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ELECTRICITY MARKET REVIEW

ISET POLICY INSTITUTE AGRICULTURE & RURAL POLICY RESEARCH CENTER

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INFORMATION

- In November 2023 there was a decrease in the total electricity generation by 11% on a yearly basis and decrease by 4% on a monthly basis.
- Consumption decreased by 8% on a yearly basis and increased by 5% compared to the previous month.
- Consumption exceeded generation by 30 mln. kWh which was 3% of the total generation and 3% of the total consumption in November 2023.
- There were imports of 80.6 mln. kWh in November 2023.
- There were exports of 0.157 mln. kWh in November 2023.
- The main import partner country was Russia.
- The main export partner country was Azerbaijan.
- The price of imports reached 0.14 ჯ, or 0.37 tetri per kWh.
- The price of exports reached 6.5 ჯ, or 17.6 tetri per kWh.
- The HHI index for the Georgian electricity generation market fell between the threshold of highly concentrated and concentrated market. In November 2023, its level was 2,129.
- The HHI for the Georgian electricity consumption market remained below the threshold of a highly concentrated market. In November 2023, its level was 2,280.

ABBREVIATION USED

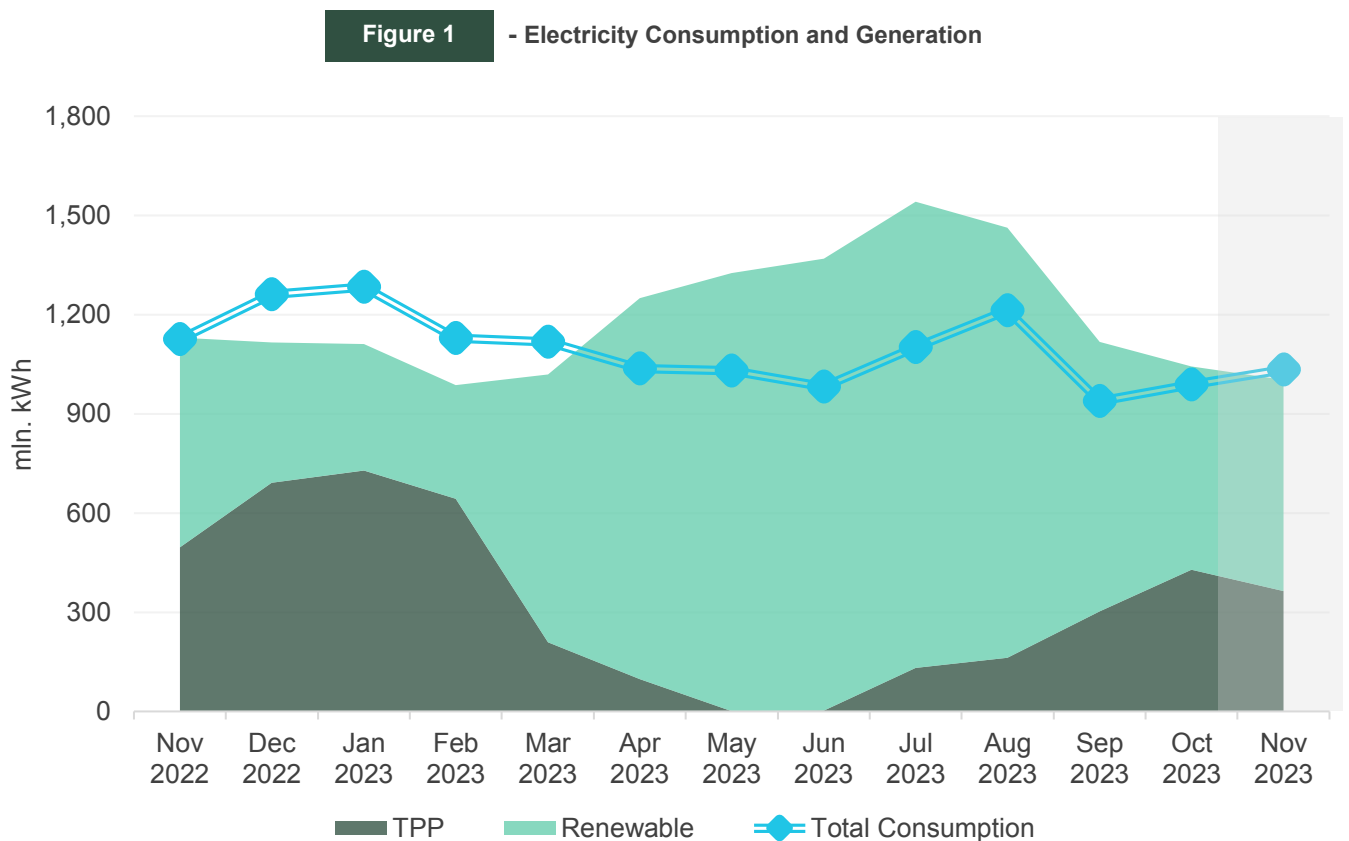
Mln	million
kWh	kilowatt-hour
HPP	Hydro Power Plant
WPP	Wind Power Plant
TPP	Thermal Power Plant
HHI	Hirschmann-Herfindahl Index
Telmico	Tbilisi Electricity Supply Company
Ep Georgia	Ep Georgia Supply
Geostat	National Statistics Office of Georgia
ESCO	Electricity Market Operator

Generation – Consumption – Trade

In November 2023, Georgian power plants generated 1,003 mln. kWh of electricity (Figure 1). This represents an 11% decrease in the total generation compared to the previous year (in November 2022, the total generation was 1,131 mln. kWh). The fall in generation on a yearly basis comes from a decrease in thermal and wind power generation by 27%, and 13%, respectively, while generation of hydro power plant increased by 1%.

On a monthly basis, the generation decreased by approximately 4% (in October 2023, the total generation was 1,043 mln. kWh) (Figure 1). The monthly fall in total generation is induced by a decrease of thermal and wind power generation by 15% and 10%, respectively, while hydro power generation increased by 4%.

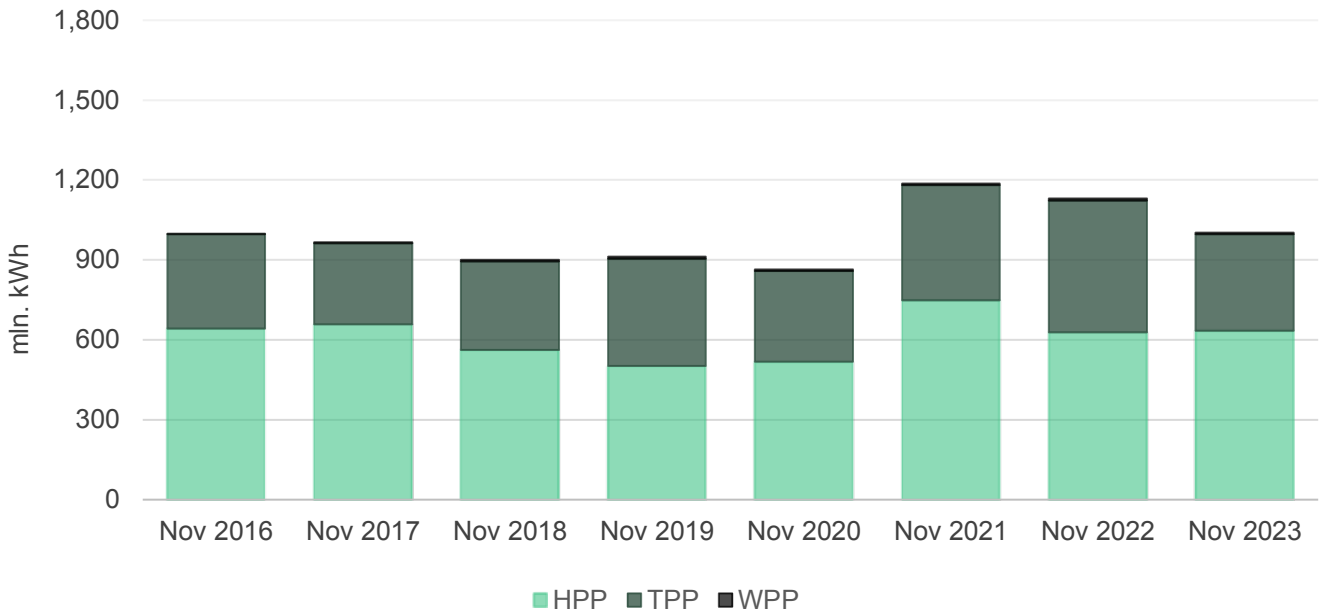
The consumption of electricity on the local market was 1034 mln. kWh (-8% compared to November 2022, and +5% compared to October 2023) (Figure 1). In November 2023, power consumption exceeded generation by 30 mln. kWh which was 3% of the total generation and 3% of the total consumption (in November 2022, the difference between the total generation and the consumption resulted in a surplus of 6 mln. kWh, around 1% of the total generation and 1% of the total consumption for the month).



Source: Electricity System Commercial Operator (ESCO)

In November 2023, hydro power plants were the leading source of generation. In November 2023, hydro power (HPP) generation amounted to 633 mln. kWh (63.1% of total), thermal power (TPP) generation was 364 mln. kWh (36.2% of the total generation), while wind power (WPP) generation amounted to 6 mln. kWh (0.6% of the total generation) (Figure 2).

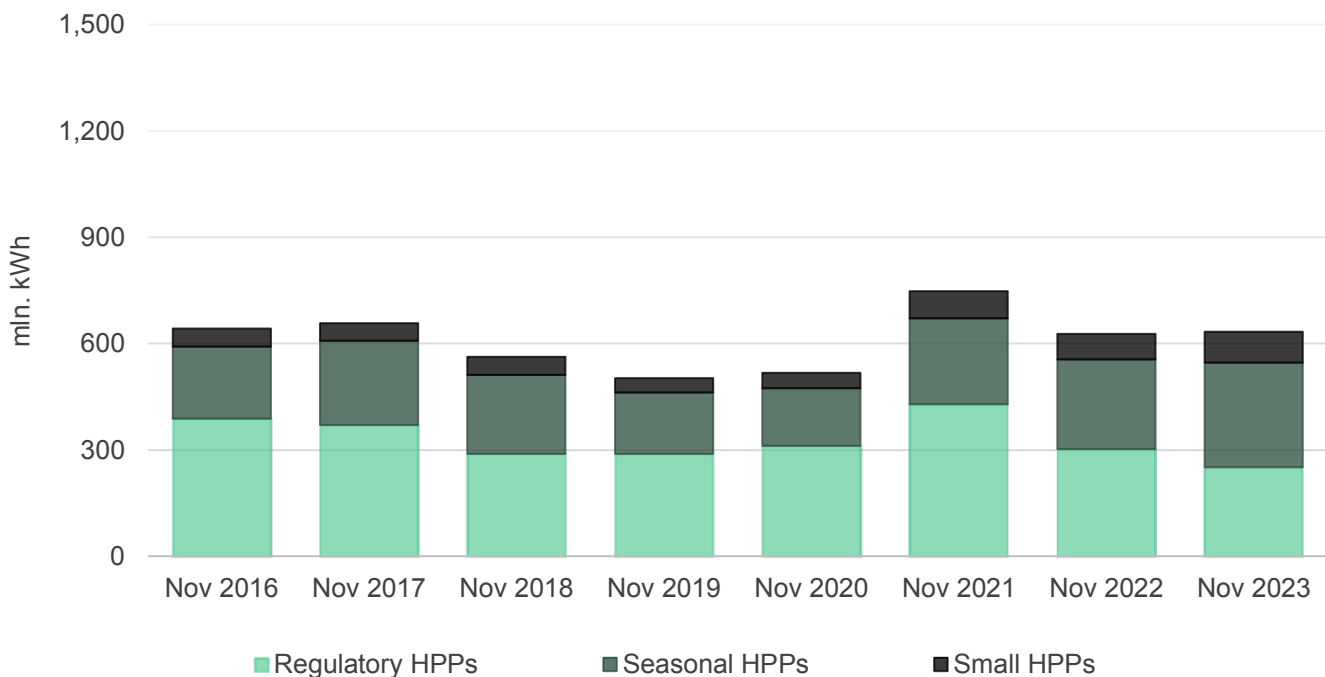
Figure 2 - Electricity Generation by Sources



Source: ESCO

Among hydropower generators, large (regulatory) HPPs produced 39.6% (251 mln. kWh) of electricity, while seasonal and small HPPs produced 46.6% (295 mln. kWh) and 13.8% (88 mln. kWh), respectively (Figure 3).

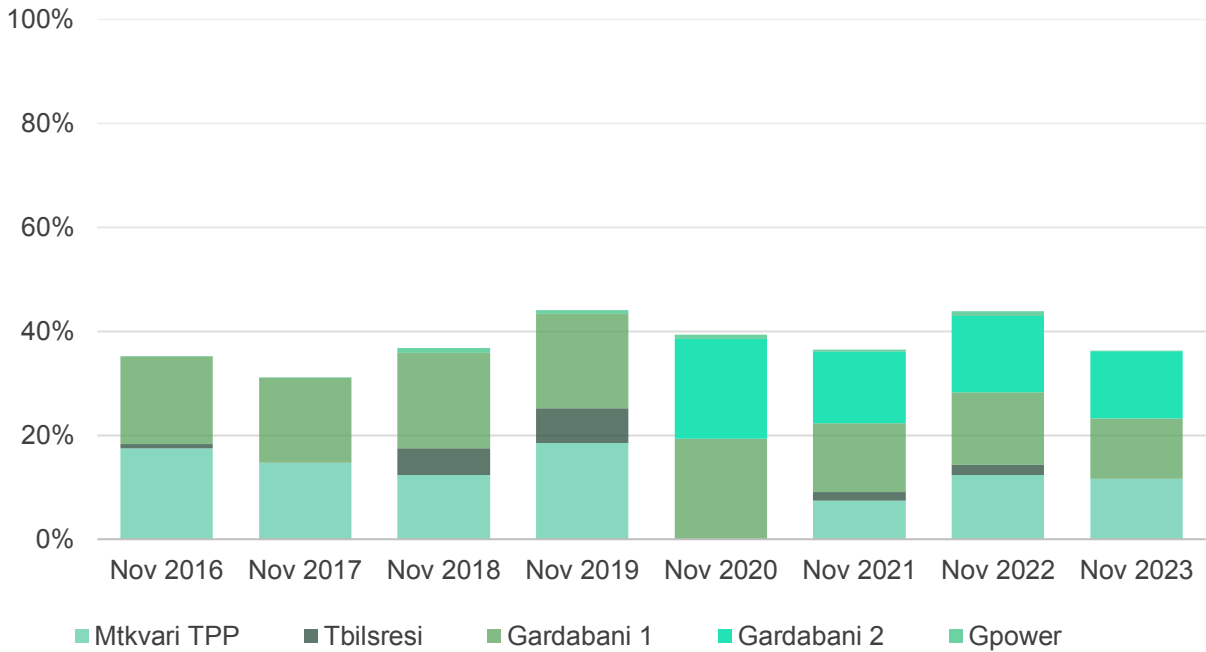
Figure 3 - HPP Generation by Type



Source: ESCO

As for thermal power generation, Gardabani 1 generated 116 mln. kWh (32% of TPP generation and 11.6% of total power generation), Gardabani 2 generated 130 mln. kWh (35.6% of TPP generation and 12.9% of total power generation), Mtkvari TPP generated 117 mln. kWh (32.2% of TPP generation and 11.7% of total power generation) and Gpower generated 0.4 mln. kWh (0.1% of TPP generation and 0.04% of total power generation) (Figure 4).

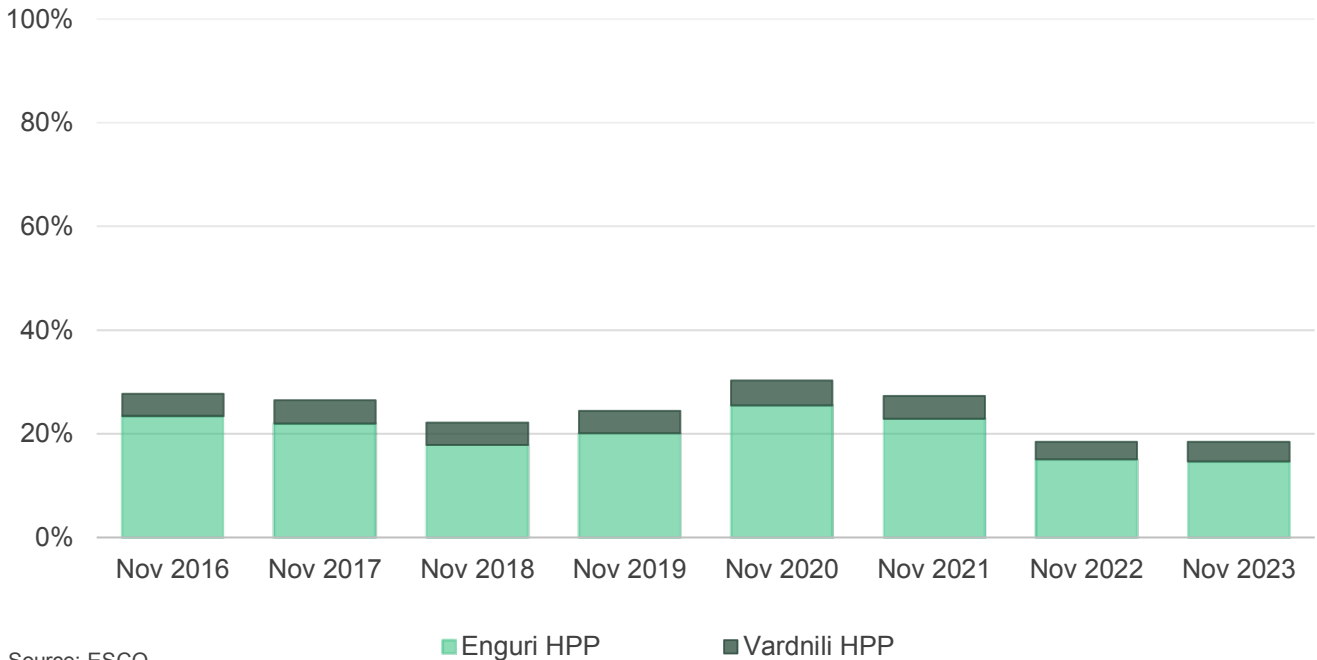
Figure 4 - Share of Large TPPs in Total Generation



Source: ESCO

As for HPP generation, Vardnili HPP generated 38 mln. kWh (15.1% of generation for regulatory HPPs and 14.7% of total generation). Enguri HPP generated 147 mln. kWh, which represents 58.7% of generation of regulatory HPPs and 3.8% of total generation (Figure 5).

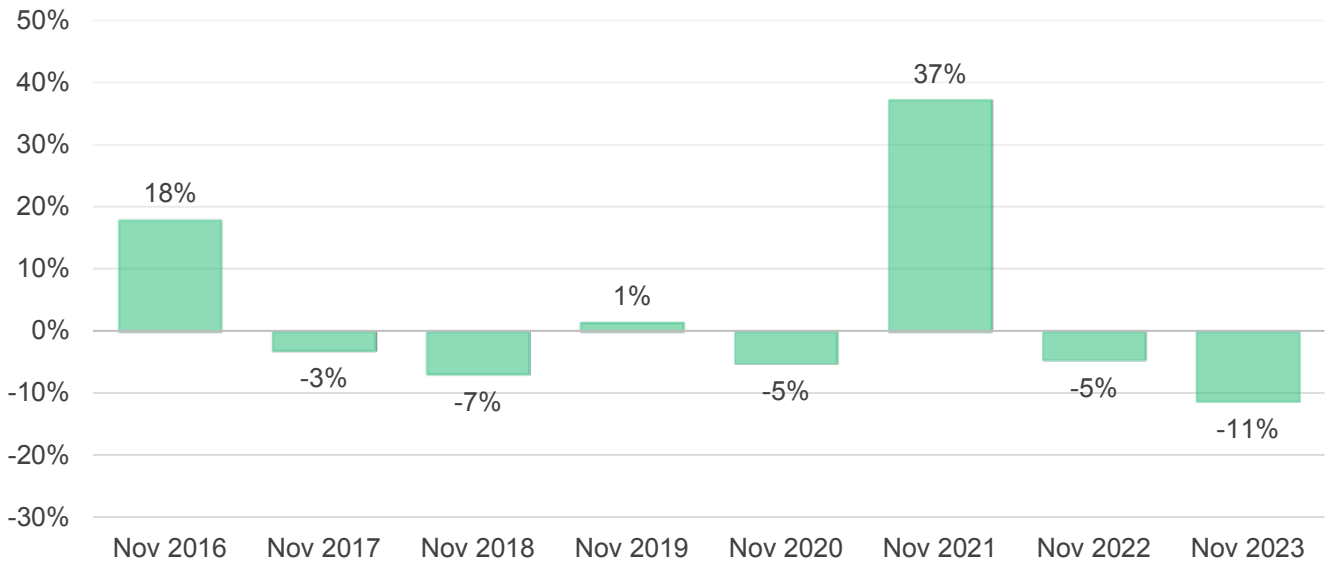
Figure 5 - Share of Enguri and Vardnili in Total Generation



Source: ESCO

Overall, the total generation decreased by 11% compared to November 2022 (Figure 6).

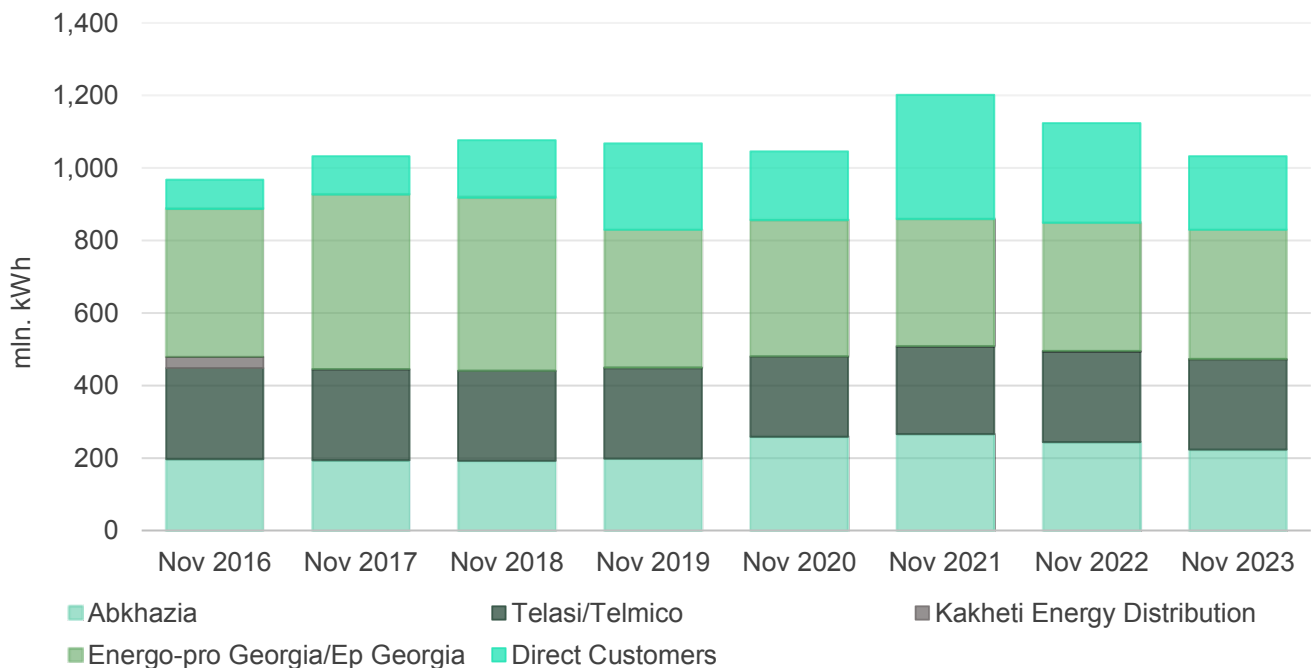
Figure 6 - Growth of Generation (% , y/y)



Source: ESCO

Total electricity demand came from: Energo-Pro Georgia/Ep Georgia¹ (35% - 357 mln. kWh), Abkhazia (20% - 222 mln. kWh), Telasi/Telmico² (24% - 251 mln. kWh), and direct customers (21% - 202 mln. kWh) (Figure 7). Annual demand from Abkhazia, Telasi/Telmico and direct customers fell by 9%, 27% and 0.04%, respectively, while it increased from Energo-Pro Georgia/Ep Georgia by 0.7%. Overall, there was an annual decrease of 8% in the total electricity consumption in November 2023, compared to November 2022 (Figure 8).

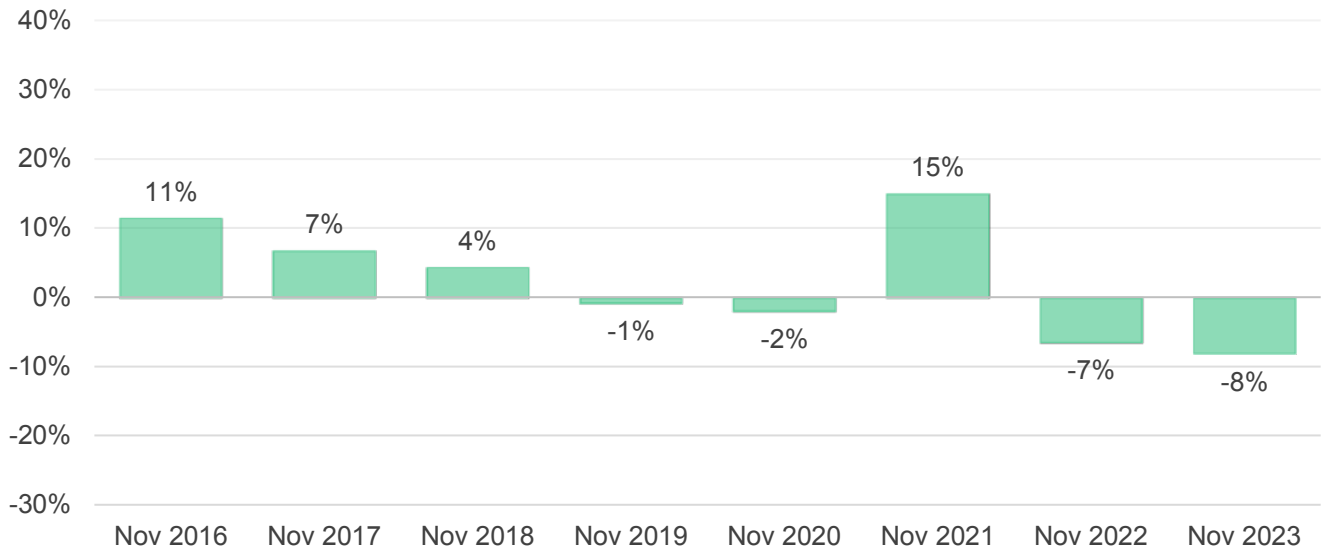
Figure 7 - Electricity Consumption by Type of Consumer



Source: ESCO

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

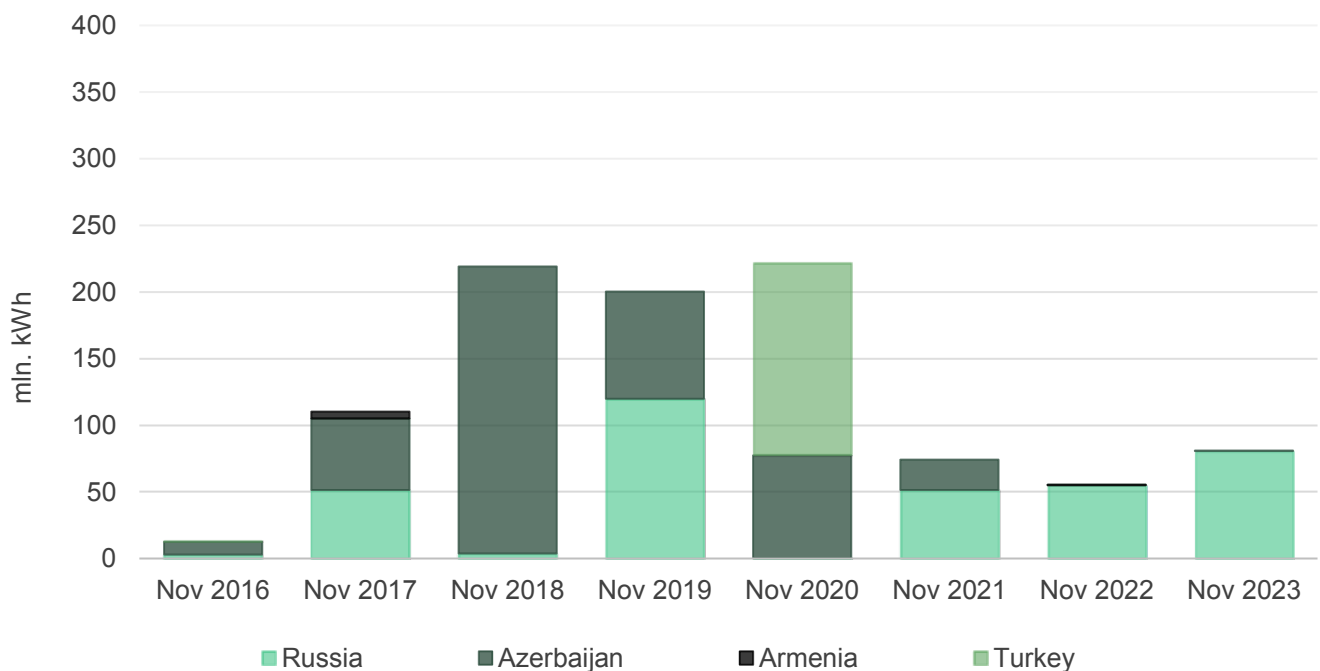
² Since 1st of July 2021, after adoption of a new electricity market model concept, operations of distribution and final supply have been disentangled, thus three different groups of players appeared on the market, Distribution Licensees - responsible for distribution activities and covering losses in the distribution network - Universal Service Suppliers - responsible for providing electricity to residential sector and small enterprises and Public Service Organizations – responsible for providing electricity to medium and large enterprises upon the written agreement. Currently, Energo-pro Georgia and Telasi continue their distribution activities, while EP Georgia Supply and Tbilisi Electricity Supply Company (Telmico) have been separated from them and play the role of both Universal Service Suppliers and Public Service Organizations.

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

Source: ESCO

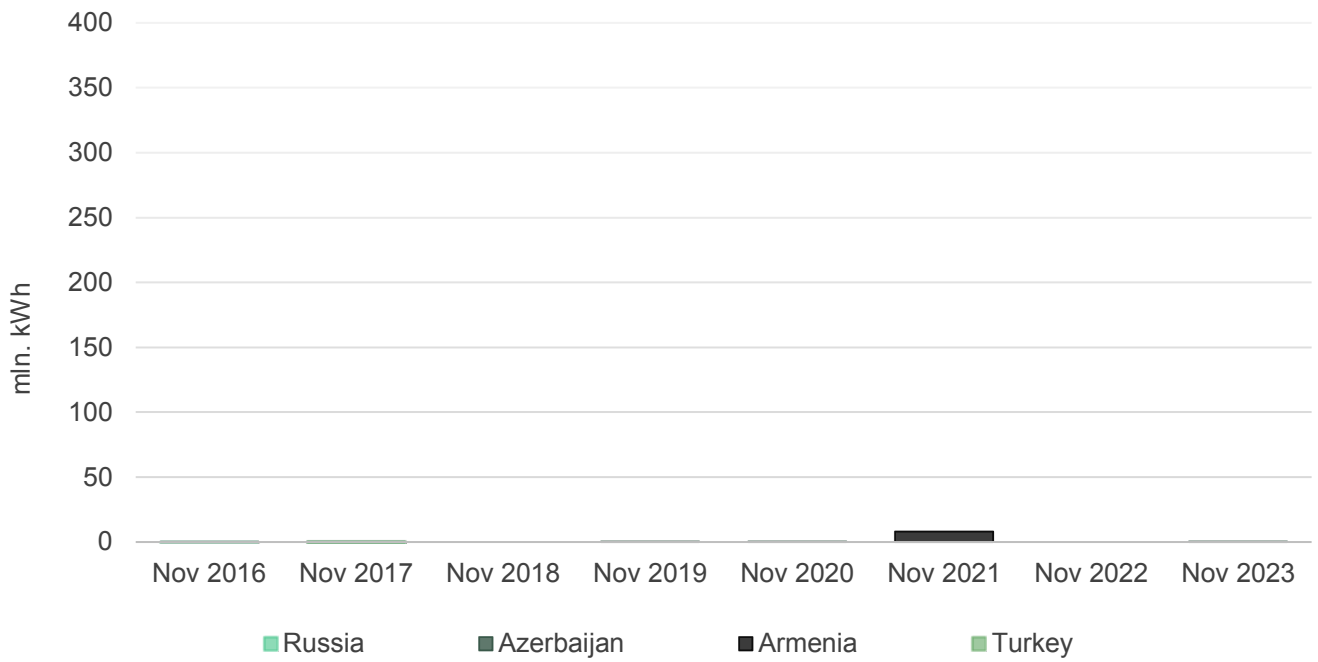
In November 2023, there was an import of 80.6 mln. kWh of electricity (in November 2022, there was import of 55.2 mln electricity) (Figure 9). Almost 100% of this import came from Russia and an insignificant amount of electricity came from Azerbaijan (in November 2022, almost 96.6% of import came from Russia, 0.2% came from Azerbaijan and 0.2% from Armenia). In November 2023, there was an export of 0.157 mln. kWh of electricity from Azerbaijan (there was no electricity export in November 2022) (Figure 10). There was 386 mln. kWh transit in November 2023 from Azerbaijan to Turkey (in November 2022, there was 432 mln. kWh transit from Azerbaijan to Turkey, and 72 mln. kWh transit from Armenia to Turkey).

In November 2023, imports increased by 46% compared to November 2022, while exports were 0 in November 2022.

Figure 9 - Imports by Year

Source: ESCO

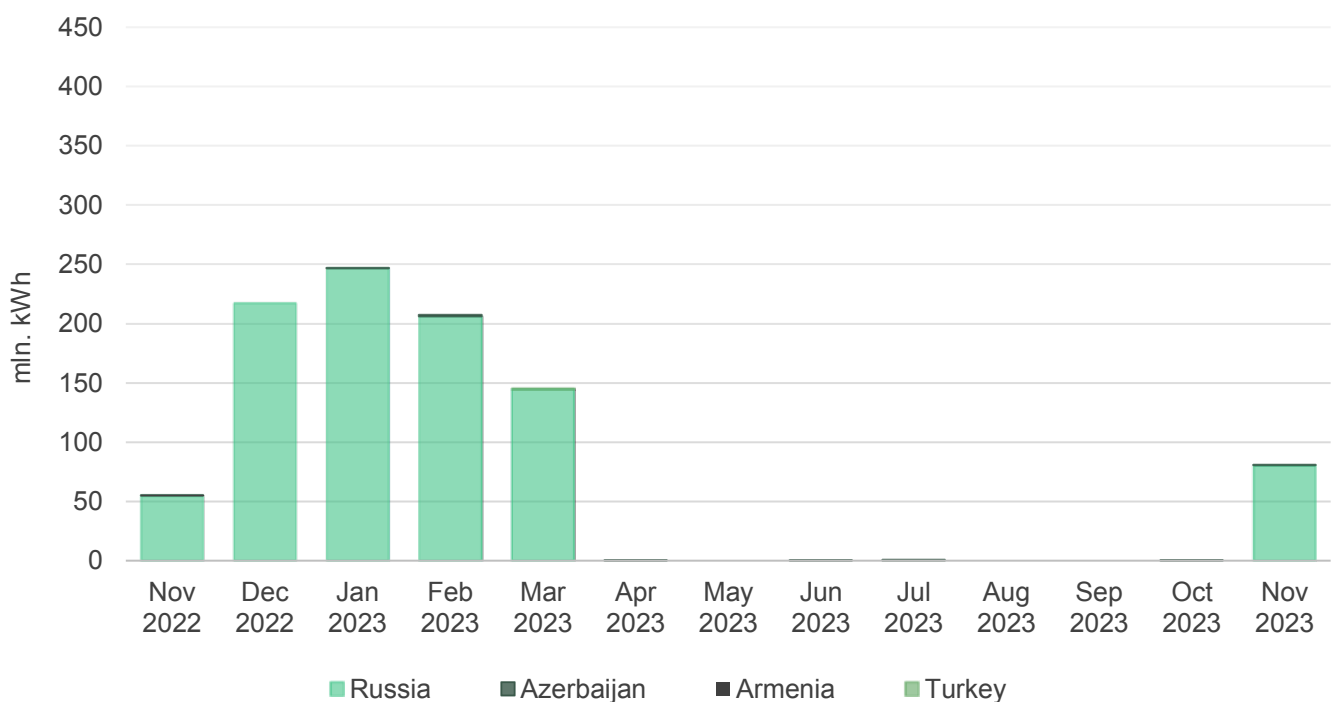
Figure 10 - Exports by Year



Source: ESCO

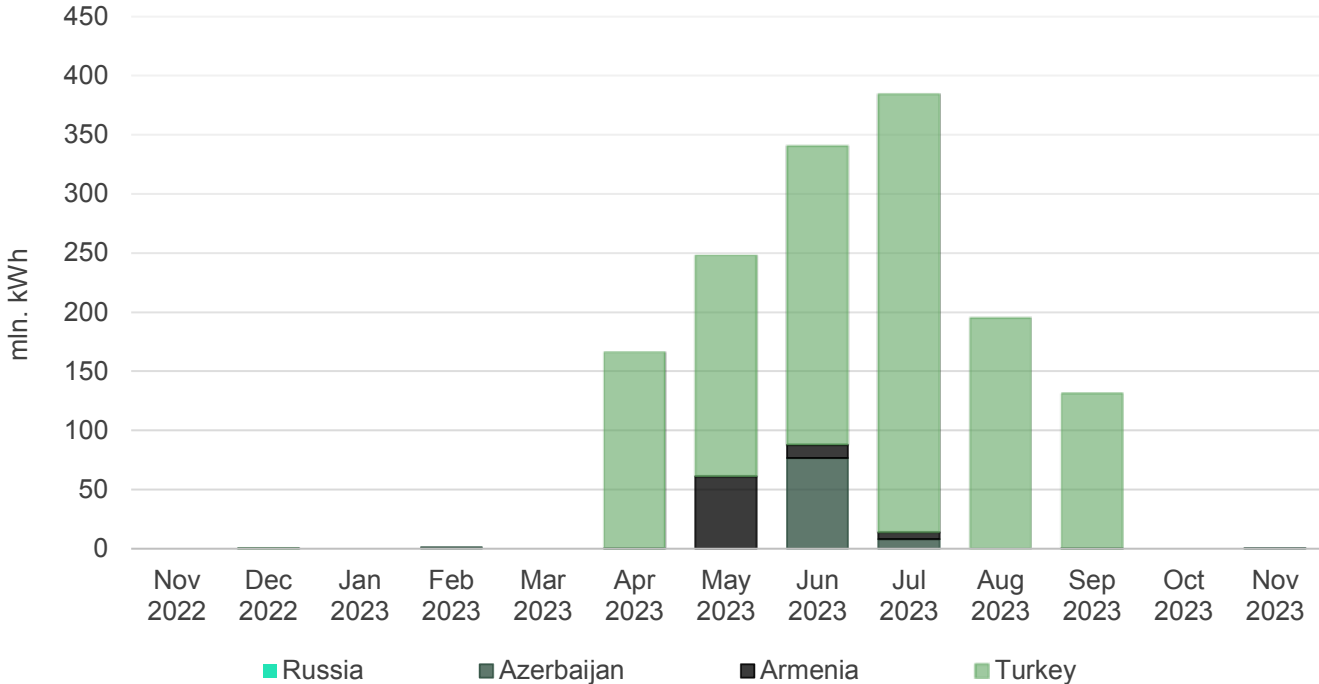
Electricity imports increased 5756 times in November 2023, compared to October 2023 (Figure 11). There were no electricity exports in October 2023, so monthly trend could not be analysed (Figure 12).

Figure 11 - Imports by Month



Source: ESCO

Figure 12 - Exports by Month

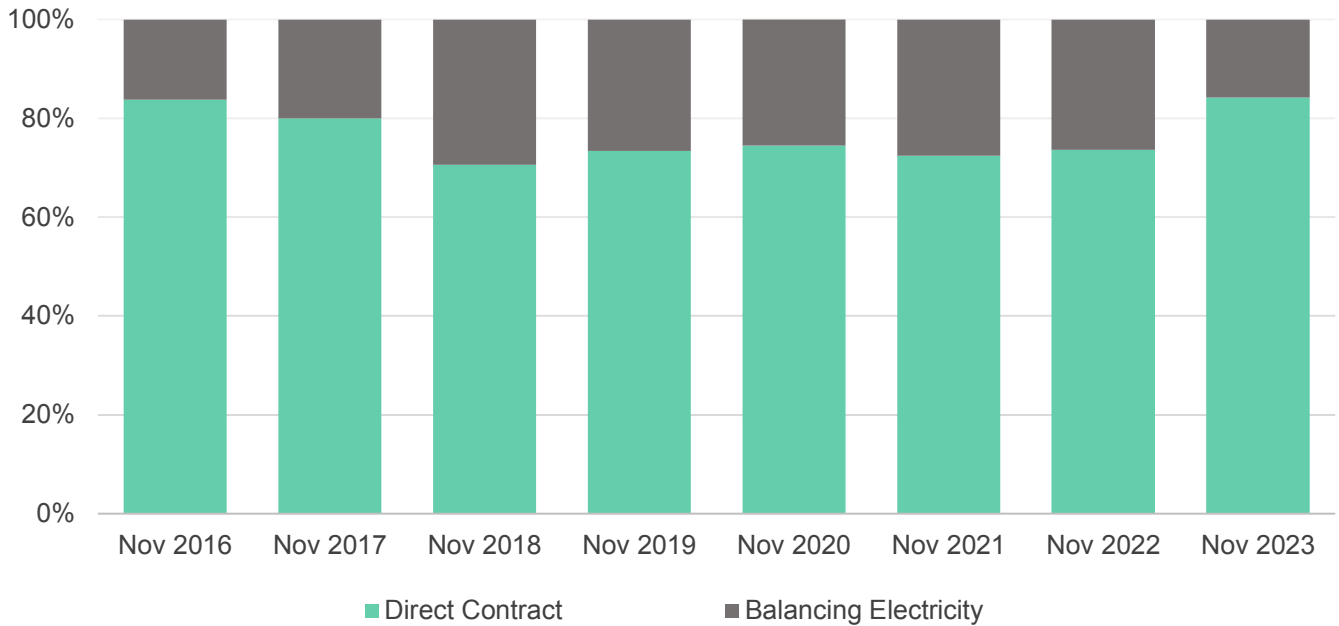


Source: ESCO

1. Market Operations

In November 2023, 84% of the electricity sold on/from the local market was sold through direct contracts. The remaining 16% was sold as balancing electricity (Figure 13).

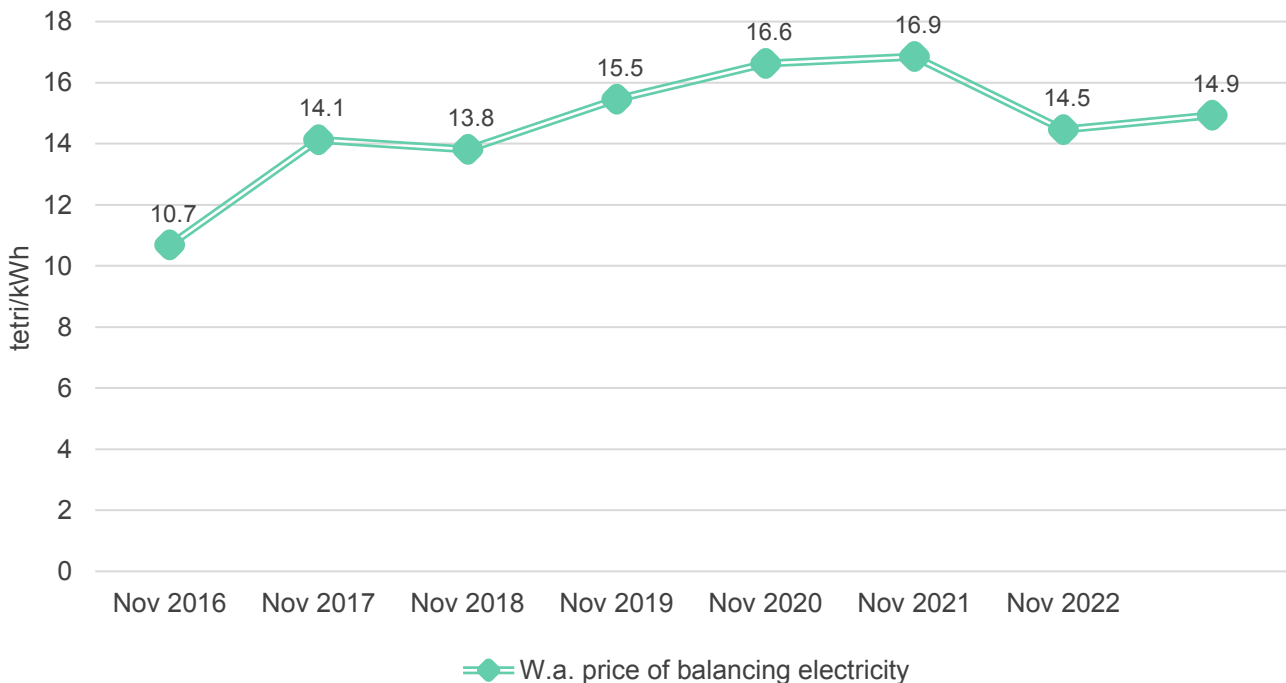
Figure 13 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

In November 2023, the weighted average price of balancing electricity was 14.9 tetri/kWh, which corresponds to an annual increase of 3.3% compared to November 2022 (Figure 14).

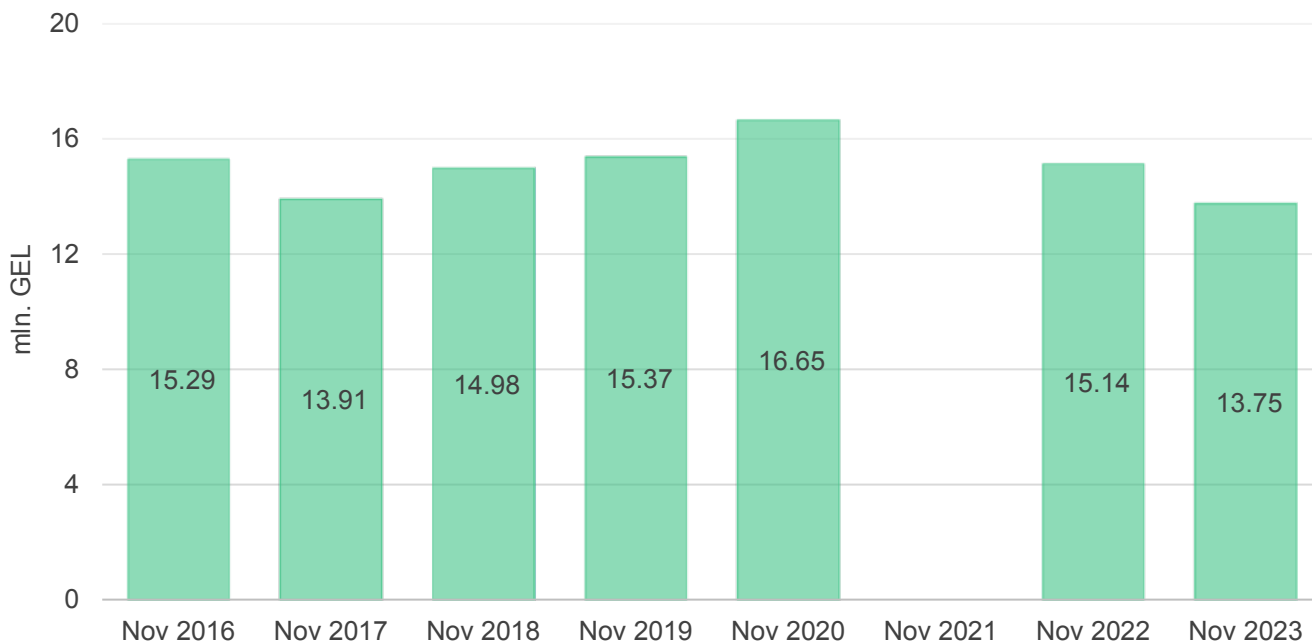
Figure 14 - Balancing Electricity Prices Weighted Average



Source: ESCO

Guaranteed capacity payments in November 2023 were roughly 13.75 mln. GEL, which represents a 9% decrease compared to November 2022 (Figure 15).

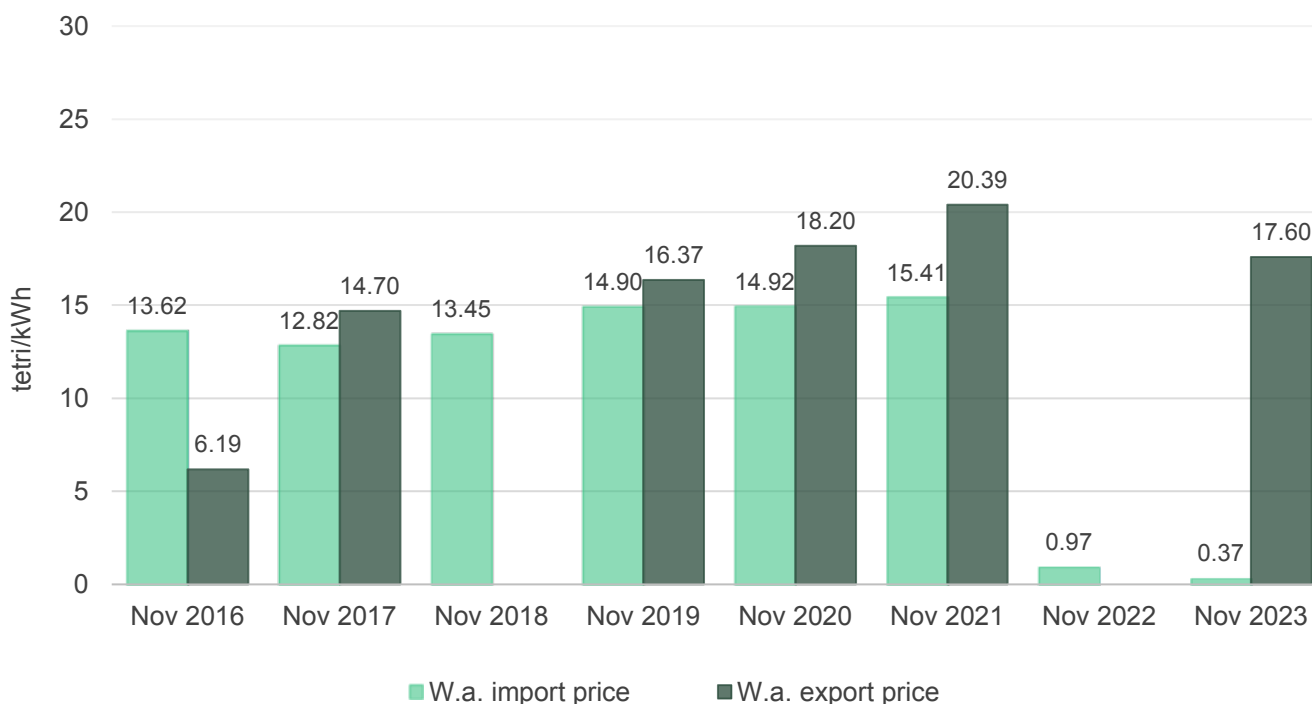
Figure 15 - Cost of Guaranteed Capacity



Source: ESCO

The electricity import prices in November 2023 were 0.14 ₾, or 0.37 tetri per kWh (Figure 16). This corresponds to an annual decrease in price by 61% in USD and 61% in GEL (prices were 0.35 ₾, or 0.97 tetri per kWh in November 2022). In October 2023, electricity import prices were 1.71 ₾, or 4.61 tetri per kWh (Figure 16). This corresponds to a monthly decrease in prices by 92% in USD and 92% in Gel. In October 2023 and November 2022, there was no electricity export, therefore, monthly and annual trend could not be analysed.

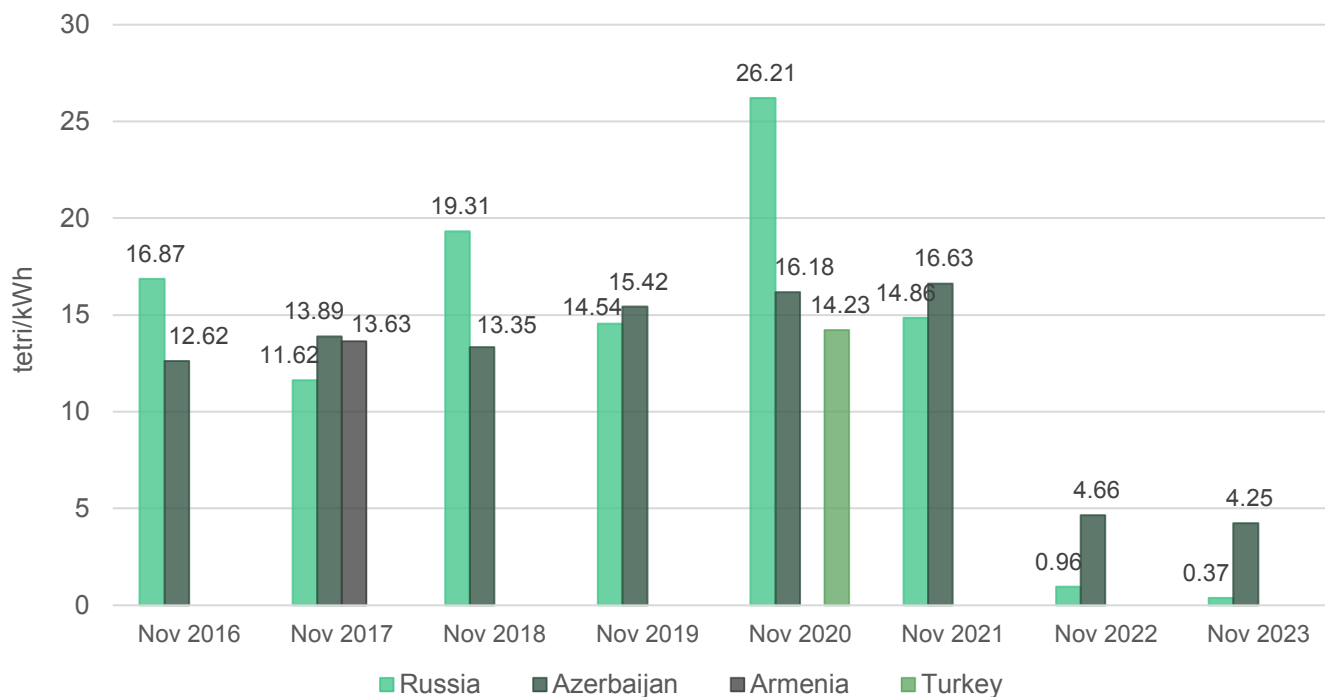
Figure 16 - Prices Import/Export



Source: ESCO

In November 2023, the electricity import price from Azerbaijan and Russia stood at 1.57 ¢ or 4.25 tetri and 0.1 ¢ or 0.37 tetri, respectively (Figure 17).

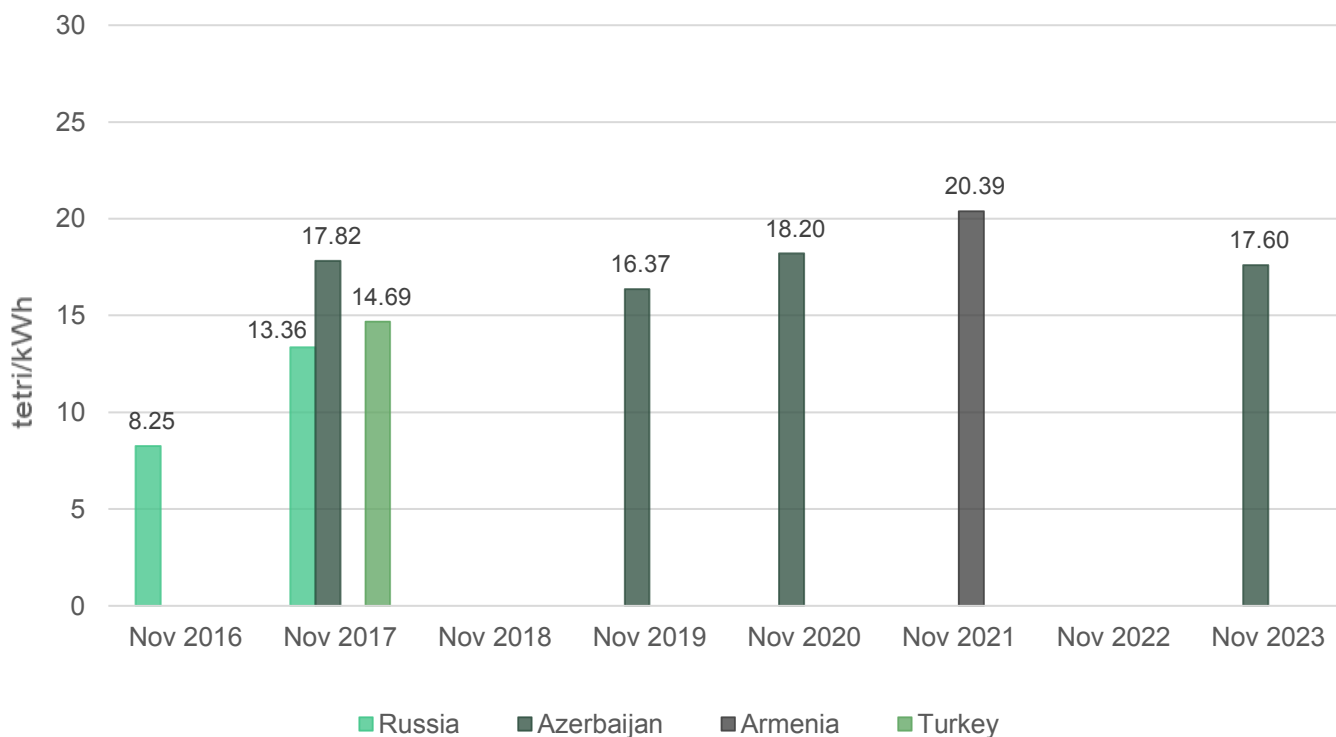
Figure 17 - Import Prices by Countries



Source: ESCO/Geostat

In November 2023, the electricity export price from Azerbaijan stood at 6.5 ¢ or 17.6 tetri (Figure 18).

Figure 18 - Export Prices by Countries

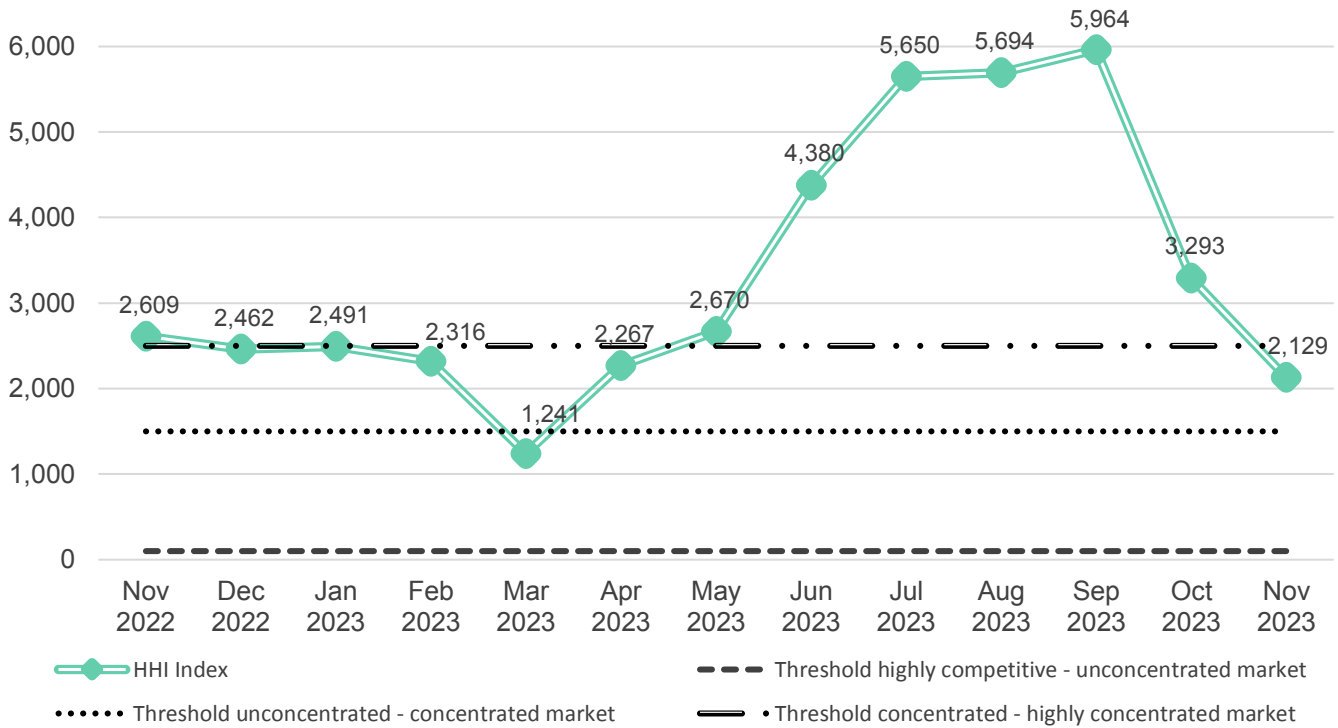


Source: ESCO/Geostat

2. Market Concentration

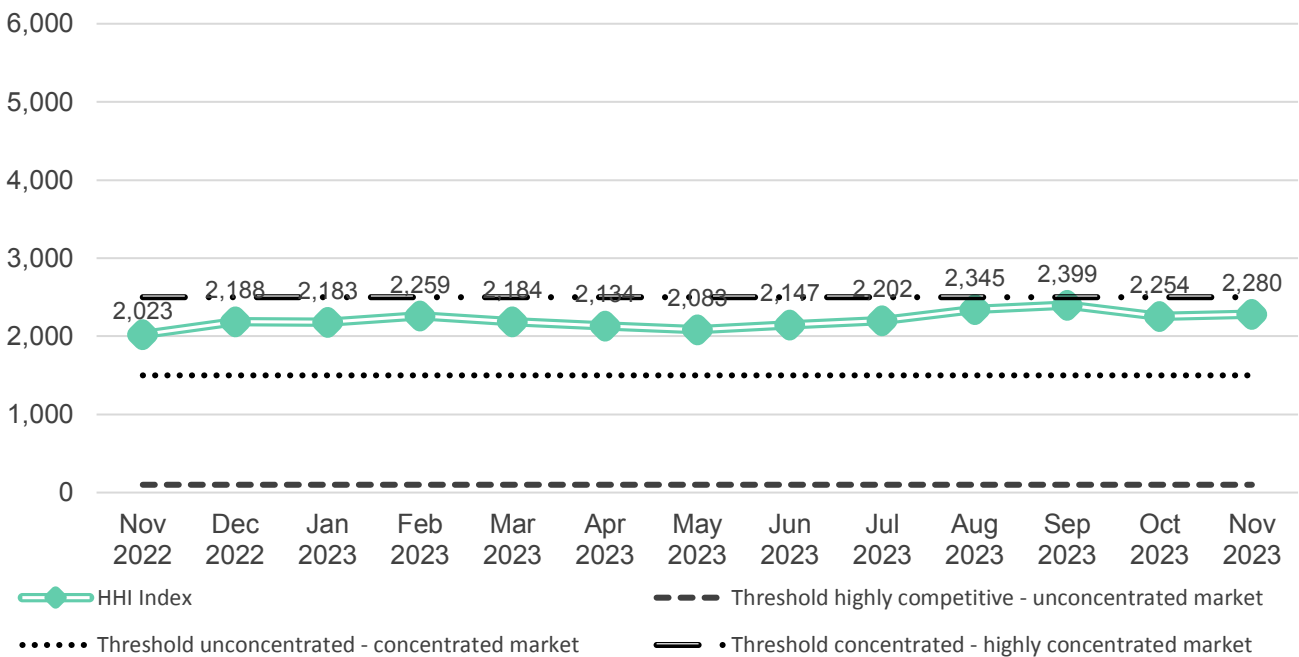
In conclusion, we utilize the Hirschman-Herfindahl (HHI) market concentration index to evaluate how competitive the generation and consumption segments of the market have been over the year. In November 2023, Georgian electricity generation market index fall between the threshold of highly concentrated and concentrated market with an HHI value of 2,129 (Figure 19). This is lower than the level in November 2022 (with an HHI value of 2,609), and lower than the level in October 2023 (the HHI was 3,293). As for the consumption segment, in November 2023, the HHI consumption index remained below the threshold for a highly concentrated market, with an HHI value of 2,280 (above the level in November 2022 – 2,023 and above the level in October 2023 – 2,254). In fact, September 2020 was the last month when the index value was above the level of a highly concentrated market, which indicates that the market is becoming increasingly competitive (Figure 20).

Figure 19 - Hirschman-Herfindahl Index for Power Generation



Source: ESCO

Figure 20 - Hirschman-Herfindahl Index for Power Consumption



Source: ESCO