

ISET

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ELECTRICITY MARKET REVIEW



ISET POLICY INSTITUTE AGRICULTURE & RURAL POLICY RESEARCH CENTER

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INFORMATION

- In January 2024 there was an increase in the total electricity generation by 6% on a yearly basis and increase by 1% on a monthly basis.
- Consumption decreased by 0.4% on a yearly basis and increased by 5% compared to the previous month.
- Consumption exceeded generation by 104 mln. kWh which was 9% of the total generation and 8% of the total consumption in January 2024.
- There were imports of 160.1 mln. kWh in January 2024.
- There were exports of 8.5 mln. kWh in January 2024.
- The main import partner country was Russia.
- The main export partner country was Azerbaijan.
- The price of imports reached 0.75 ჯ, or 2.01 tetri per kWh.
- The price of exports reached 6.5 ჯ, or 17.39 tetri per kWh.
- The HHI index for the Georgian electricity generation market remained between the threshold of highly concentrated and concentrated market. In January 2024, its level was 1,984.
- The HHI for the Georgian electricity consumption market remained below the threshold of a highly concentrated market. In January 2024, its level was 2,332.

ABBREVIATION USED

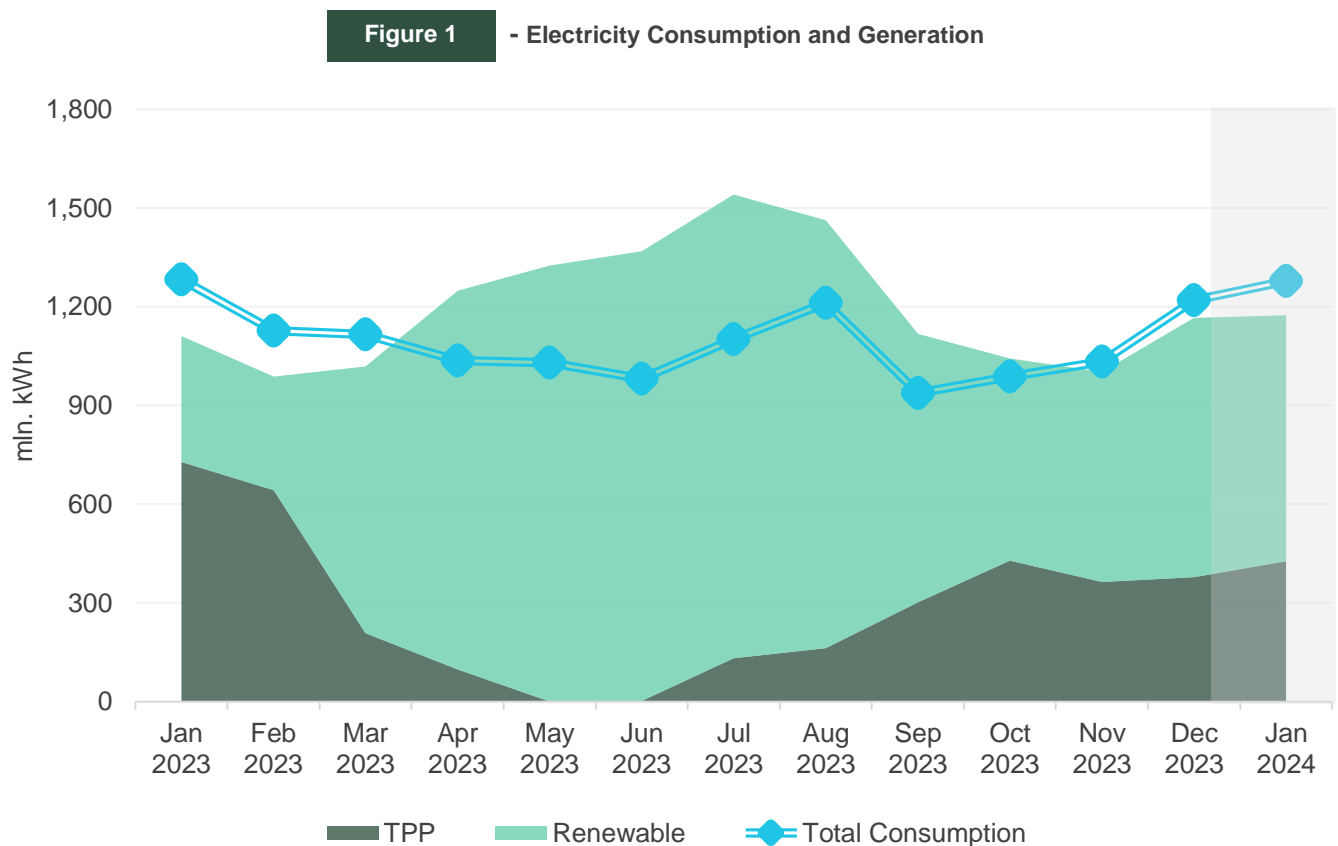
Mln	million
kWh	kilowatt-hour
HPP	Hydro Power Plant
WPP	Wind Power Plant
TPP	Thermal Power Plant
HHI	Hirschmann-Herfindahl Index
Telmico	Tbilisi Electricity Supply Company
Ep Georgia	Ep Georgia Supply
Geostat	National Statistics Office of Georgia
ESCO	Electricity Market Operator

Generation – Consumption – Trade

In January 2024, Georgian power plants generated 1,175 mln. kWh of electricity (Figure 1). This represents a 6% increase in the total generation compared to the previous year (in January 2023, the total generation was 1,111 mln. kWh). The rise in generation on a yearly basis comes from an increase in hydro power generation by 98%, while generation of thermal and wind power plants decreased by 41% and 33%, respectively.

On a monthly basis, the generation increased by approximately 1% (in December 2023, the total generation was 1,166 mln. kWh) (Figure 1). The monthly rise in total generation is induced by an increase of thermal power generation by 13%, while hydro and wind power generation decreased by 5% and 14%, respectively.

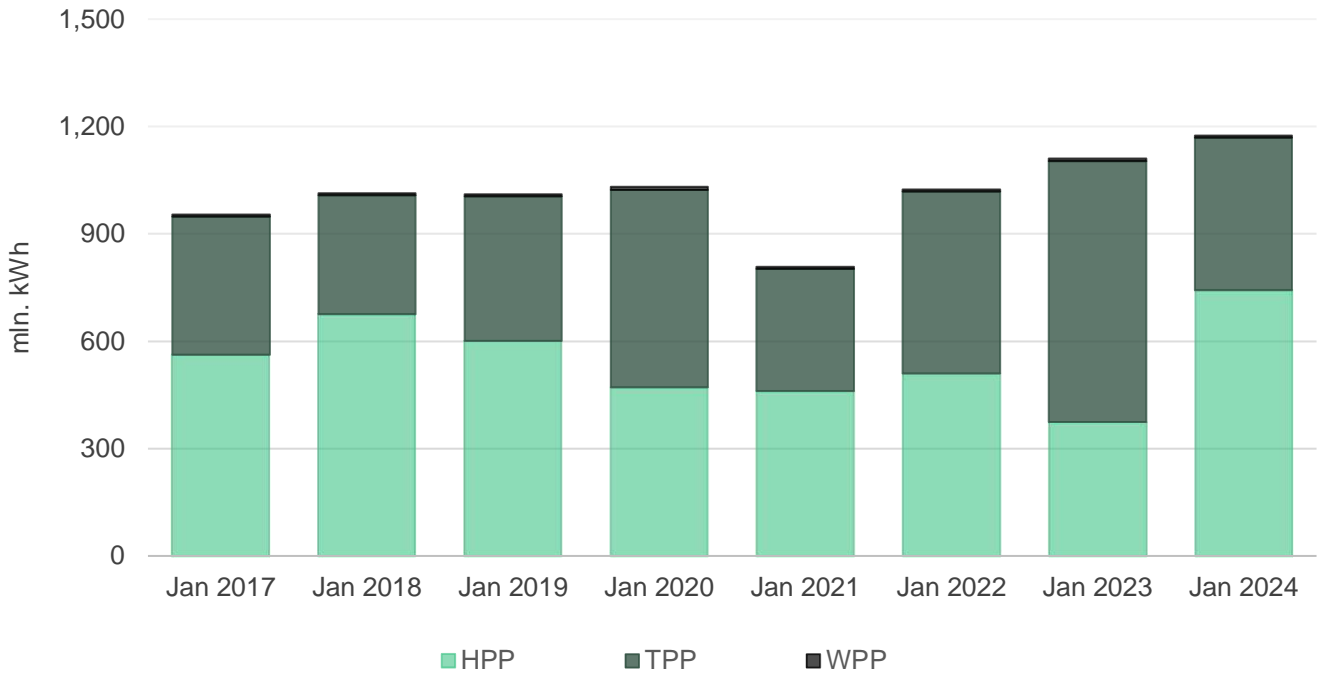
The consumption of electricity on the local market was 1,287 mln. kWh (-0.4% compared to January 2023, and +5% compared to December 2023) (Figure 1). In January 2024, power consumption exceeded generation by 104 mln. kWh which was 9% of the total generation and 8% of the total consumption (in January 2023, the difference between the total generation and the consumption resulted in a deficit of 172 mln. kWh, around 16% of the total generation and 13% of the total consumption for the month).



Source: Electricity System Commercial Operator (ESCO)

In January 2024, hydro power plants were the leading source of generation. In January 2024, hydro power (HPP) generation amounted to 742 mln. kWh (63.1% of total), thermal power (TPP) generation was 428 mln. kWh (36.4% of the total generation), while wind power (WPP) generation amounted to 5 mln. kWh (0.5% of the total generation) (Figure 2).

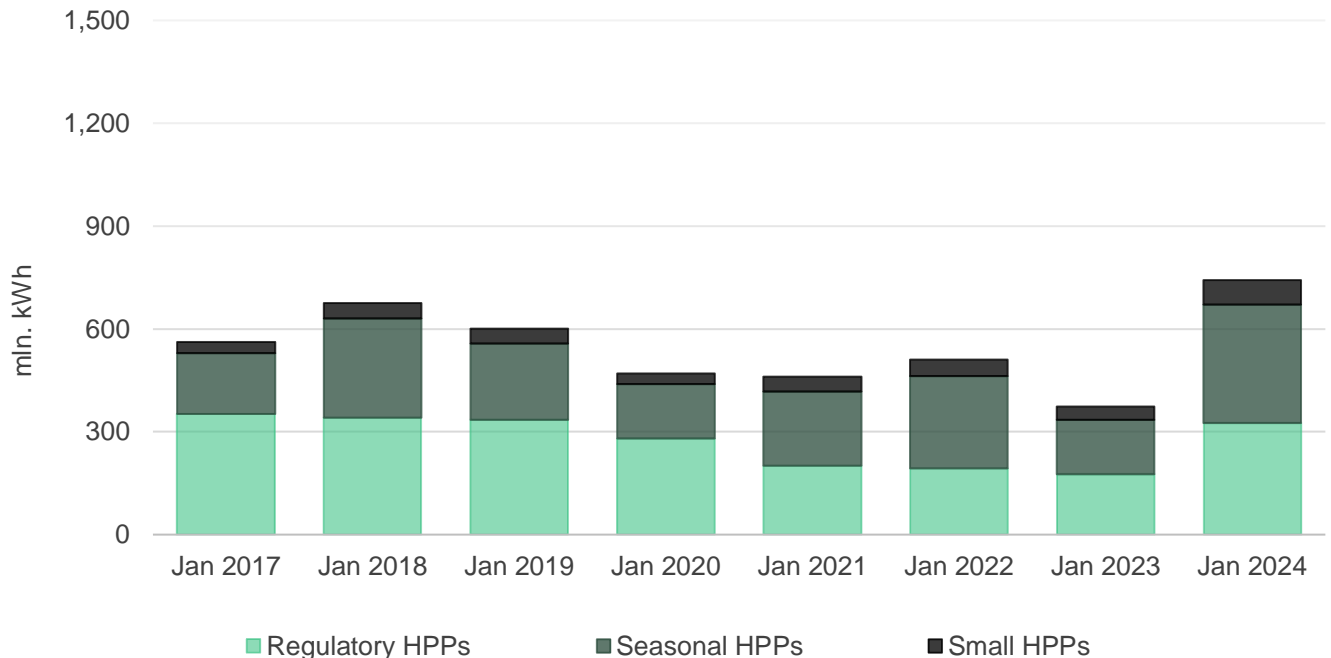
Figure 2 - Electricity Generation by Sources



Source: ESCO

Among hydropower generators, large (regulatory) HPPs produced 43.9% (325 mln. kWh) of electricity, while seasonal and small HPPs produced 46.6% (345 mln. kWh) and 9.6% (71 mln. kWh), respectively (Figure 3).

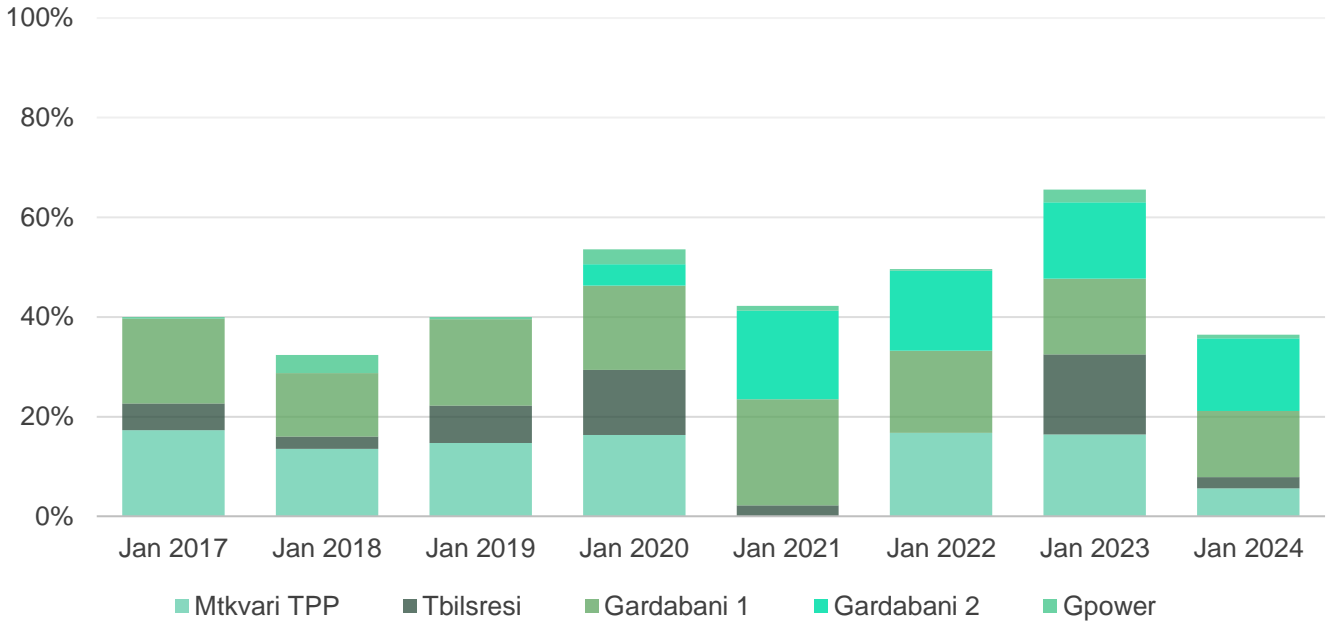
Figure 3 - HPP Generation by Type



Source: ESCO

As for thermal power generation, Gardabani 1 generated 157 mln. kWh (36.6% of TPP generation and 13% of total power generation), Gardabani 2 generated 171 mln. kWh (39.9% of TPP generation and 15% of total power generation), Mtkvari TPP generated 66 mln. kWh (15.4% of TPP generation and 6% of total power generation), Tbilisresi generated 26 mln. kWh (6.1% of TPP generation and 2% of total power generation) and Gpower generated 9 mln. kWh (2.1% of TPP generation and 1% of total power generation) (Figure 4).

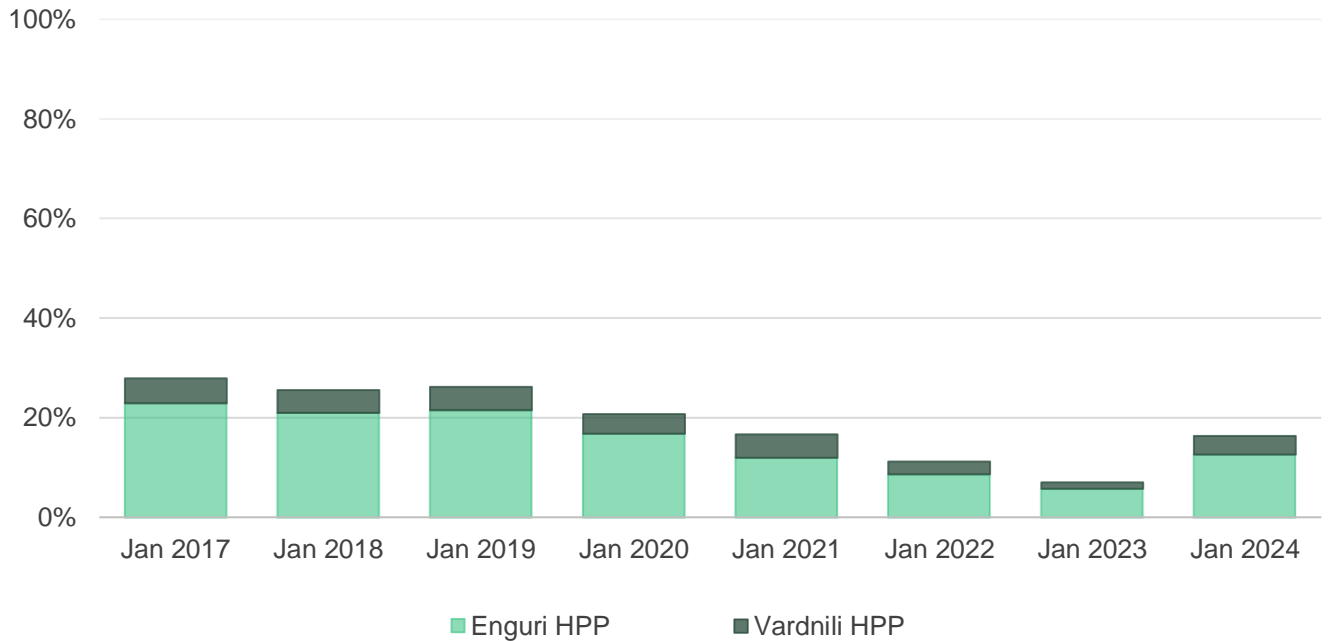
Figure 4 - Share of Large TPPs in Total Generation



Source: ESCO

As for HPP generation, Vardnili HPP generated 44 mln. kWh (13.6% of generation for regulatory HPPs and 3.8% of total generation). Enguri HPP generated 148 mln. kWh, which represents 45.5% of the generation of regulatory HPPs and 12.6% of total generation (Figure 5).

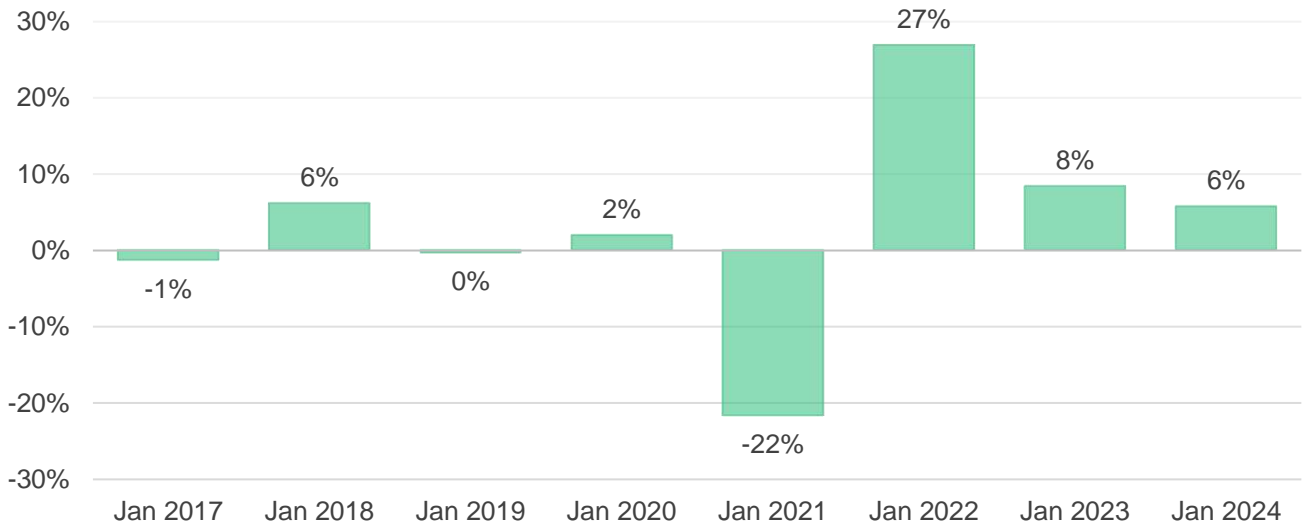
Figure 5 - Share of Enguri and Vardnili in Total Generation



Source: ESCO

Overall, the total generation increased by 6% compared to January 2023 (Figure 6).

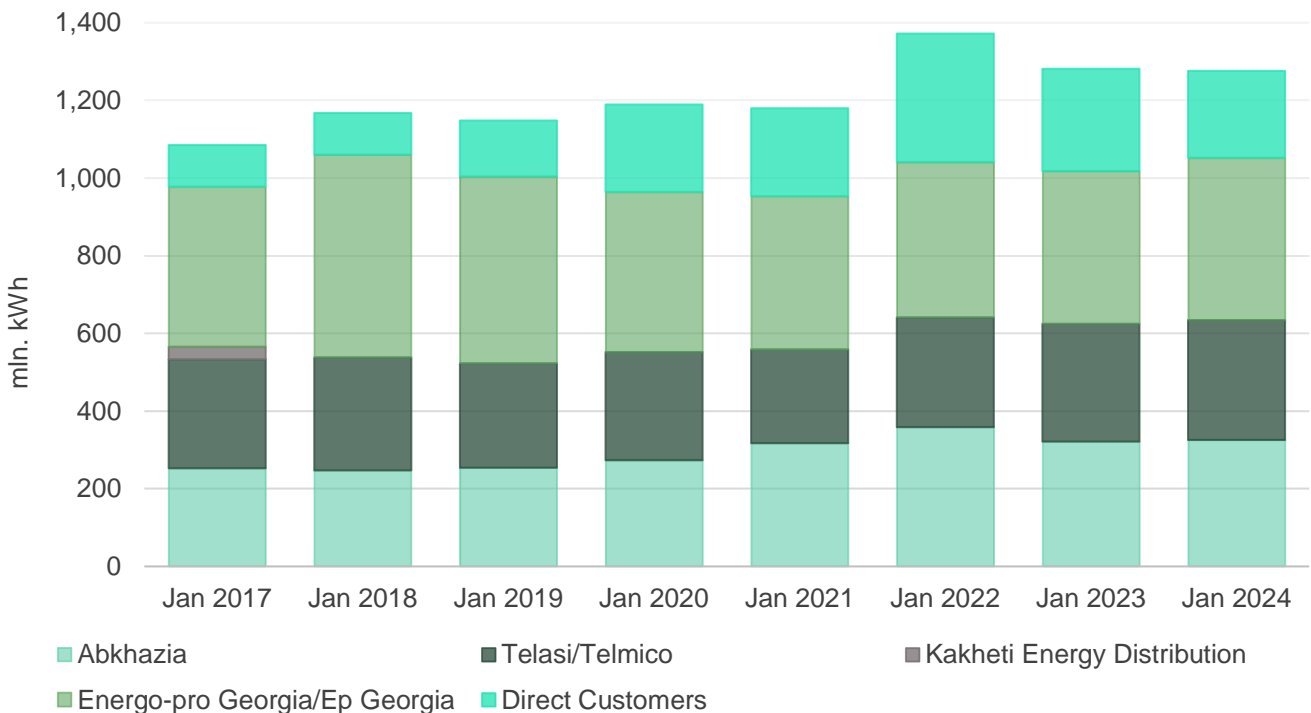
Figure 6 - Growth of Generation (% , y/y)



Source: ESCO

Total electricity demand came from: Energo-Pro Georgia/Ep Georgia¹ (33% - 417 mln. kWh), Abkhazia (25% - 326 mln. kWh), Telasi/Telmico² (24% - 309 mln. kWh), and direct customers (18% - 225 mln. kWh) (Figure 7). Annual demand from Abkhazia, Telasi/Telmico and Energo-Pro Georgia/Ep Georgia increased by 2%, 1.6% and 6.1%, respectively, while it fell from direct customers by 15%. Overall, there was an annual decrease of 0.4% in the total electricity consumption in January 2024, compared to January 2023 (Figure 8).

Figure 7 - Electricity Consumption by Type of Consumer

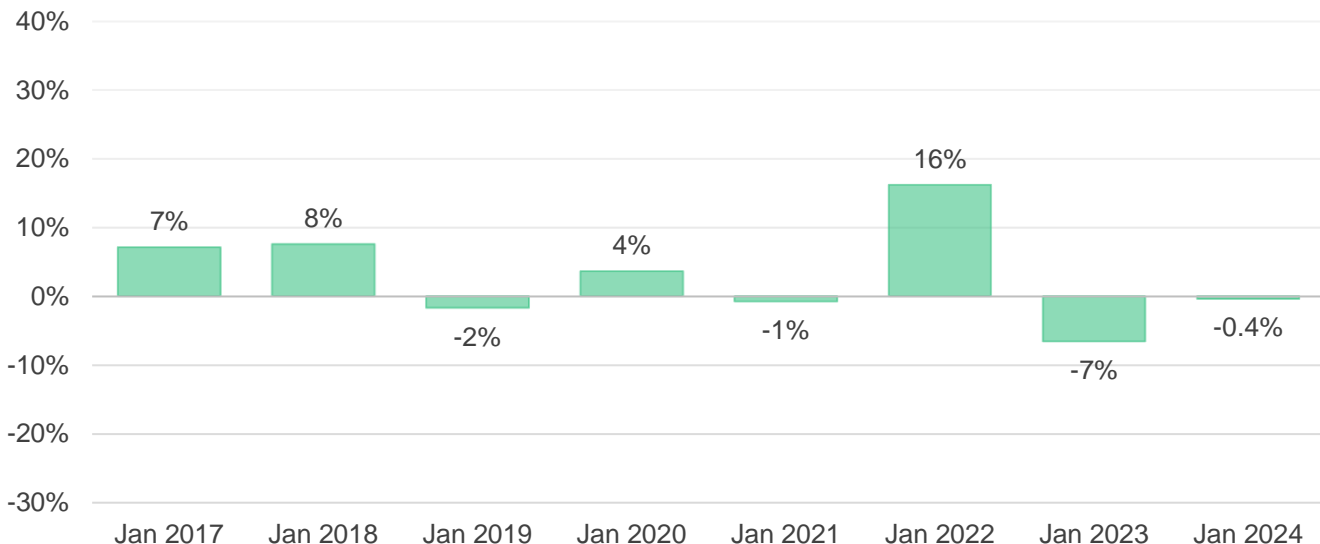


Source: ESCO

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)

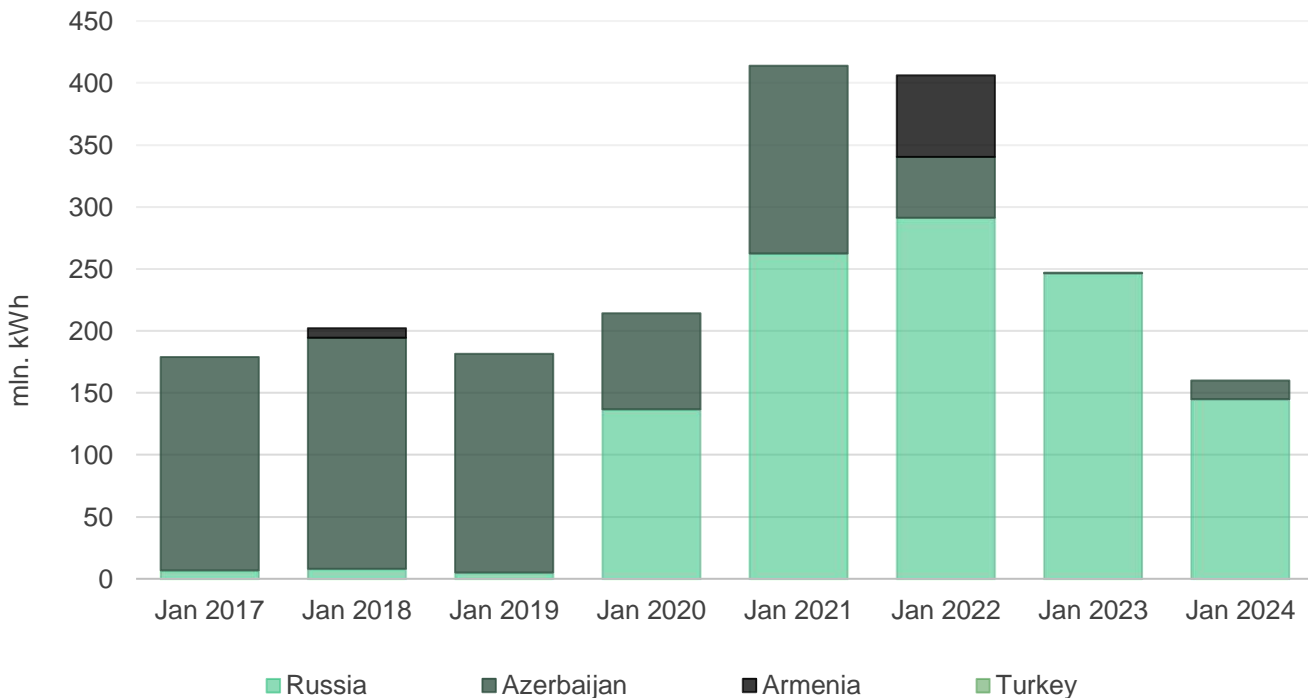


Source: ESCO

In January 2024, there was an import of 160.1 mln. kWh of electricity (in January 2023, there was import of 247 mln electricity) (Figure 9). 90.6% of this import came from Russia and 9.4% from Azerbaijan (in January 2023, 99.9% of import came from Russia and 0.01% from Azerbaijan). In January 2024, there was an export of 8.5 mln. kWh of electricity to Azerbaijan (there was no export in January 2023) (Figure 10). There was 87.6 mln. kWh transit in January 2024 from Azerbaijan to Turkey (in January 2023, there was 492 mln. kWh transit from Azerbaijan to Turkey, and 29 mln. kWh transit from Armenia to Turkey).

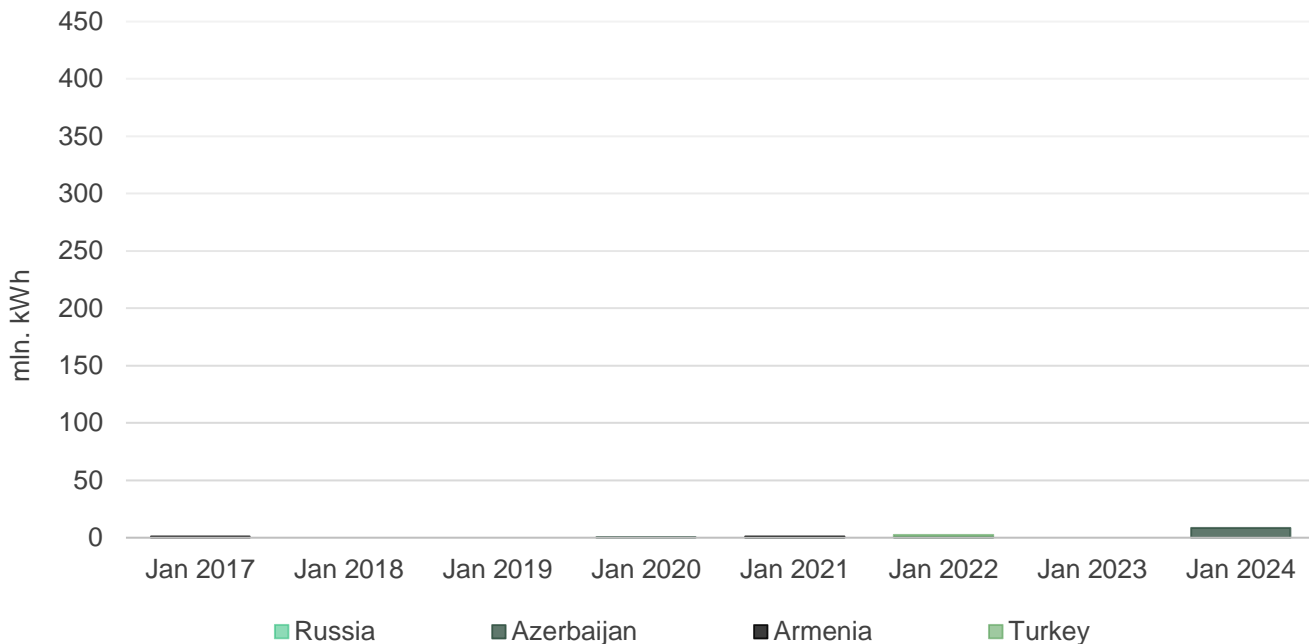
In January 2024, imports decreased by 35%, while exports increased by 8 times compared to January 2023.

Figure 9 - Imports by Year



Source: ESCO

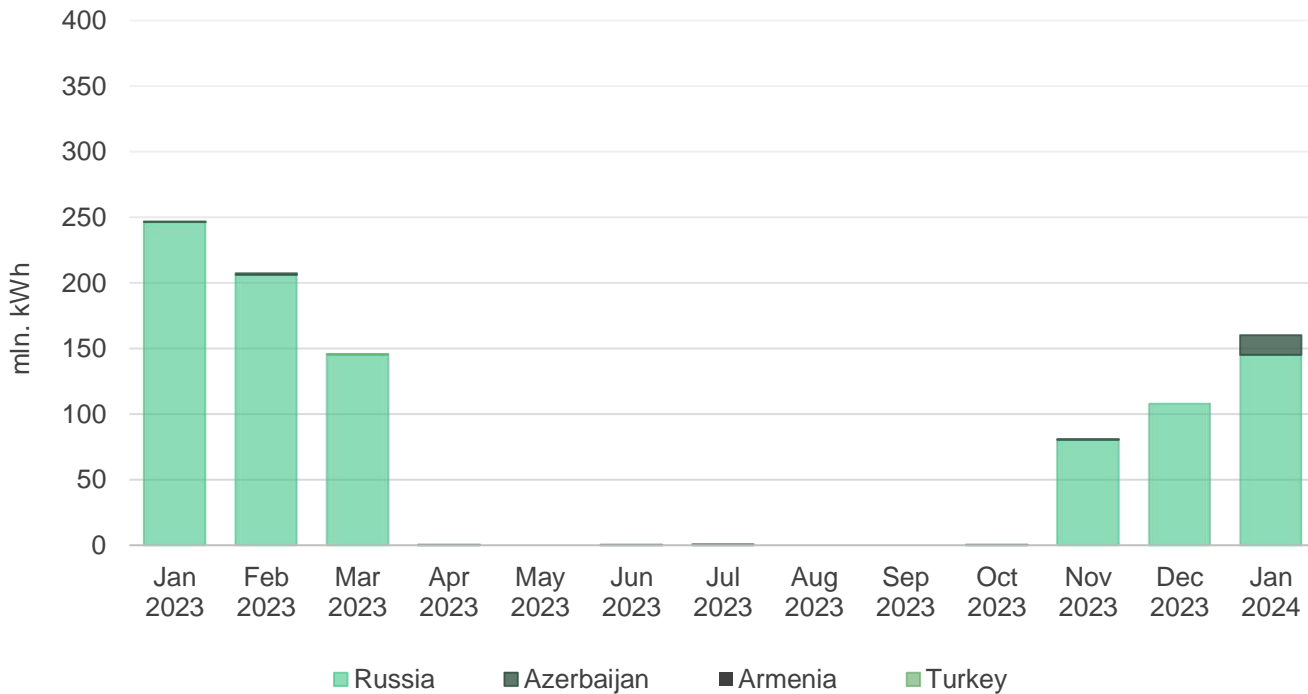
Figure 10 - Exports by Year



Source: ESCO

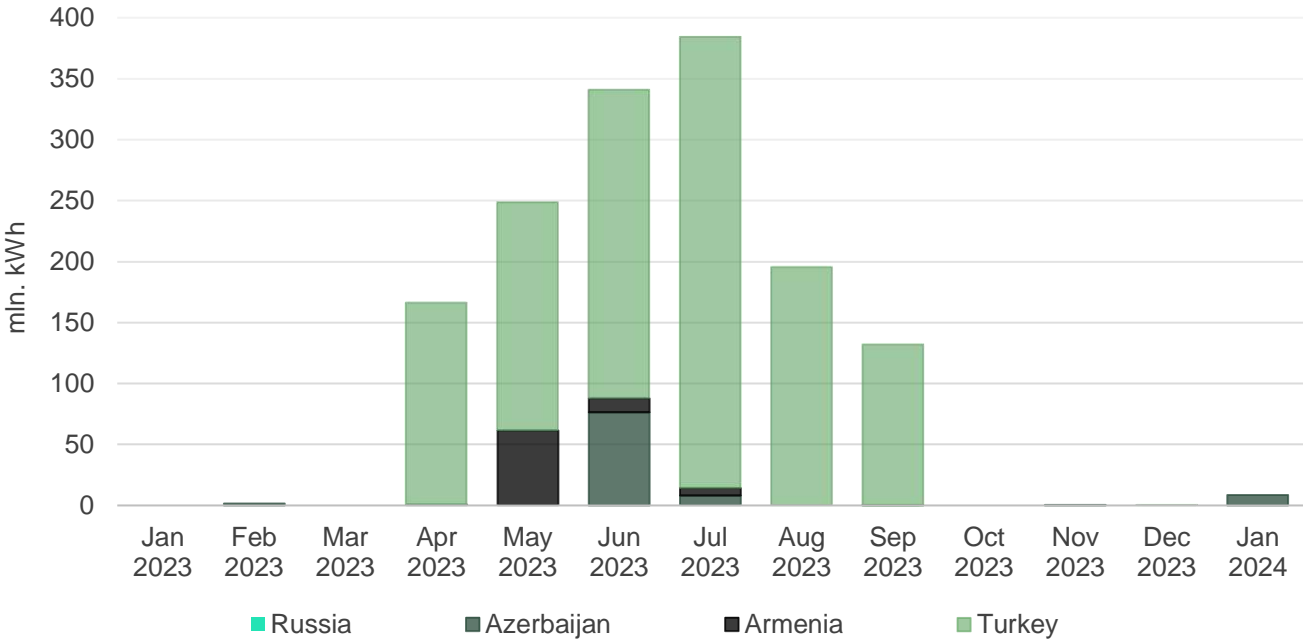
Electricity imports increased by 48% in January 2024, compared to December 2023 (Figure 11). Electricity exports increased 847 times in January 2024, compared to December 2023 (Figure 12).

Figure 11 - Imports by Month



Source: ESCO

Figure 12 - Exports by Month

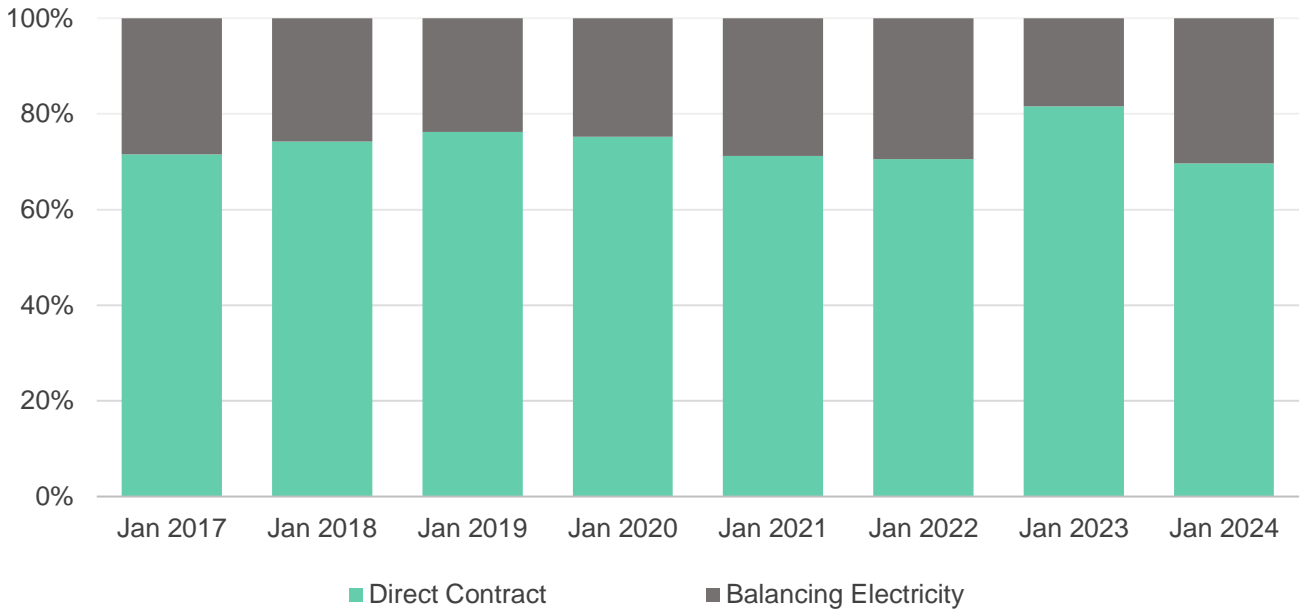


Source: ESCO

1. Market Operations

In January 2024, 70% of the electricity sold on/from the local market was sold through direct contracts. The remaining 30% was sold as balancing electricity (Figure 13).

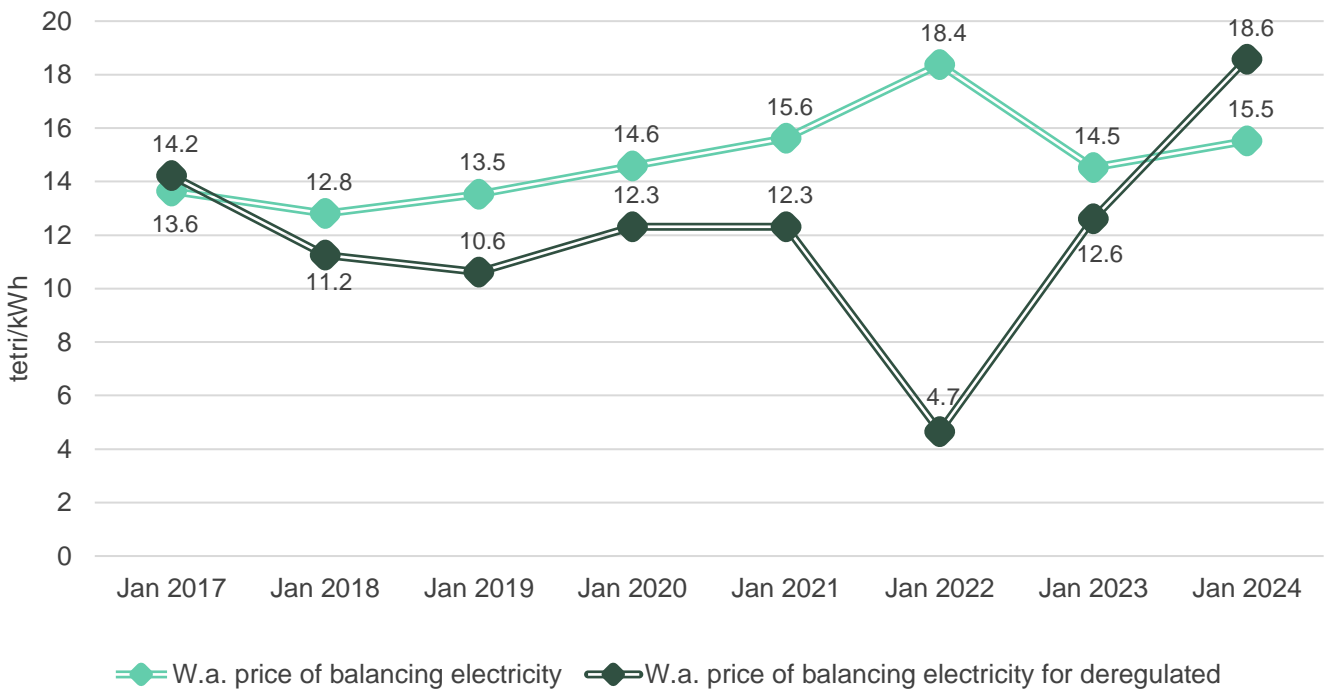
Figure 13 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

In January 2024, the weighted average price of balancing electricity was 15.5 tetri/kWh, which corresponds to an annual increase of 6.9% compared to January 2023. As for the weighted average price for deregulated (small) HPPs, it was 18.6 tetri/kWh, which corresponds to an annual increase of 47.3% compared to January 2023 (Figure 14).

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



Source: ESCO

Guaranteed capacity payments in January 2024 were roughly 15.93 mln. GEL, which represents a 0.5% increase compared to January 2023 (Figure 15).

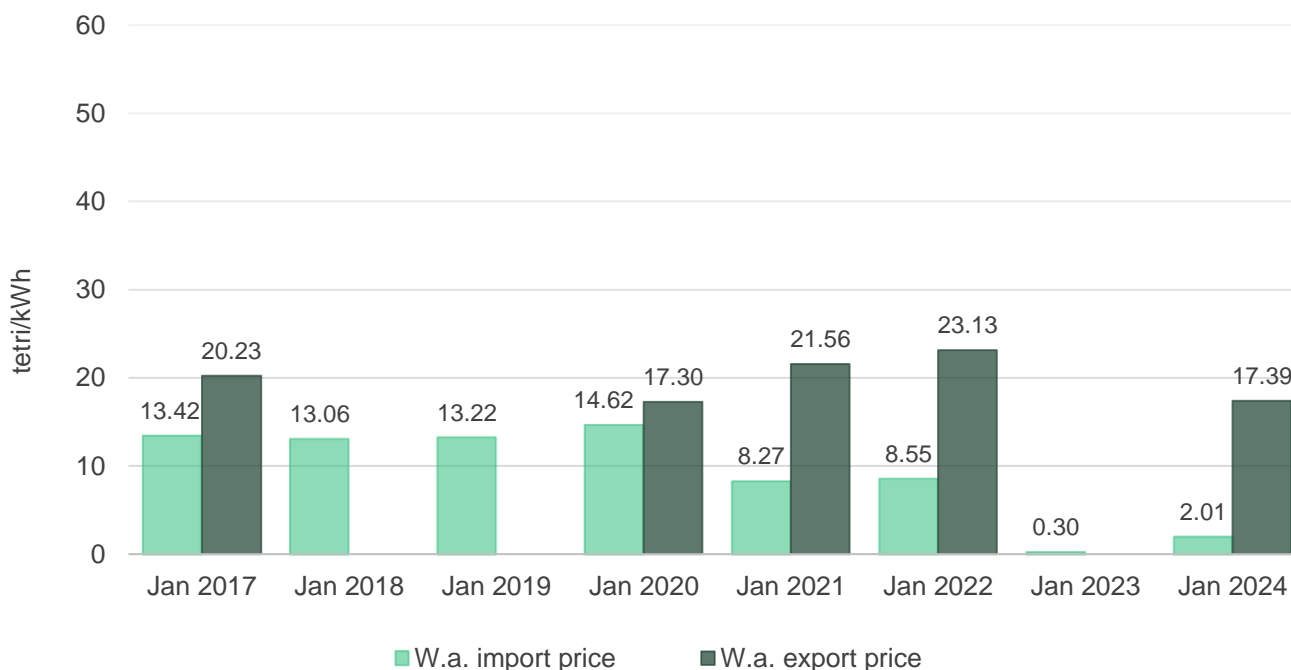
Figure 15 - Cost of Guaranteed Capacity



Source: ESCO

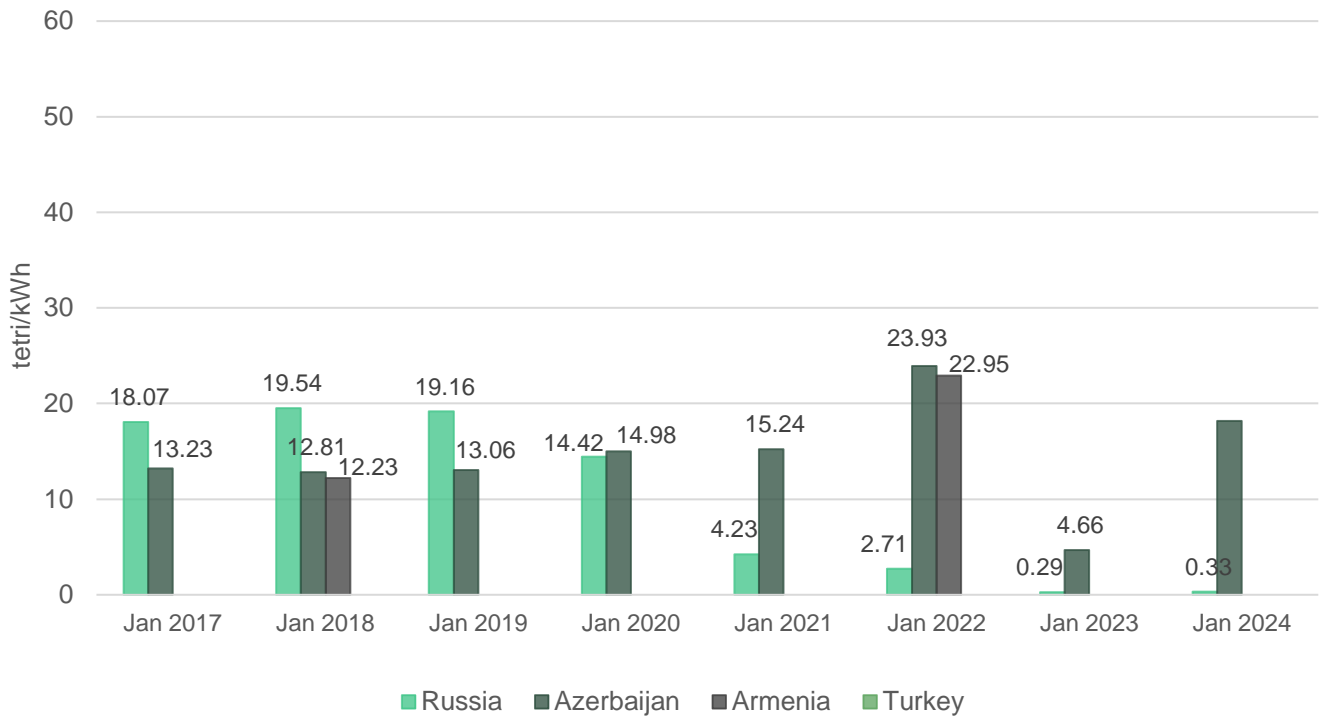
The electricity import prices in January 2024 were 0.75 ¢, or 2.01 tetri per kWh (Figure 16). This corresponds to an annual increase in price by 568% in USD and in GEL (prices were 0.11 ¢, or 0.30 tetri per kWh in January 2023). In December 2023, electricity import prices were 0.13 ¢, or 0.34 tetri per kWh (Figure 16). This corresponds to a monthly increase in prices by 498% in USD and 496% in Gel. The electricity export prices in January 2024 were 6.50 ¢, or 17.39 tetri per kWh (there was no export in January 2023) (Figure 16). In December 2023, electricity export prices were 6.70 ¢, or 18.0 tetri per kWh (Figure 16). This corresponds to a monthly decrease in prices by 3% in USD and 3% in Gel.

Figure 16 - Prices Import/Export

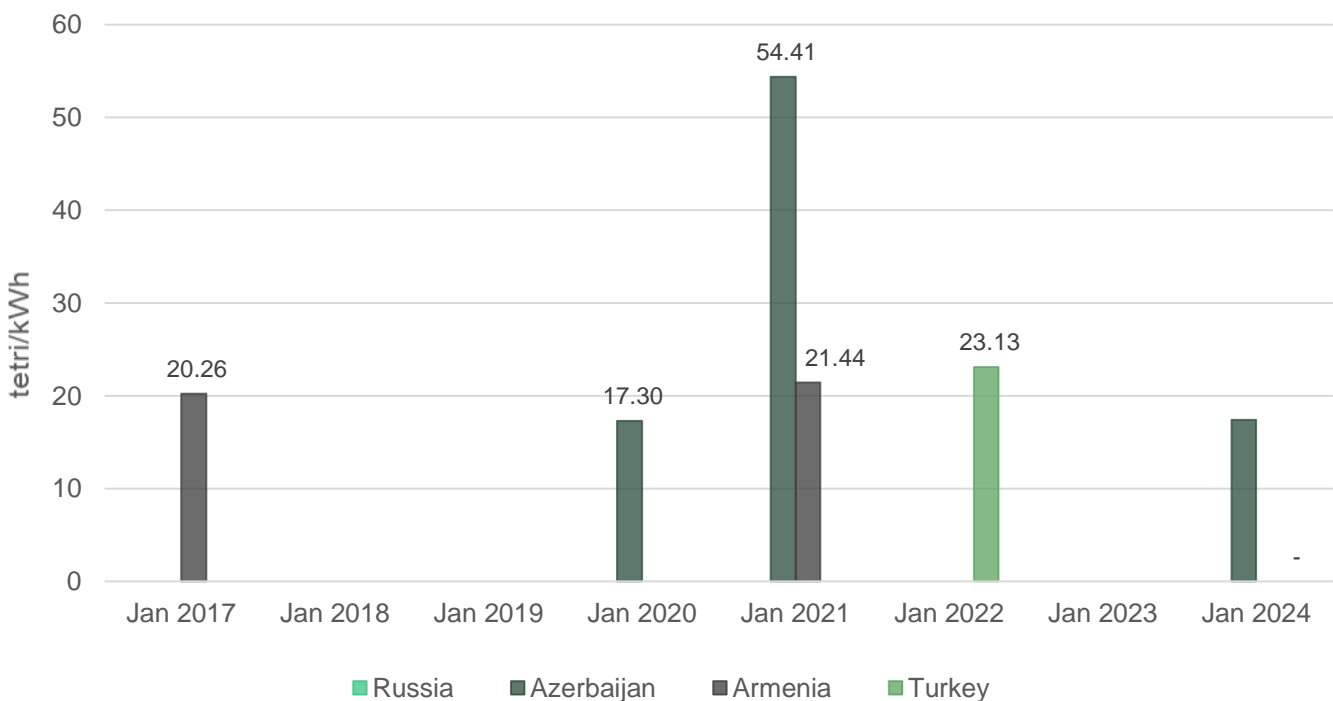


Source: ESCO

In January 2024, the electricity import price from Russia stood at 0.12 ¢ or 0.33 tetri, and from Azerbaijan at 6.81 ¢ or 18.21 tetri (Figure 17).

Figure 17 - Import Prices by Countries

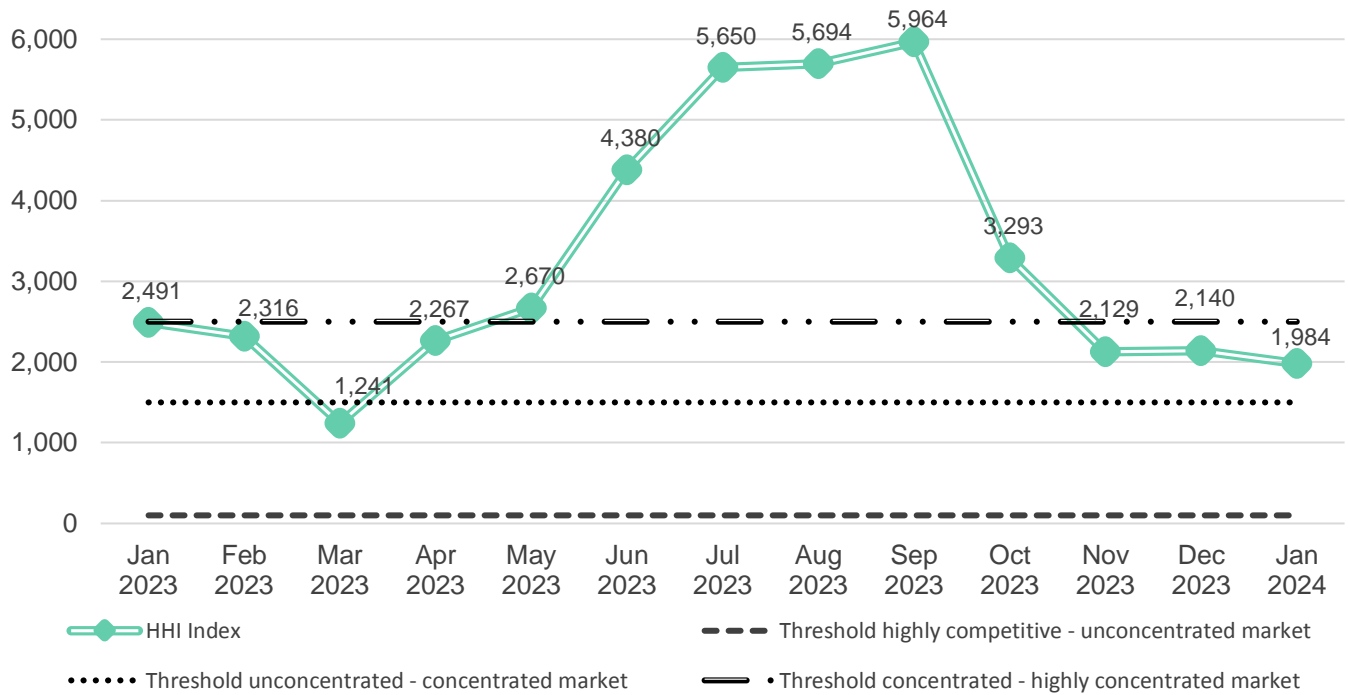
In January 2024, the electricity export price from Azerbaijan stood at 6.50 ¢ or 17.39 tetri (Figure 18).

Figure 18 - Export Prices by Countries

2. Market Concentration

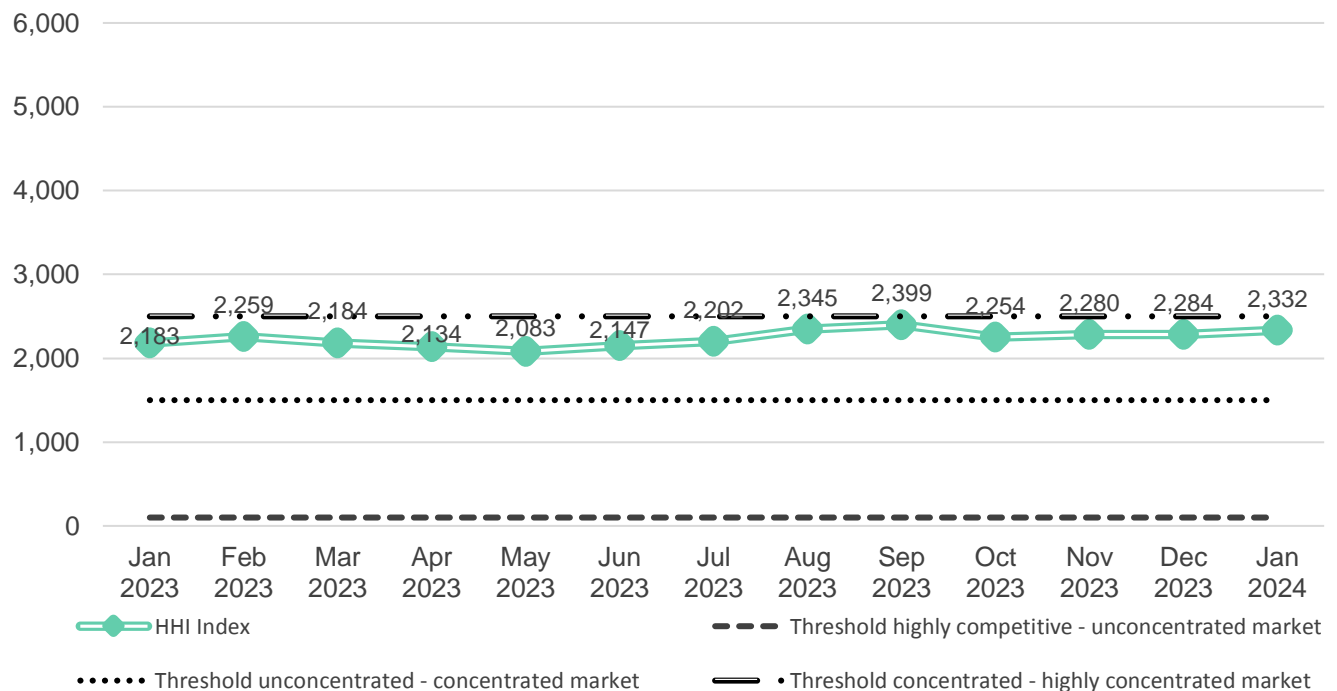
In conclusion, we utilize the Hirschman-Herfindahl (HHI) market concentration index to evaluate how competitive the generation and consumption segments of the market have been over the year. In January 2024, Georgian electricity generation market index remained between the threshold of highly concentrated and concentrated market with an HHI value of 1,984 (Figure 19). This is lower than the level in January 2023 (with an HHI value of 2,491), and lower than the level in December 2023 (the HHI was 2,140). As for the consumption segment, in January 2024, the HHI consumption index remained below the threshold for a highly concentrated market, with an HHI value of 2,332 (above the level in January 2023 – 2,183 and above the level in December 2023 – 2,284). 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