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Policy Institute

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ELECTRICITY MARKET REVIEW

ISET POLICY INSTITUTE

ENERGY AND ENVIRONMENT POLICY RESEARCH CENTER

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INFORMATION

- There was a decrease in total electricity generation on a yearly and on a monthly basis
- Consumption increased on a monthly and a yearly basis
- The consumption exceeded the generation by 54 mln. kWh
- Imported electricity came mainly from Azerbaijan
- Georgia mainly exported electricity to Armenia
- According to the Hirschmann-Herfindahl Index (HHI) Georgian electricity market remained highly concentrated with an HHI value of 2727

ABBREVIATION USED

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

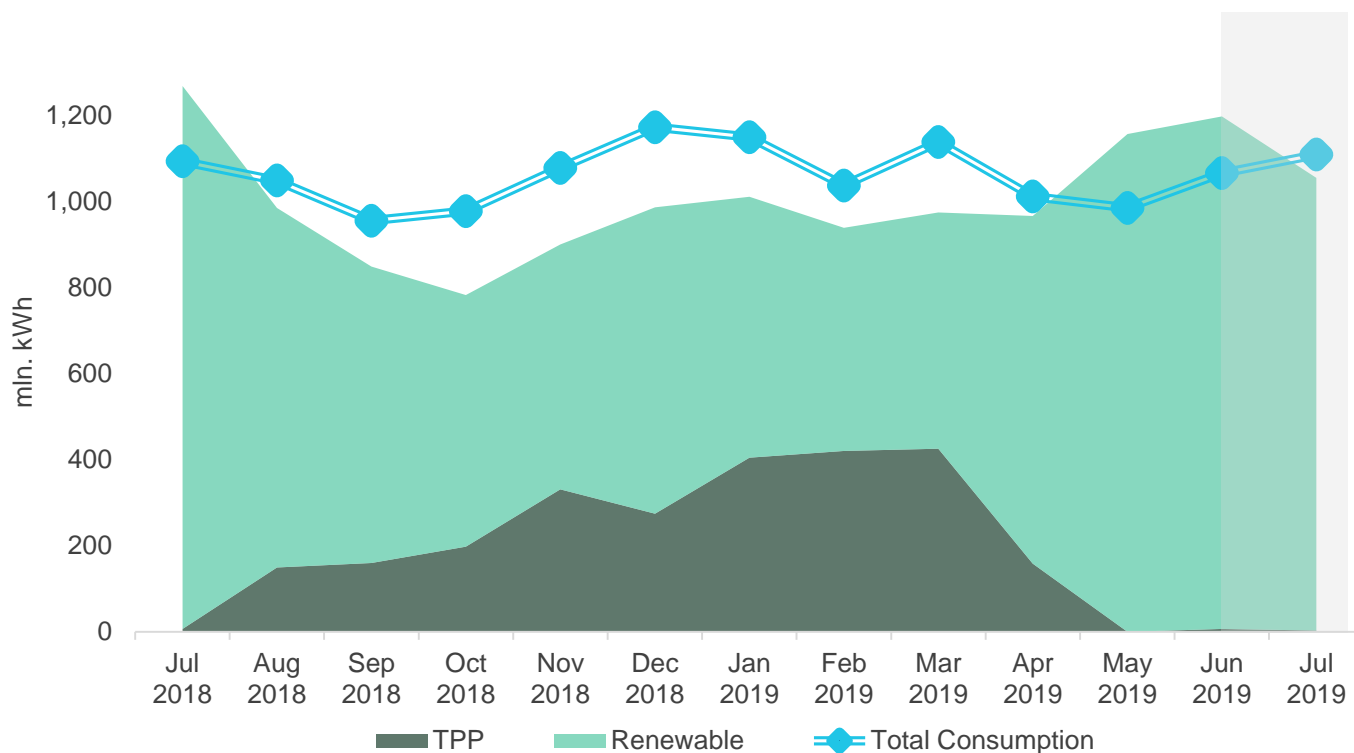
1. Generation – Consumption – Trade

In July 2019, Georgian power plants generated 1,055 mln. kWh of electricity (Figure 1). This represents a 16.8% decrease in total generation, compared to the previous year (in July 2018, the total generation was 1,268 mln. kWh). The decrease in generation on a yearly basis comes from the decrease in thermal (-52%) and hydro power generation (-17%), more than offsetting the increase in wind power generation (+11%).

On a monthly basis, generation decreased by 12% (in June 2019, total generation was 1,198 mln. kWh). The monthly decrease in total generation was the result of a decrease in electricity produced by thermal plants (-52% with respect to June 2019) and hydropower plants (-12% with respect to June 2019) more than offsetting an increase in wind power generations (+63% compared to June 2019).

The consumption of electricity on the local market was 1,109 mln. kWh (+1% and +4% compared to July 2018, and June 2019 respectively) (Figure 1). In July 2019, the total consumption exceeded the total generation by 54 mln kWh which is around 5% of total generation (In contrast in July 2018 difference between total generation and consumption resulted in a surplus of 175 mln. kWh, that was 14% of the total generation for the month).

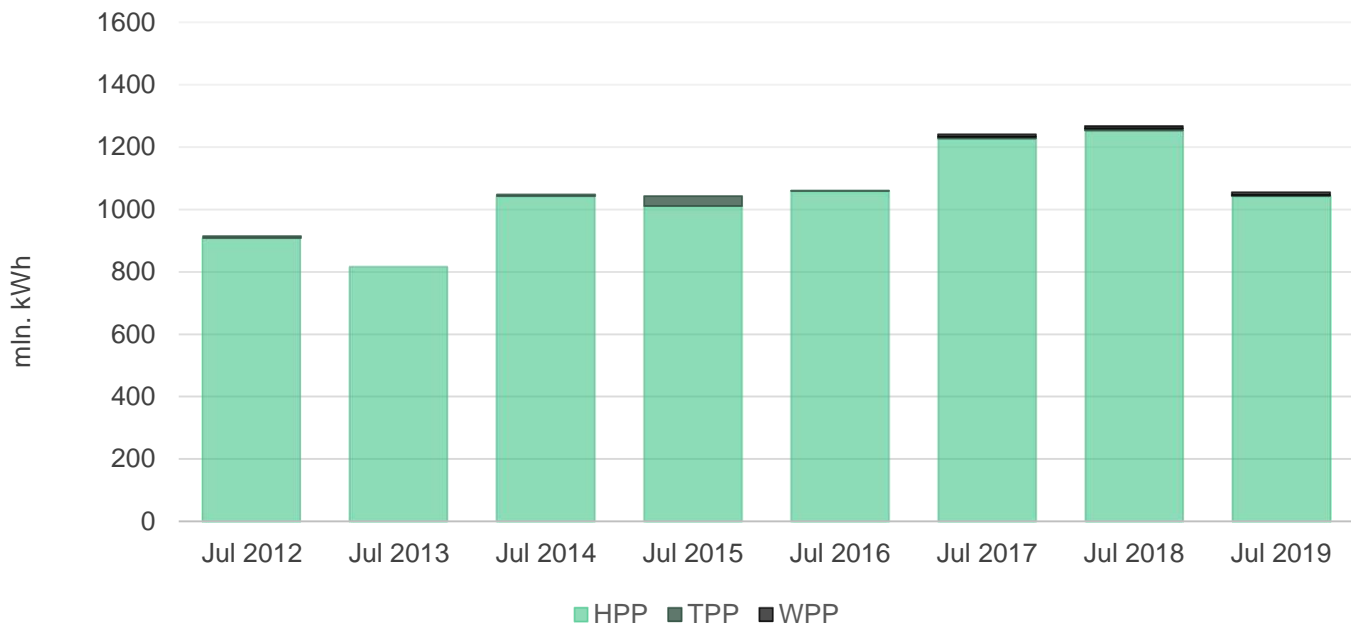
Figure 1 - Electricity Consumption and Generation



Source: Electricity System Commercial Operator (ESCO)

As usual, most generation came from hydropower plants (HPPs). In July 2019, hydropower (HPP) generation amounted to 1,043 mln. kWh (98.8% of total); wind power (WPP) generation was 9 mln. kWh (0.8% of total), and thermal power (TPP) generation was 3 mln. kWh (0.3% of total) (Figure 2).

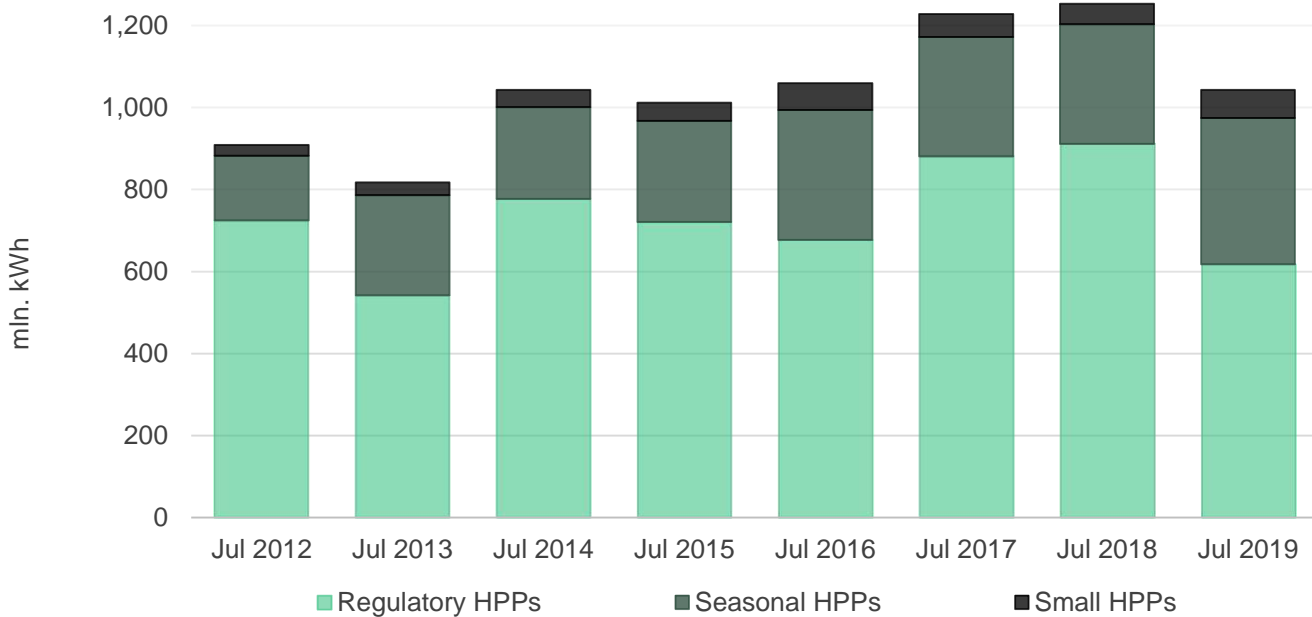
Figure 2 - Electricity Generation by Sources



Source: ESCO

Among hydropower generators, large (regulatory) HPPs produced 59% (617 mln. kWh) of electricity, while seasonal and small HPPs produced 34% (356 mln. kWh) and 7% (69 mln. kWh), respectively (Figure 3).

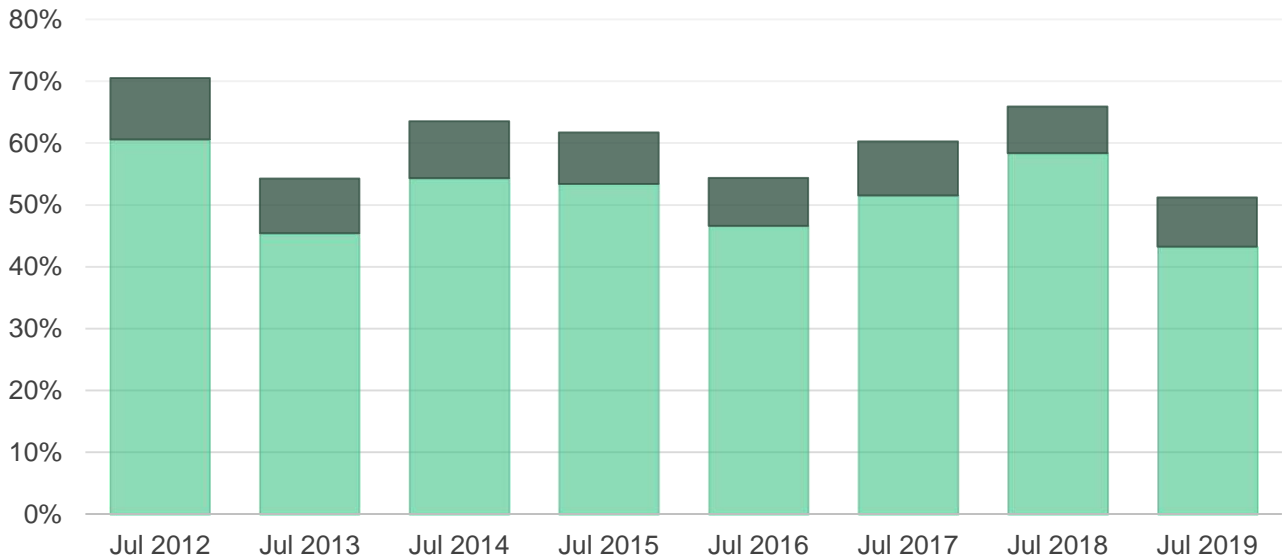
Figure 3 - HPP Generation by Type



Source: ESCO

Among the large HPPs, Enguri and Vardnili generated the largest power, producing 540 mln. kWh (88% of generation for regulatory HPPs), with 456 mln. kWh and 84 mln. kWh, respectively. They represent around 51% of the total generation (Figure 4).

Figure 4 - Share of Enguri and Vardnili in Total Generation

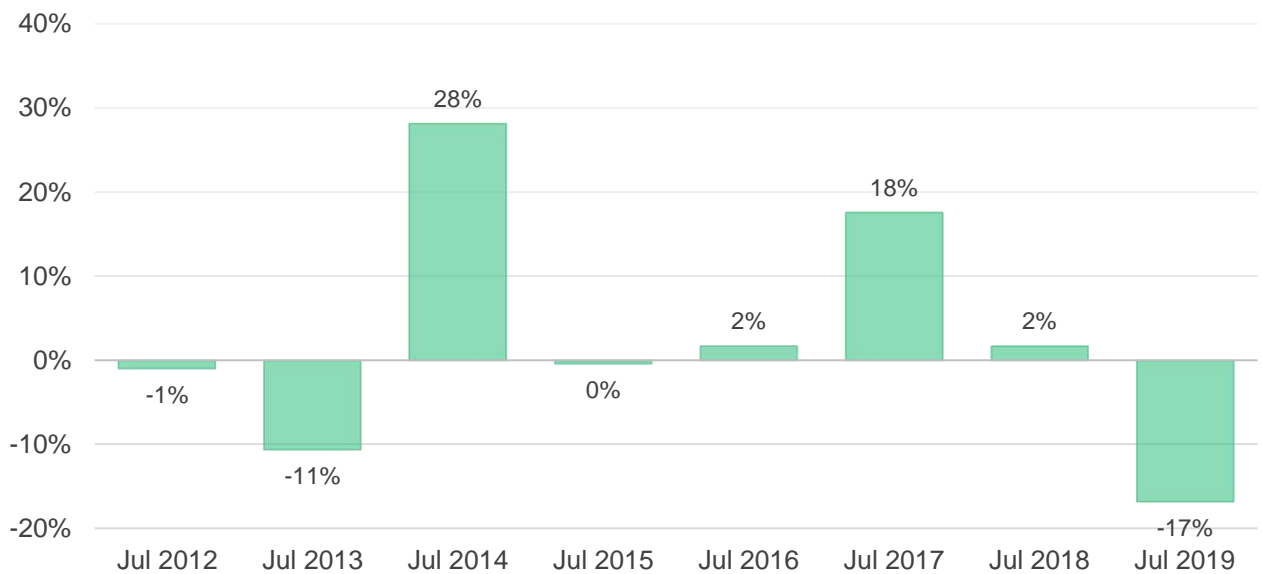


Source: ESCO

Enguri HPP

Vardnili HPP

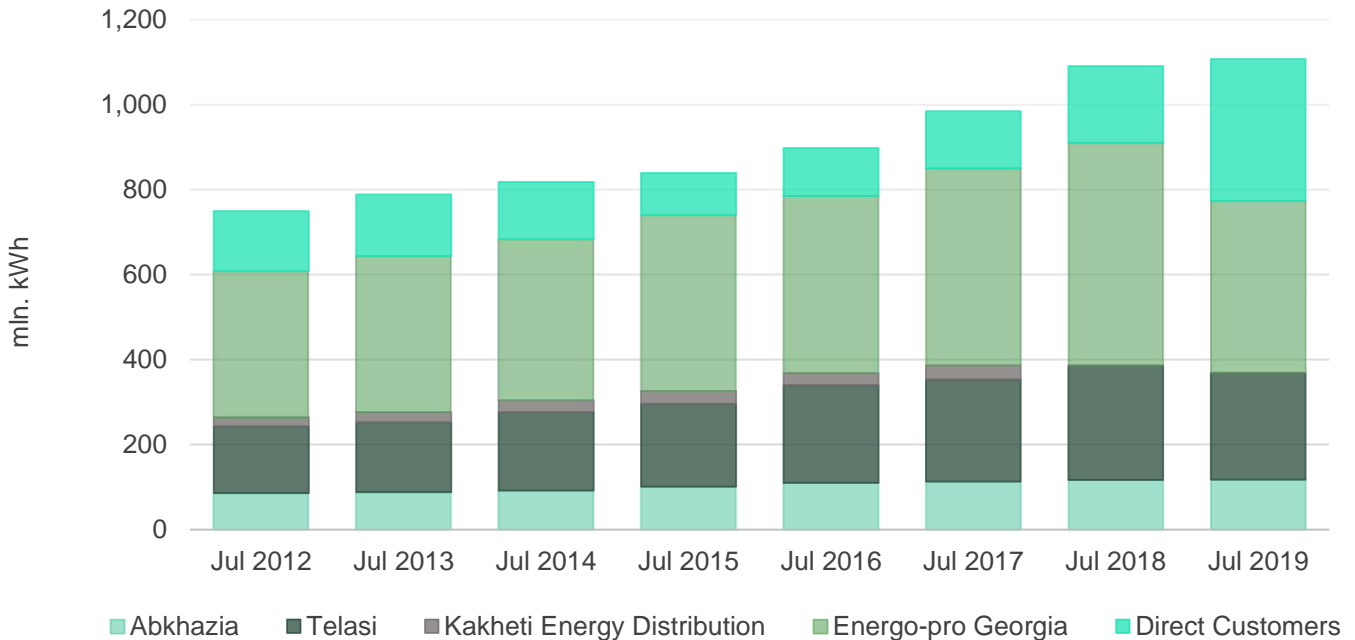
Figure 5 - Growth of Generation (% y/y)



Source: ESCO

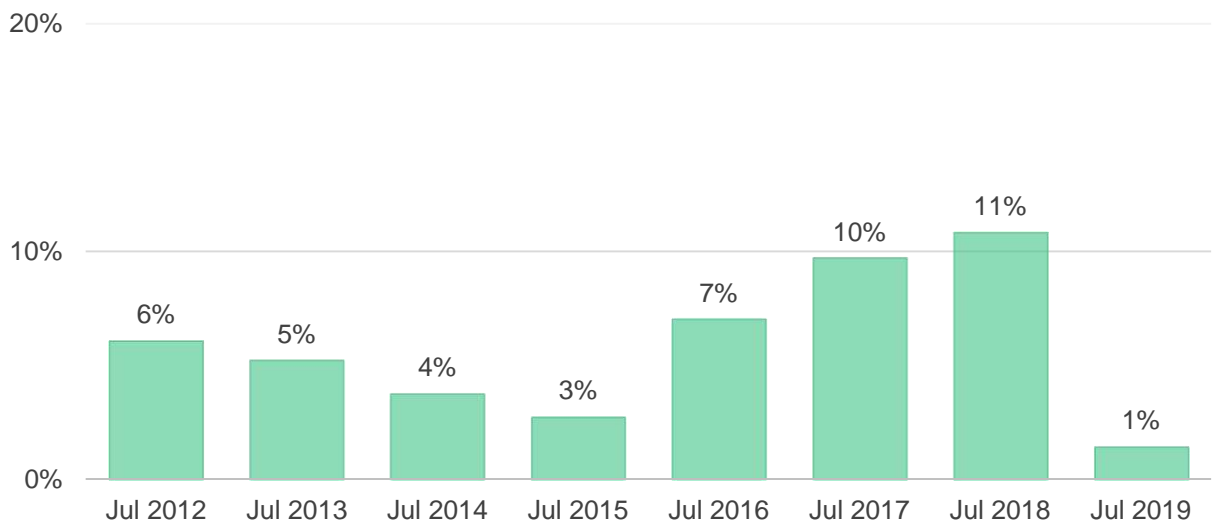
Total electricity demand came from: Energo-Pro Georgia¹ (36% - 404 mln. kWh), Telasi (23% - 252 mln. kWh), Abkhazia (11% - 117 mln. kWh), and direct customers (30% - 334 mln. kWh) (Figure 6). Overall, there was an annual increase of 1% in the total electricity consumption in July 2019, compared to July 2018 (Figure 7). Annual demand from Abkhazia, and direct consumers increased by 1% and 84% respectively, more than offsetting the 7% the 23% decrease from Telasi and Energo-Pro Georgia, respectively.²

Figure 6 - Electricity Consumption by Type of Customer



Source: ESCO

Figure 7 - Electricity Consumption Growth (% , y/y)



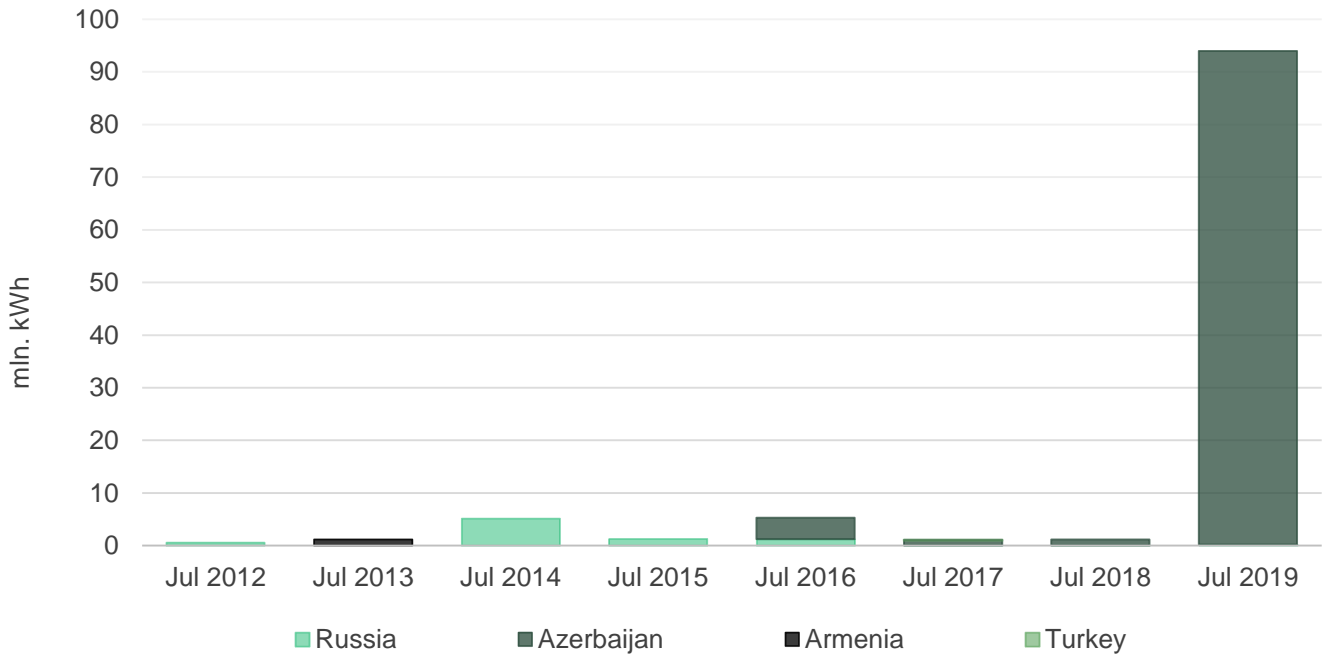
Source: ESCO

¹ Energo-Pro Georgia acquired Kakheta 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. This is the main reason behind decrease in electricity consumption from Telasi and Energo-Pro Georgia and increase of direct consumption

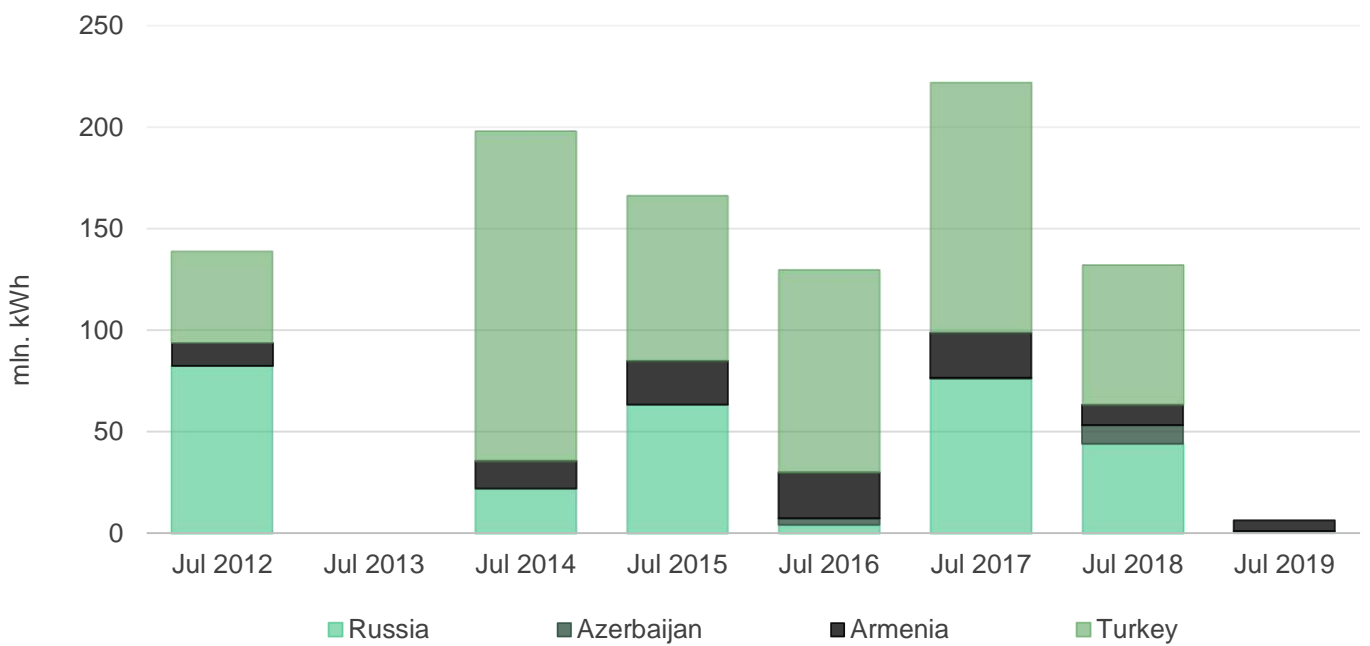
In July 2019, Georgia imported 94 mln. kWh of electricity 99.8% from Azerbaijan and 0.2% from Russia (Figure 8). In July 2019, Georgia exported 6.26 mln. kWh, out of which 13.8% to Azerbaijan, and 86.2% to Armenia (Figure 9), this is more than 20-times reduction compared to 132 mln. kWh of July 2018.

Figure 8 - Imports by Year



Source: ESCO

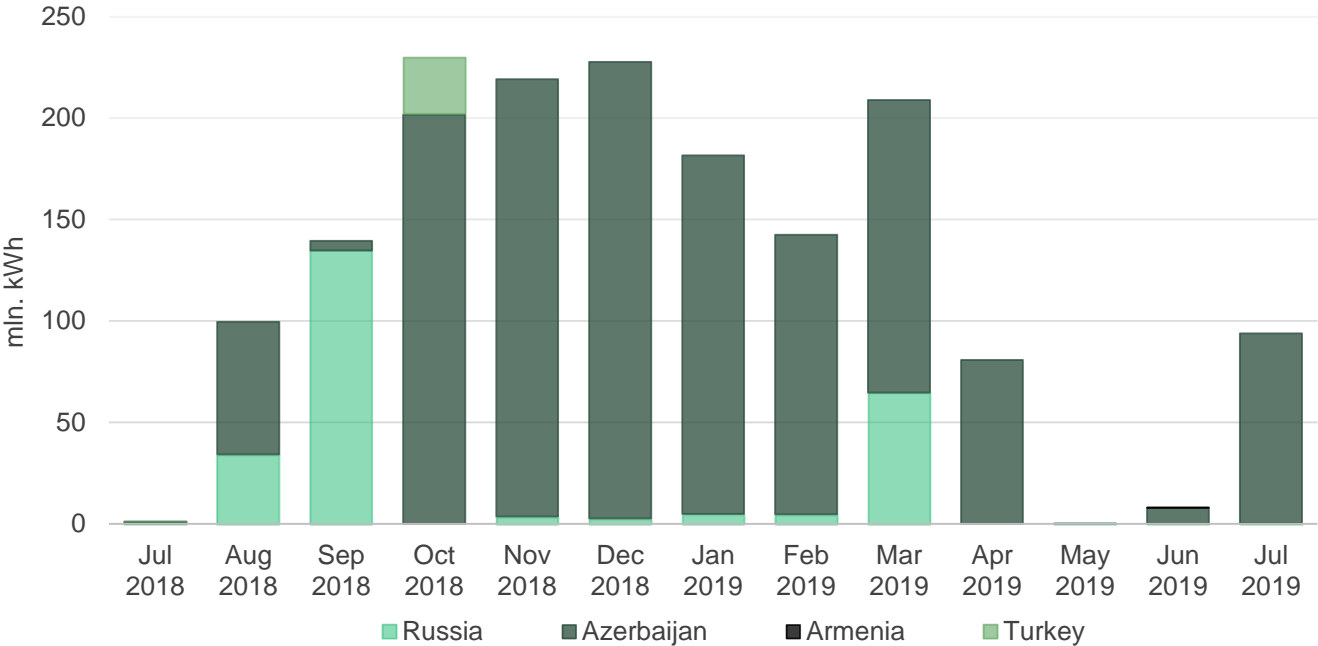
Figure 9 - Exports by Year



Source: ESCO

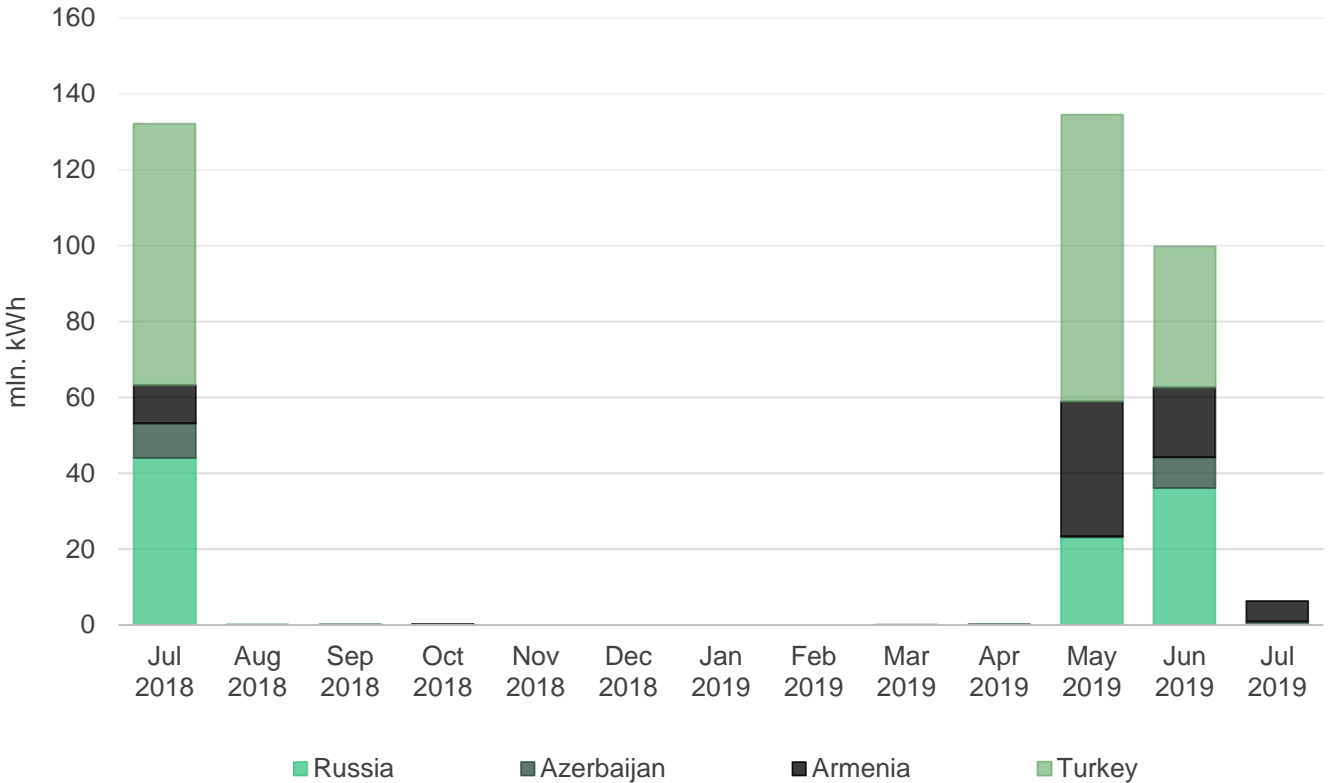
In July 2019, electricity imports increased more than 10 times from 8 to 94 mln kWh. compared to the last month (Figure 10). As for the exports, they decreased almost 16 times from 100 to 6.26 mln. kWh (Figure 11). As mentioned above, in this month the main export partner country was Armenia.

Figure 10 - Imports by Month



Source: ESCO

Figure 11 - Exports by Month

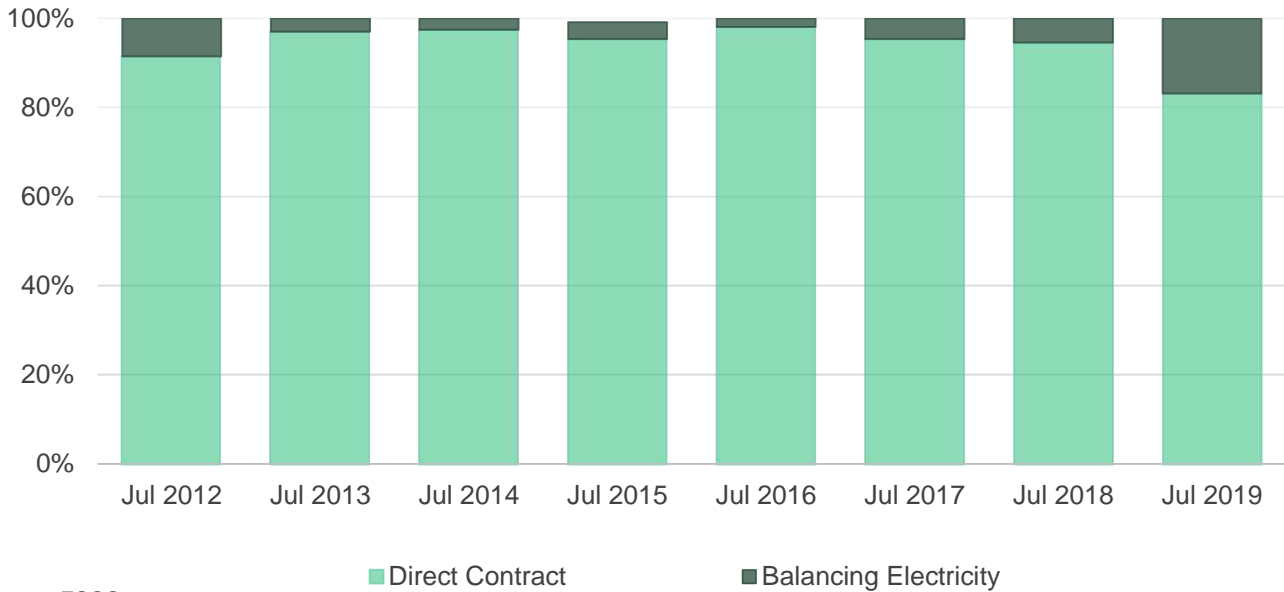


Source: ESCO

2. Market Operations

In June 2019, 83% of the electricity sold on/from the local market was sold through direct contracts. The remaining 17% was sold as balancing electricity (Figure 12).

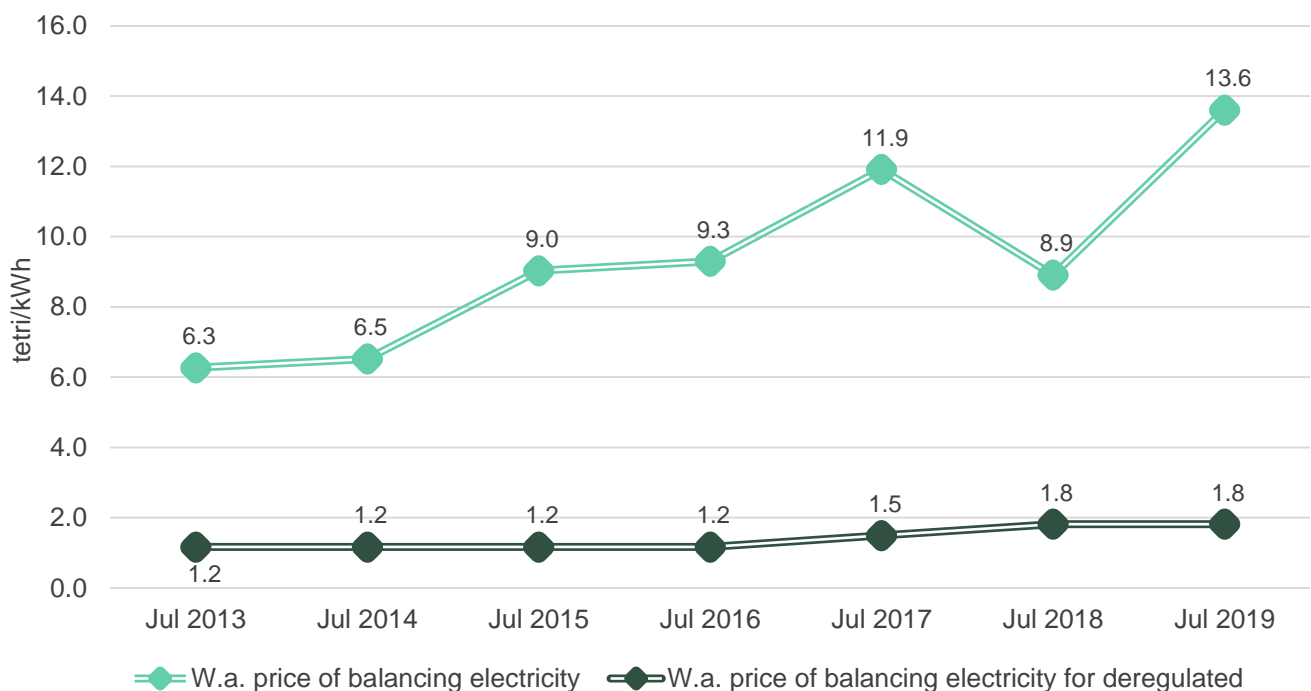
Figure 12 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

The weighted average price of balancing electricity was 13.6 tetri/kWh in July 2019, which is an annual increase of 53% compared to July 2018. As for the weighted average price for deregulated (small) HPPs, it was 1.8 tetri/kWh, which is similar indicator compared to the corresponding month of the previous year (Figure 13).

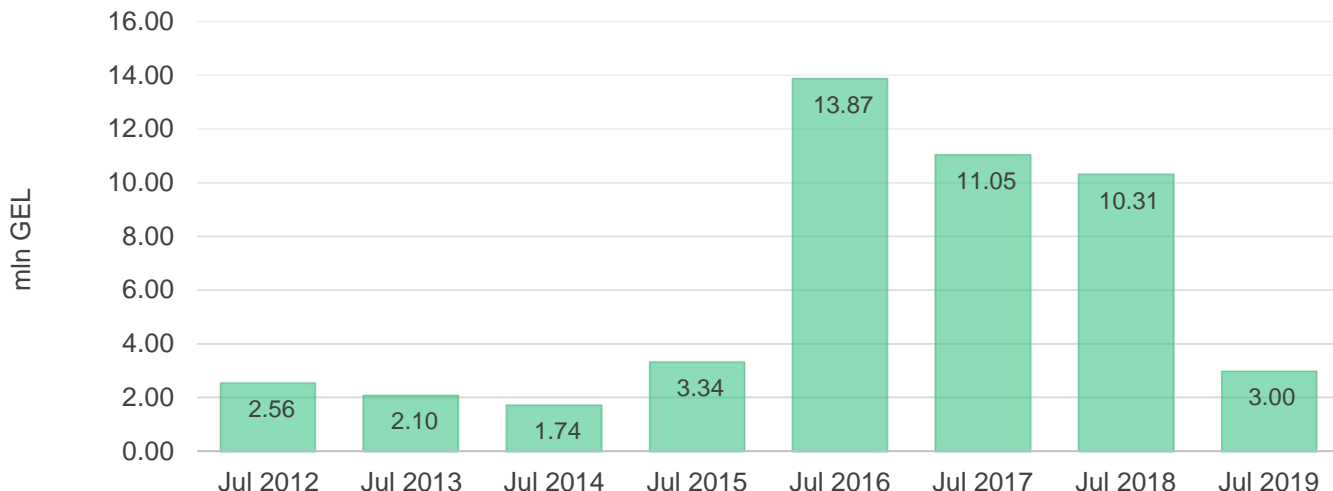
Figure 13 - Balancing Electricity Prices Weighted Average and Weighted Average Price for Deregulated HPPs



Source: ESCO

Guaranteed capacity payments in July 2019 were roughly 3 mln. GEL, which represents -71% decrease compared to July 2018 (Figure 14).

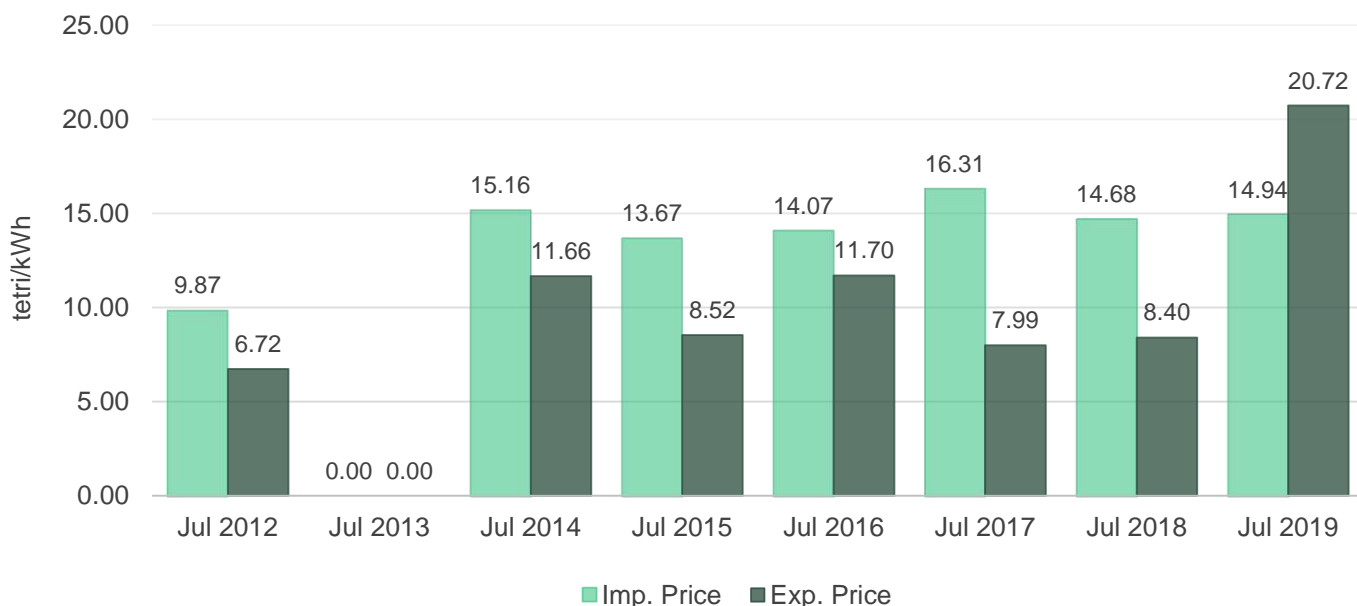
Figure 14 - Cost of Guaranteed Capacity



Source: ESCO

The average electricity import price in July 2019 increased by 2%³ (from 6 ¢ or 14.68 tetri per kWh to 5.21 ¢ or 14.94 tetri per kWh) compared to July 2018 (Figure 15). The average import price decreased on a monthly basis. Import price was 5.5 ¢ or 15.28 tetri per kWh in June 2019. The average electricity export price in July 2019 increased by 147% (from 2.87 ¢ or 8.40 tetri per kWh to 7.09 ¢ or 20.72 tetri per kWh) compared to July 2018 (Figure 15). The average export price also increased on a monthly basis, up from 3.2 ¢ or 8.91 tetri per kWh in June 2019.

Figure 15 - Prices Import/Export



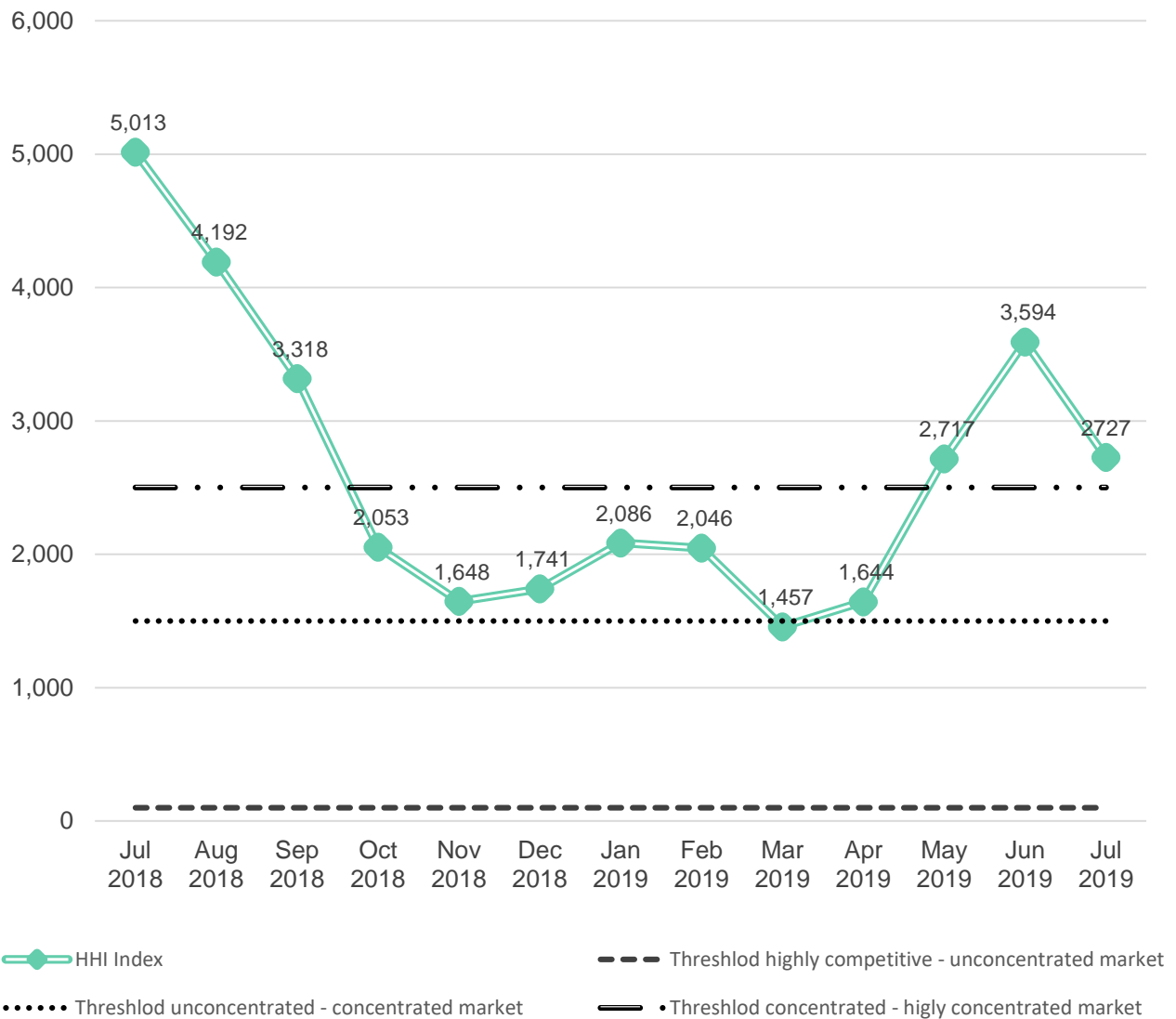
Source: ESCO

³ Mostly because of large depreciation of Georgian Lari

3. Market Concentration

In conclusion, we utilize the Hirschmann-Herfindahl (HHI) market concentration index to evaluate how competitive the generation segment of the market has been over the year. In June 2019, the Georgian electricity market remained highly concentrated, with an HHI value of 2,727 (Figure 16). However, the level of concentration is lower compared to the same period of the previous year and the previous month (with an HHI value of 5,013 in July 2018 and 3,594 June 2019).

Figure 16 - Hirschman-Herfindahl Index for Power Generation



Source: ESCO