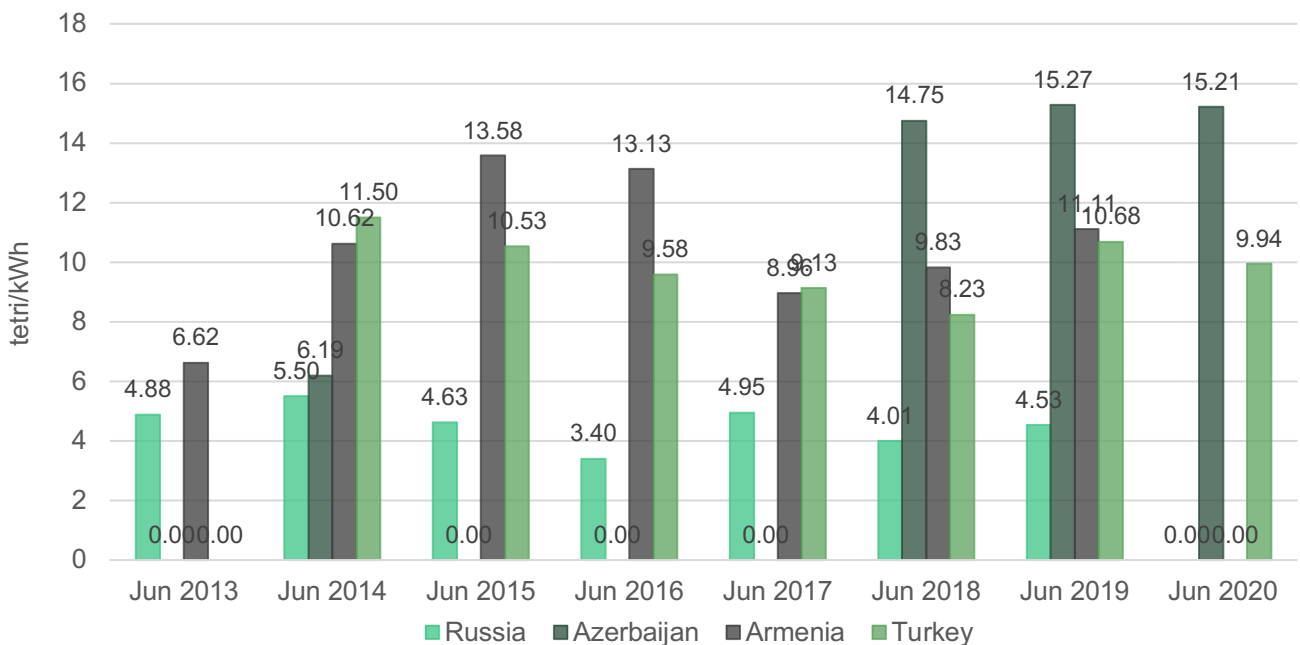
Import prices from Azerbaijan stood at 1.55 ¢ or 4.71 tetri per kWh (Figure 17).

Figure 17 - Import Prices by Countries



In June 2020, the electricity export price to Azerbaijan and Turkey stood at 5 ¢ or 15.21 tetri per kWh and 3.27 ¢ or 9.94 tetri per kWh, respectively (Figure 18).

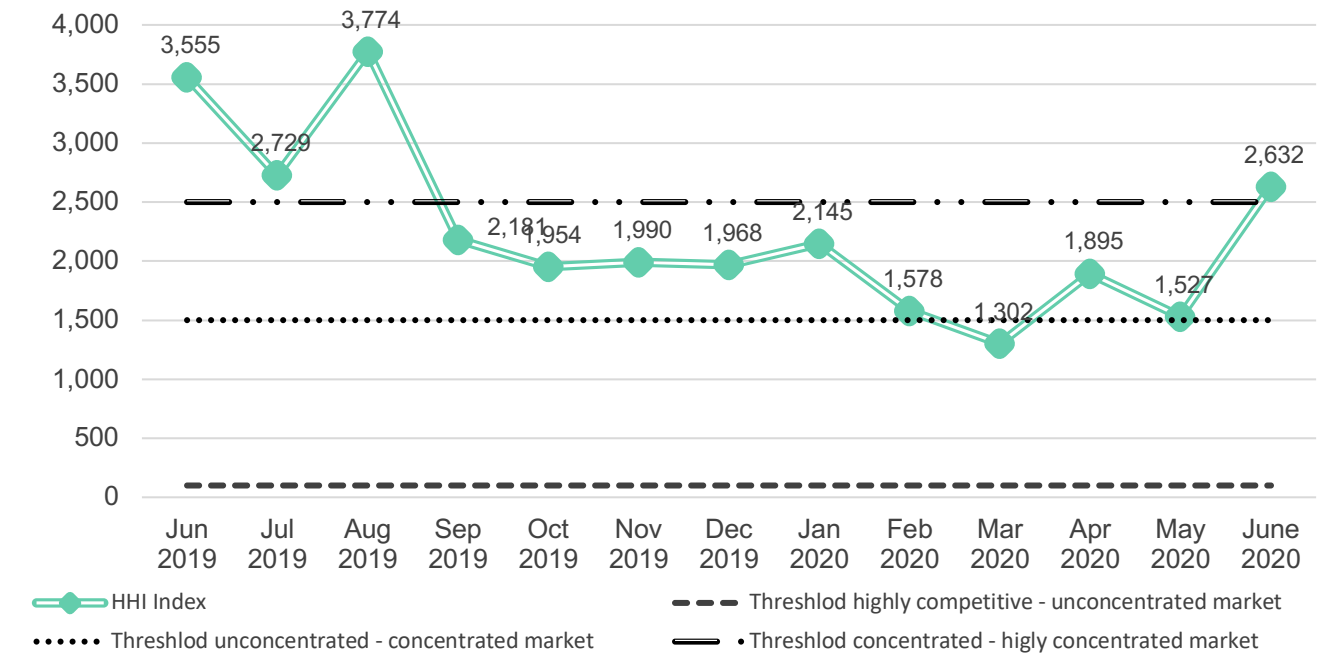
Figure 18 - Export Prices by Countries



2. Market Concentration

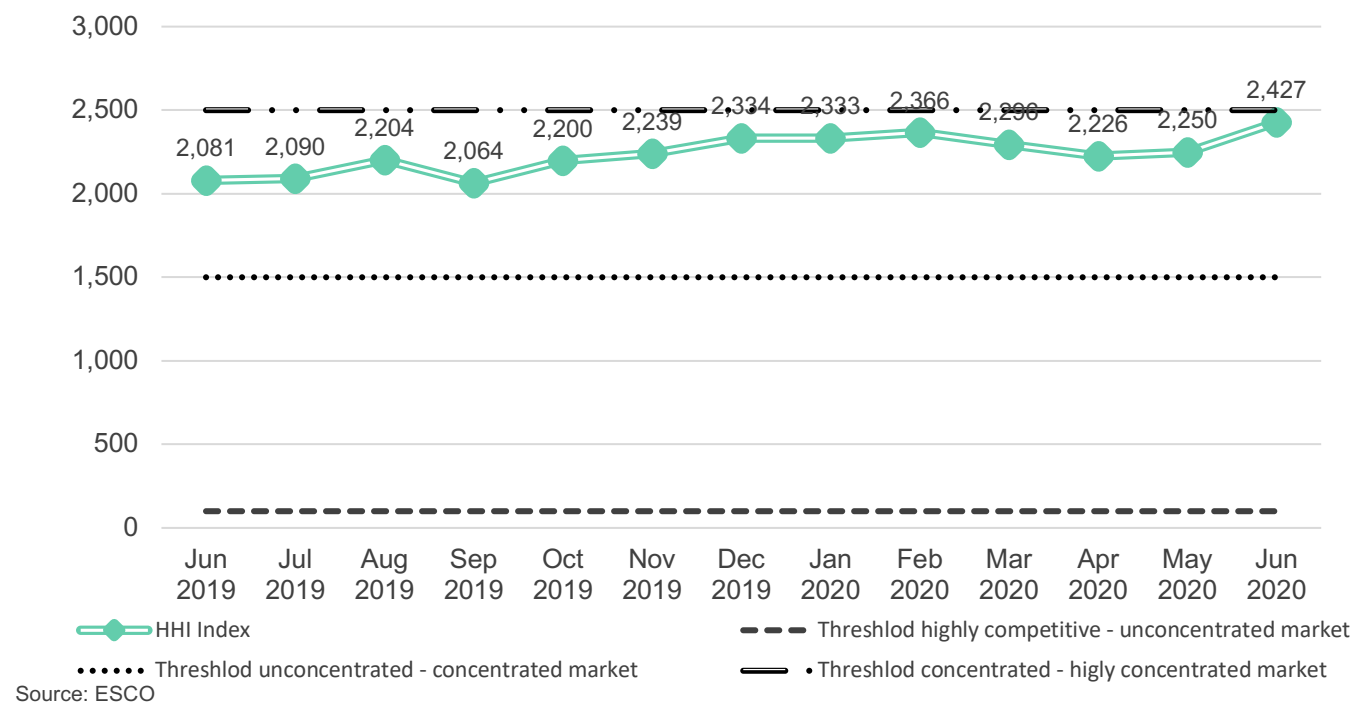
In conclusion, we utilize the Hirschmann-Herfindahl (HHI) market concentration index to evaluate how competitive the generation and consumption segments of the market have been over the year. In June 2020, the Georgian electricity generation market was slightly above the threshold of a concentrated market, with an HHI value of 2,632 (Figure 19). This is way lower than the level in June 2019 (with an HHI value of 3,555) and higher than in May 2020 (HHI was 1,527). As for the consumption segment, in June 2020 the HHI consumption approached from below the threshold for a highly concentrated market, reaching the value of 2,427 (above the level for June 2019 and the level for May 2020). Concentration in the demand segment of the market seems still on the rise.

Figure 19 - Hirschman-Herfindahl Index for Power Generation



Source: ESCO

Figure 20 - Hirschman-Herfindahl Index for Power Consumption



Source: ESCO