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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 basis (HPP generation declined) and an increase in electricity generation on a monthly basis (TPP generation increased)
- Consumption decreased both on a yearly and monthly basis
- The Generation-consumption gap remains negative
- Imported electricity came mainly from Azerbaijan
- Imports have declined compared both on a monthly and on a yearly basis
- Georgia did not export any electricity
- According to the Hirschmann-Herfindahl Index (HHI) Georgian electricity market was concentrated

ABBREVIATION USED

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

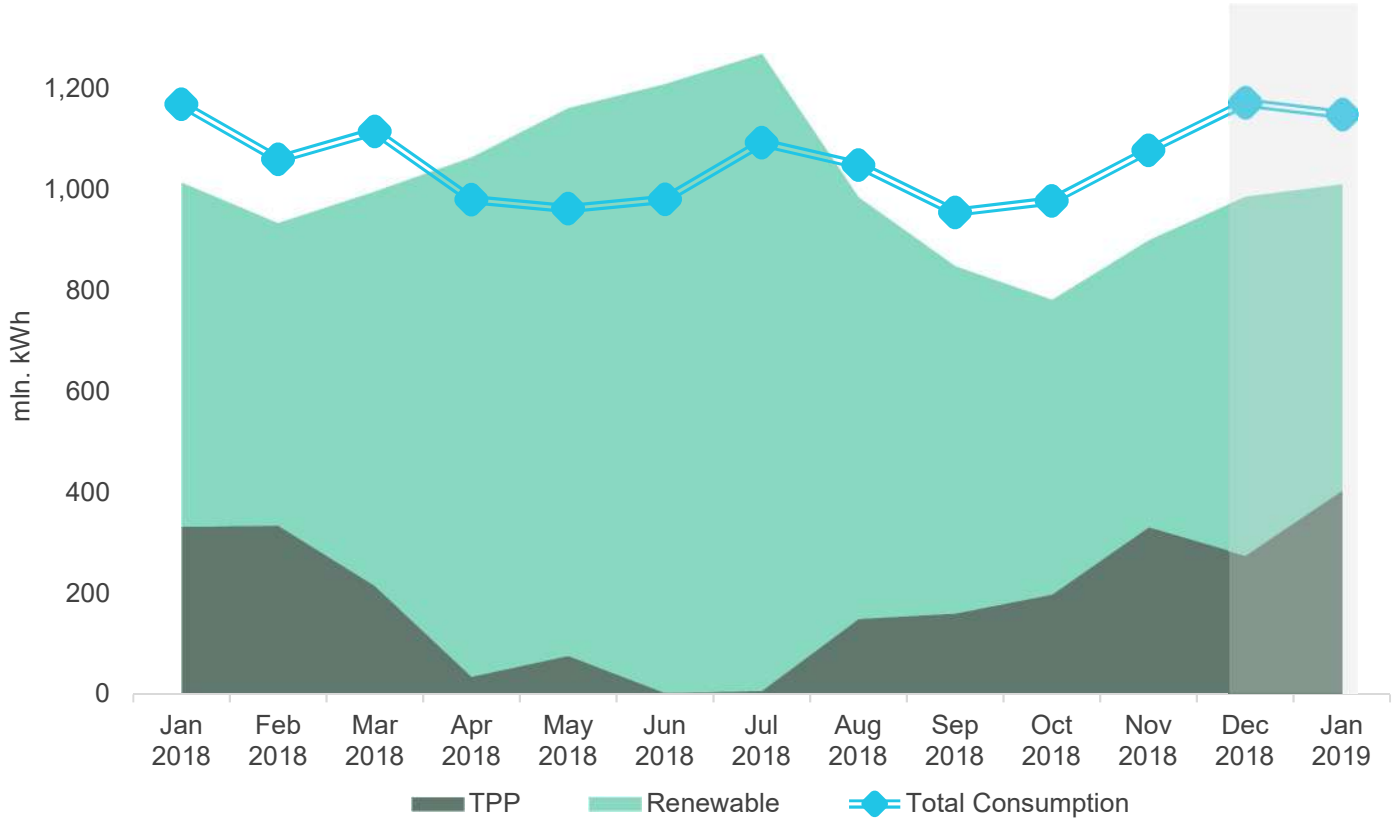
1. Generation – Consumption – Trade

In January 2019, Georgian power plants generated 1011 mln. kWh of electricity (Figure 1). This represents a 0.3% decrease in total generation, compared to the previous year (in 2018, total generation in January was 1014 mln. kWh.) The decrease in generation on a yearly basis comes from decrease in hydro and wind power generation (-11% and -18%), more than offsetting the increase in thermal power generation (+22%).

On a monthly basis, generation increased by 3% (in December 2018, total generation was 986 mln. kWh). The monthly increase in total generation was the result of an increase in electricity produced by thermal power plants (up to 405 mln. kWh, which represents +47% with respect to December 2018), while there was a decrease in generation of hydro and wind power plants (-15% and -10% with respect to December 2018 respectively).

Consumption of electricity on the local market was 1149 mln. kWh (almost -2% compared to both January 2018, and December 2018) (Figure 1). In January 2019, total consumption exceeded generation by 138 mln kWh, which is 12% of the total consumption and 14% of the amount generated (compared to 186 mln. kWh and 19% deficit of the total generation for December 2018).

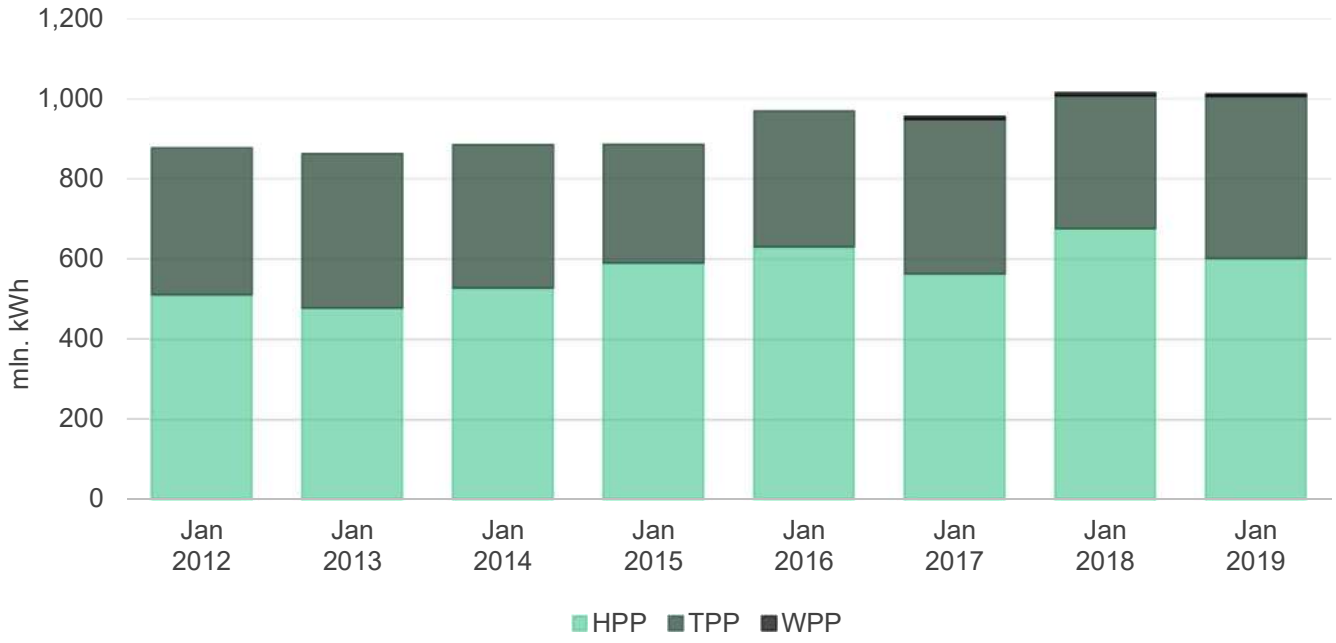
Figure 1 - Electricity Consumption and Generation



Source: Electricity System Commercial Operator (ESCO)

As usual, most generation comes from hydropower plants (HPPs). In January 2019, hydropower (HPP) generation amounted to 601 mln. kWh (59.4% of total); wind power (WPP) generation was 6 mln. kWh (0.6% of total), and thermal power (TPP) generation was 405 mln. kWh (40% of total) (Figure 2).

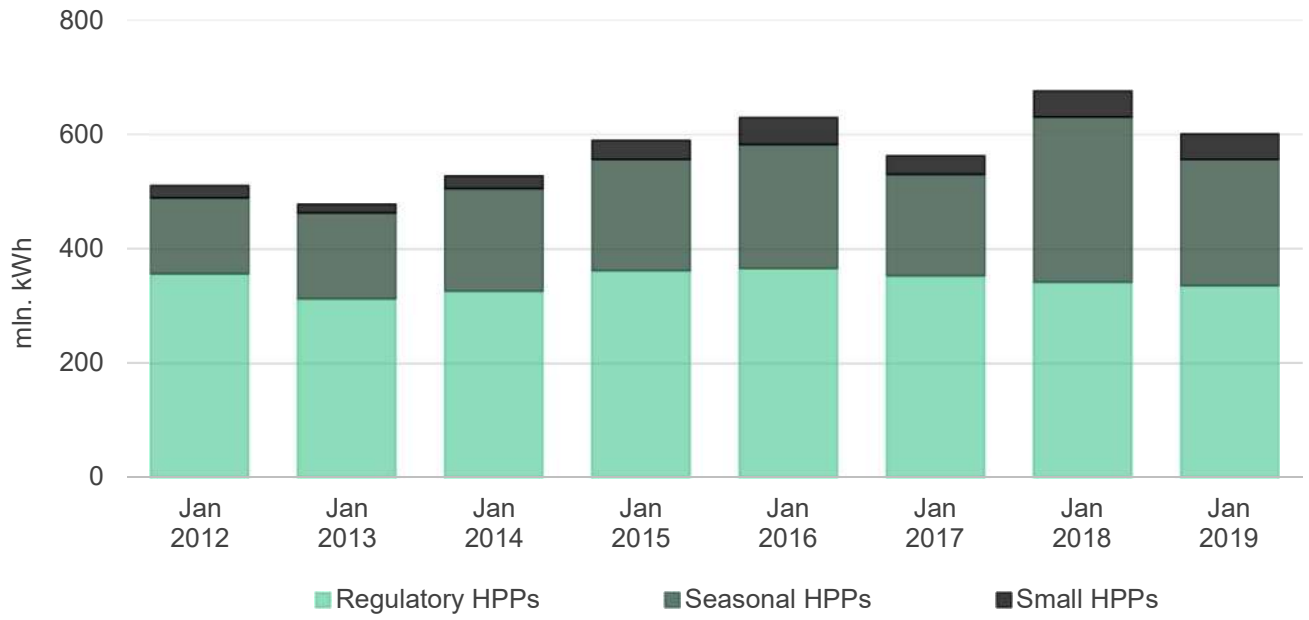
Figure 2 - Electricity Generation by Sources



Source: ESCO

Among hydropower generators, large (regulatory) HPPs produced 56% (335 mln. kWh) of electricity, while seasonal and small HPPs produced 37% (221 mln. kWh) and 7% (44 mln. kWh), respectively (Figure 3).

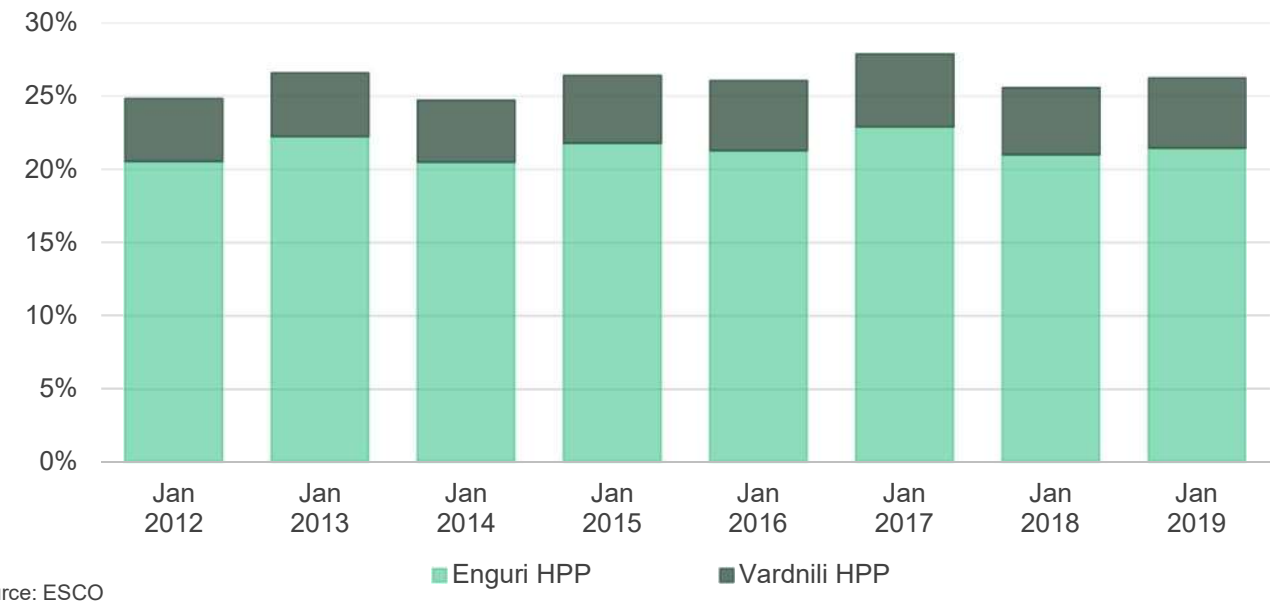
Figure 3 - HPP Generation by Type



Source: ESCO

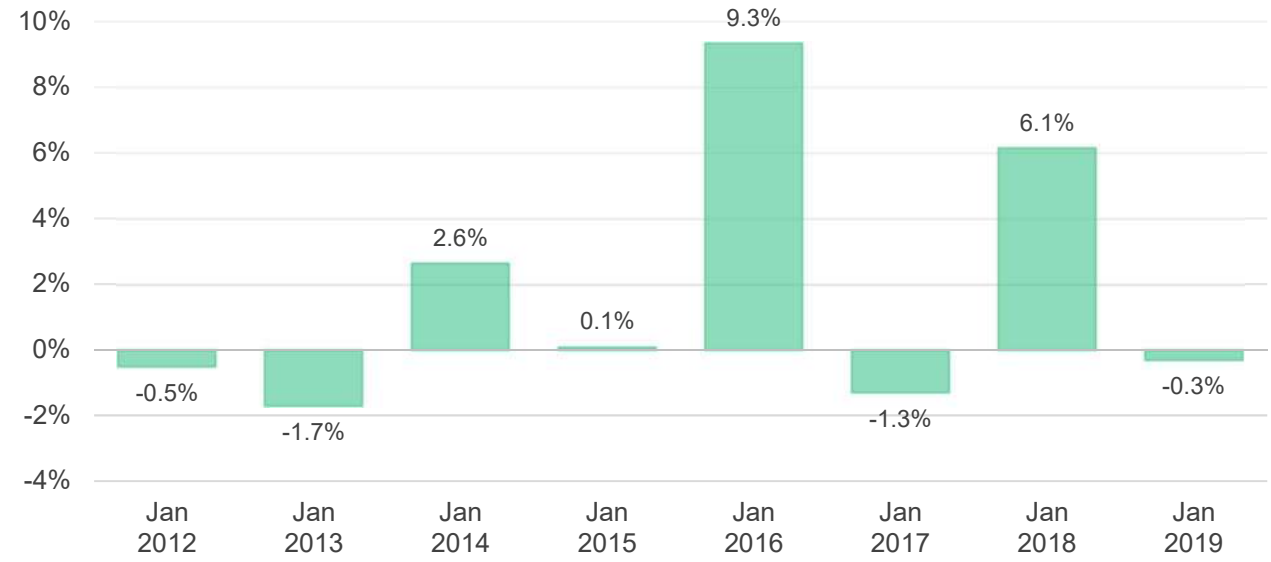
Among the large HPPs, Enguri and Vardnili generated the largest amounts of power, producing 265 mln kWh (26% of total generation), with 217 mln. kWh and 48 mln. kWh, respectively (Figure 4). They also represent around 79% of generation for regulatory HPPs.

Figure 4 - Share of Enguri and Vardnili in Total Generation



Source: ESCO

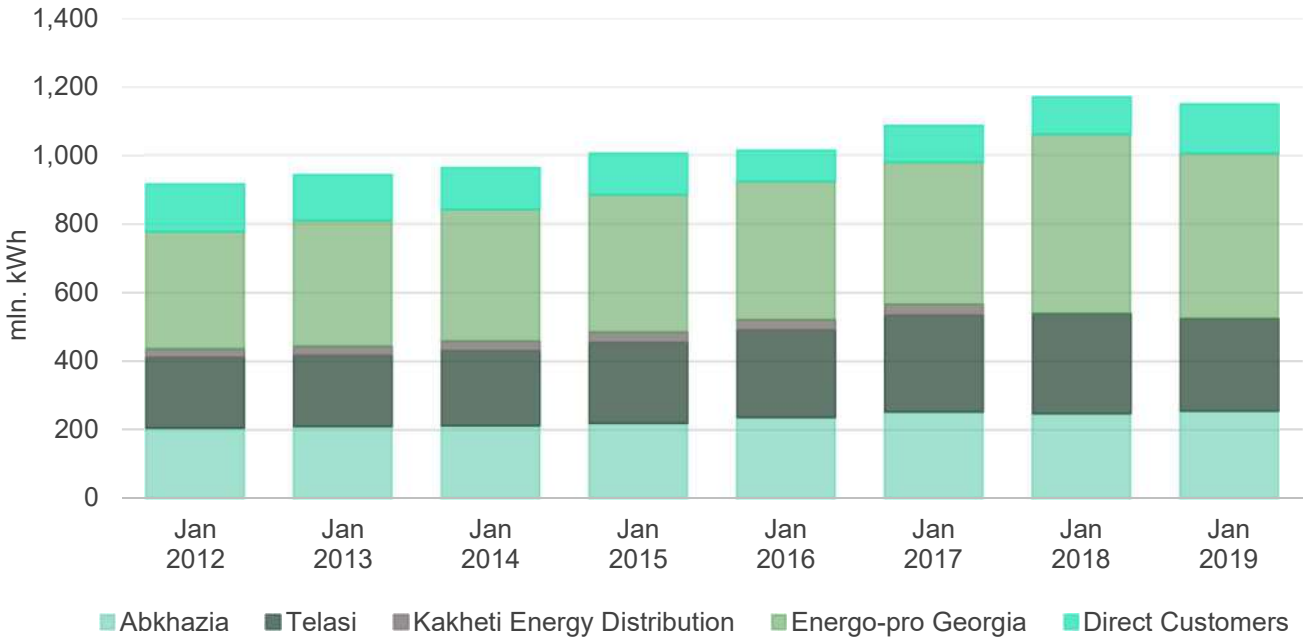
Figure 5 - Growth of Generation (%, y/y)



Source: ESCO

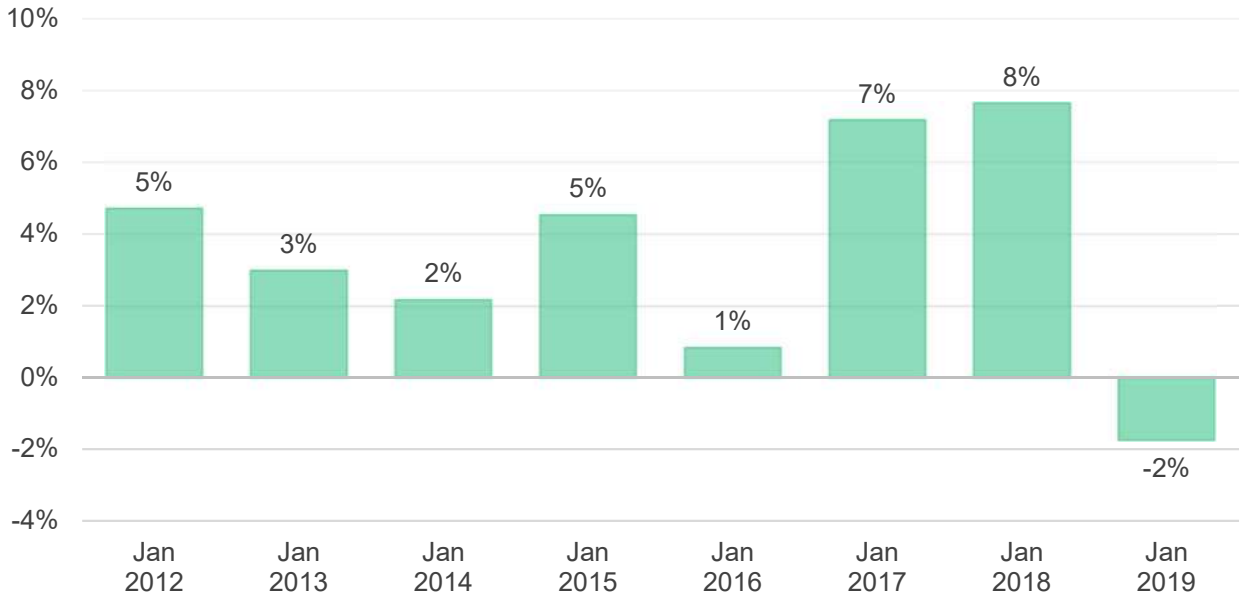
Total electricity demand came from: Energo-Pro Georgia[1] (42% - 480.7 mln. kWh), Telasi (23% - 269.3 mln. kWh), Abkhazia (22% - 254.3 mln. kWh), and direct customers (13% - 143.9 mln. kWh) (Figure 6). Overall, there was an annual decrease of 2% in electricity consumption in January 2019, compared to January 2018 (Figure 7). Annual demand from both Energo-Pro Georgia and Telasi decreased by 8% offsetting 33% and 3% increase from direct consumers and Abkhazia respectively.

Figure 6 - Electricity Consumption by Type of Customer



Source: ESCO

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

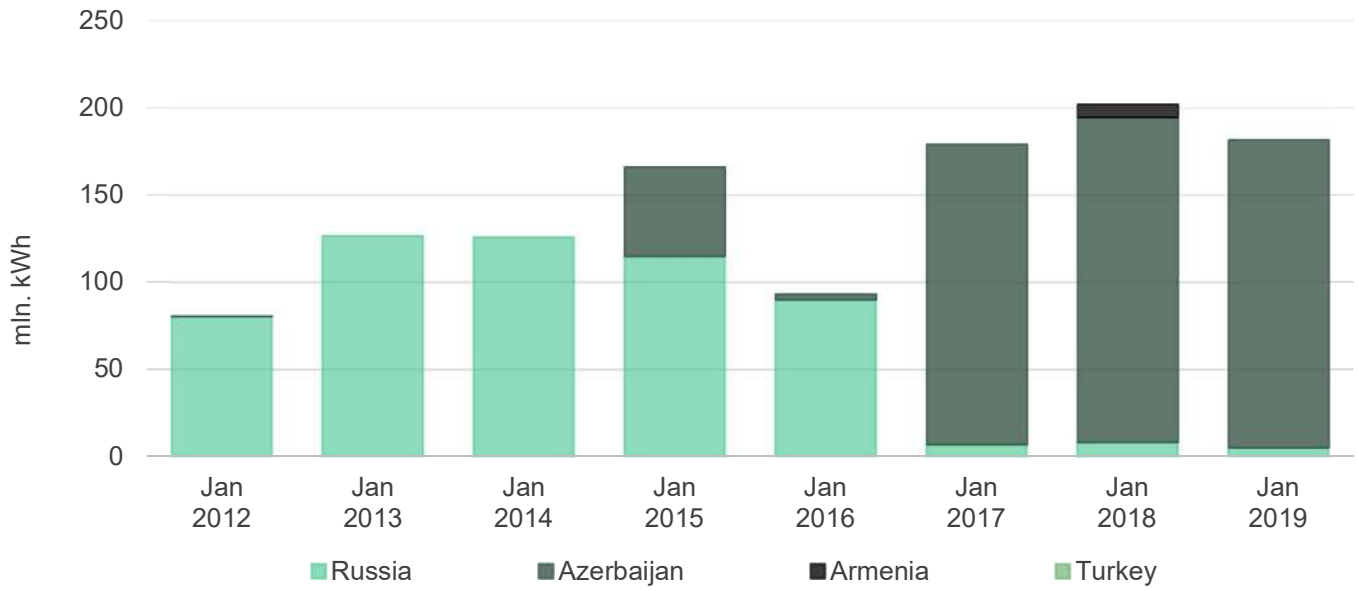


Source: ESCO

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

In January 2019, Georgia imported 182 mln. kWh of electricity. 97% of this electricity was imported from Azerbaijan, while 3% was imported from Russia (Figure 8). In January 2019, Georgia did not export any electricity.

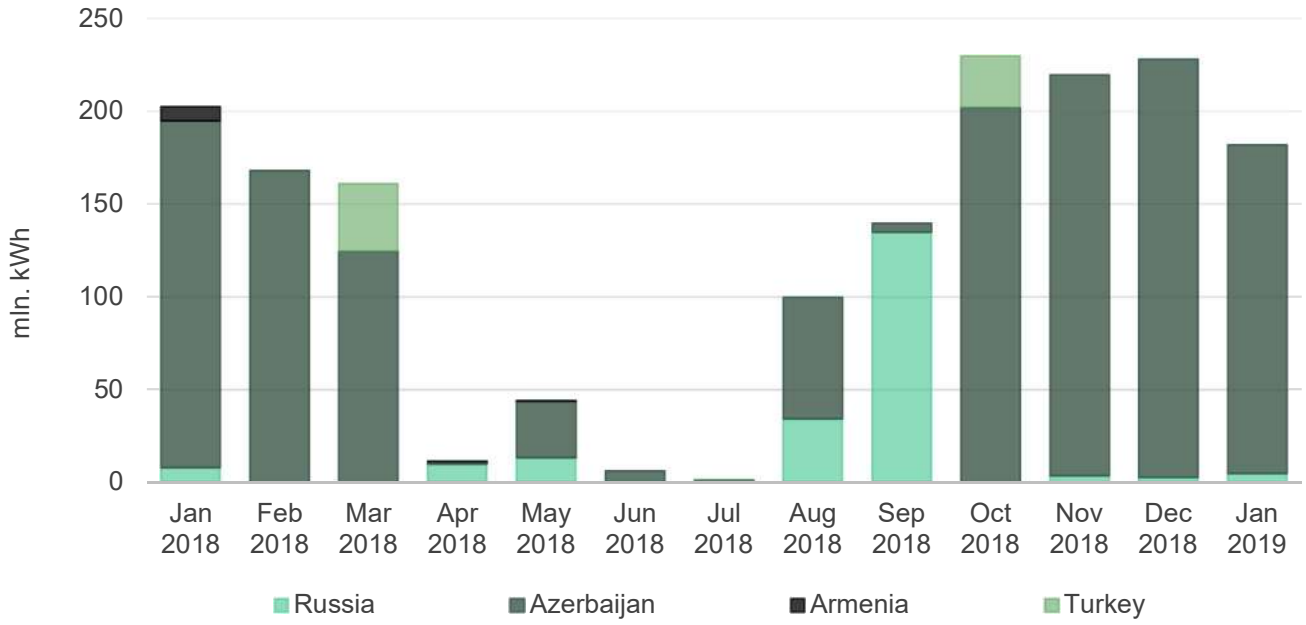
Figure 8 - Imports by Year



Source: ESCO

In January 2019, electricity imports decreased by 20% compared to December 2018 and decreased by 10% compared to the same month in 2018. As mentioned above, in this month the main electricity provider was Azerbaijan, strengthening its role of the main electricity provider to the Georgian system (Figure 9).

Figure 9 - Monthly Imports in 2018

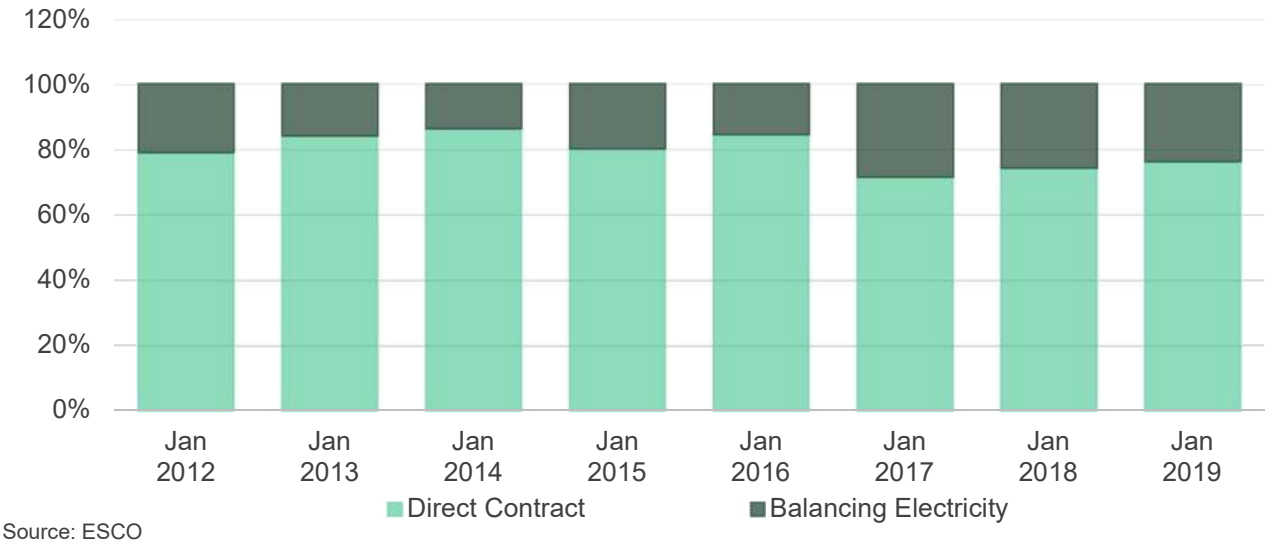


Source: ESCO

2. Market Operations

In January 2019, 76% of the electricity sold on/from the local market (889 mln. kWh) was sold through direct contracts. The remaining 24% (278 mln. kWh) was sold as balancing electricity (Figure 10).

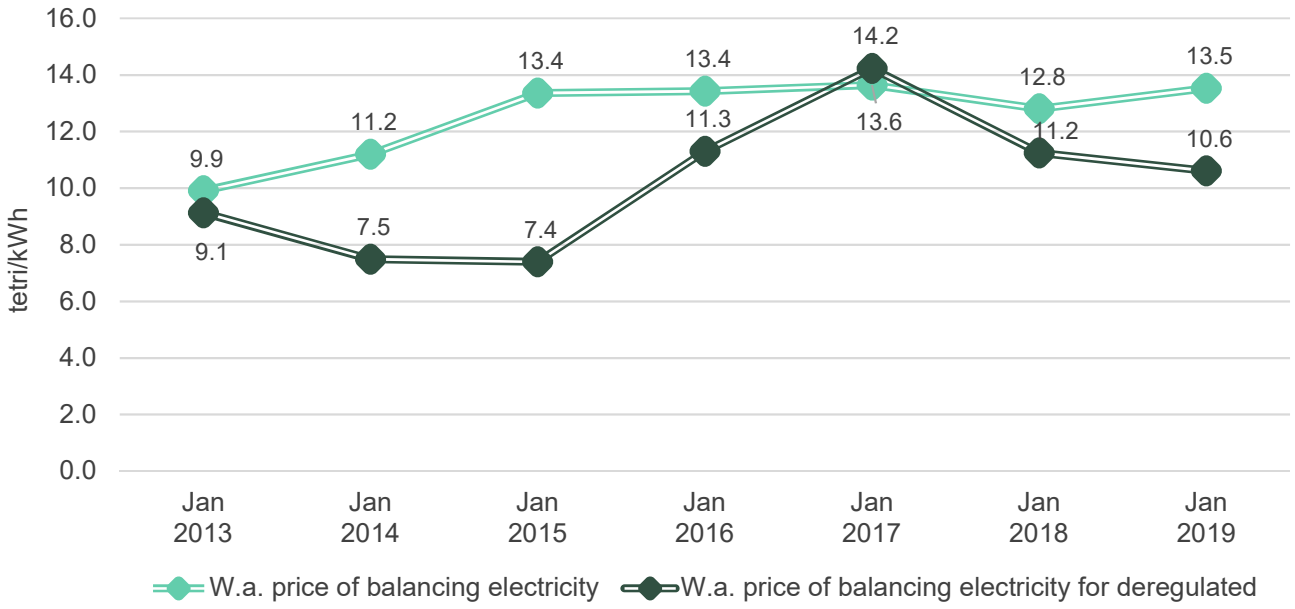
Figure 10 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

The weighted average price of balancing electricity was 13.5 tetri/kWh in January 2019, which is an annual increase of 6% compared to January 2018. As for the weighted average price for deregulated (small) HPPs, it was 10.6 tetri/kWh, which represented 6% decrease compared to the corresponding month of the previous year (Figure 11).

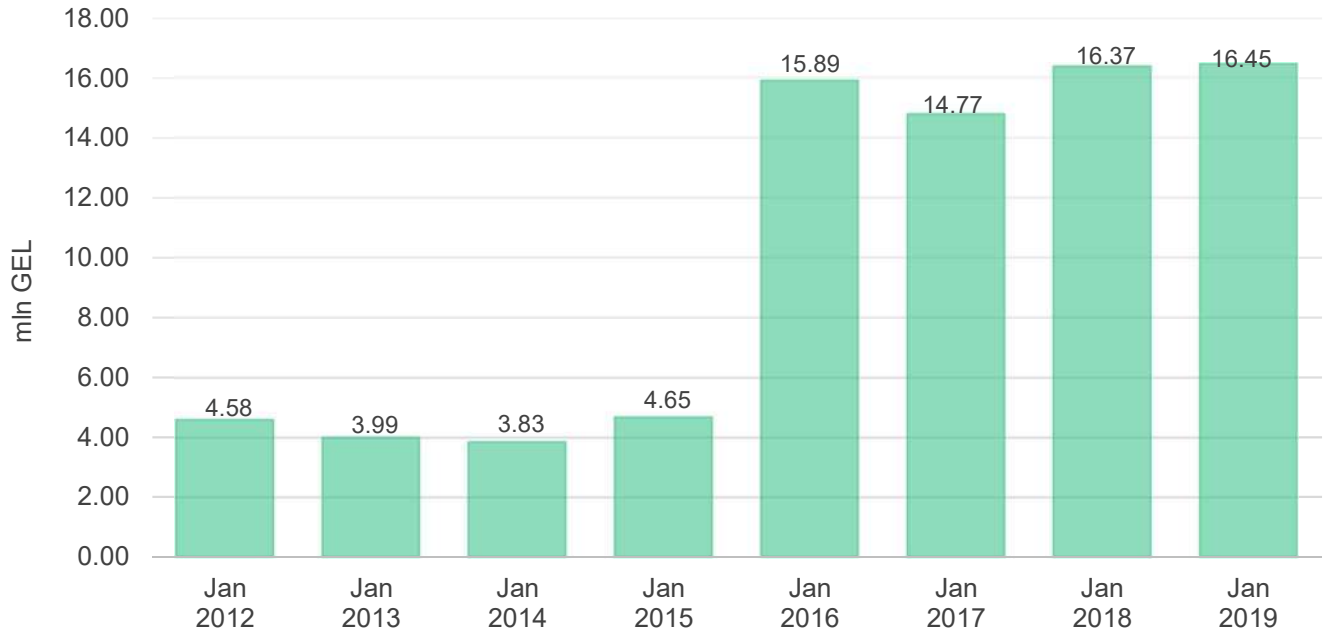
Figure 11 - Balancing Electricity Prices Weighted Average and Weighted Average Price for Deregulated HPPs



Source: ESCO

Guaranteed capacity payments in January 2019 were roughly 16.45 mln. GEL, which was reflected in 1% decrease compared to January 2018 (Figure 12).

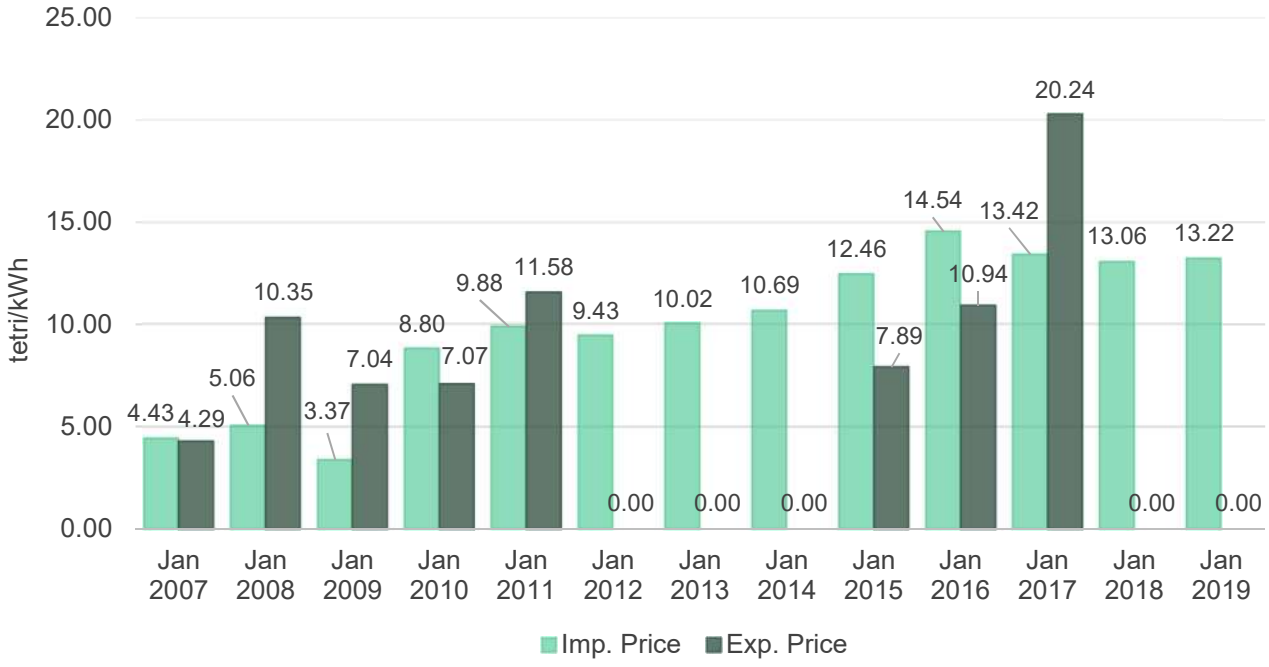
Figure 12 - Cost of Guaranteed Capacity



Source: ESCO

The average electricity import price in January 2019 decreased to 4.9 ¢, however increased in Gel terms to 13.2 tetri per kWh (an increase of 1%) compared to January 2018 (Figure 13), but down from the previous month (5.2 ¢, or 13.9 tetri per kWh, respectively).

Figure 13 - Prices Import/Export

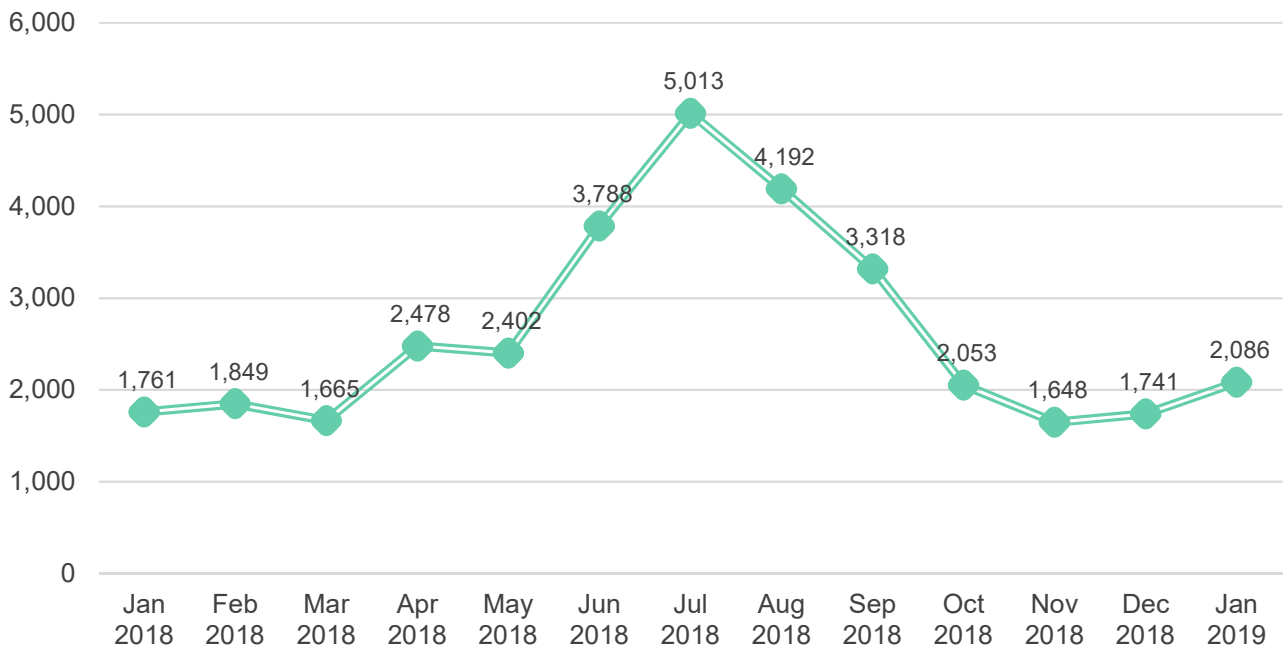


Source: ESCO

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 past 12 months. In January 2019, the Georgian electricity market was concentrated, with an HHI value of 2086 (Figure 14). The level of concentration is substantially higher, compared to the same period of the previous year (with an HHI value of 1761 in January 2018 the Georgian market was much closer to be classified as un-concentrated).

Figure 14 - **Hirschman-Herfindahl Index for Power Generation**



Source: ESCO