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ELECTRICITY MARKET REVIEW

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AGRICULTURE & RURAL POLICY RESEARCH CENTER

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INFORMATION

- In February 2024 there was an increase in the total electricity generation by 3% on a yearly basis and decrease by 13% on a monthly basis.
- Consumption increased by 5% on a yearly basis and decreased by 10% compared to the previous month.
- Consumption exceeded generation by 126 mln. kWh which was 12% of the total generation and 11% of the total consumption in February 2024.
- There were imports of 172.8 mln. kWh in February 2024.
- There were exports of 4.2 mln. kWh in February 2024.
- The main import partner country was Russia.
- The main export partner country was Azerbaijan.
- The price of imports reached 0.27 ¢, or 0.70 tetri per kWh.
- The price of exports reached 6.50 ¢, or 17.26 tetri per kWh.
- The HHI index for the Georgian electricity generation market fell below the threshold of concentrated market. In February 2024, its level was 1,424.
- The HHI for the Georgian electricity consumption market remained below the threshold of a highly concentrated market. In February 2024, its level was 2,224

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

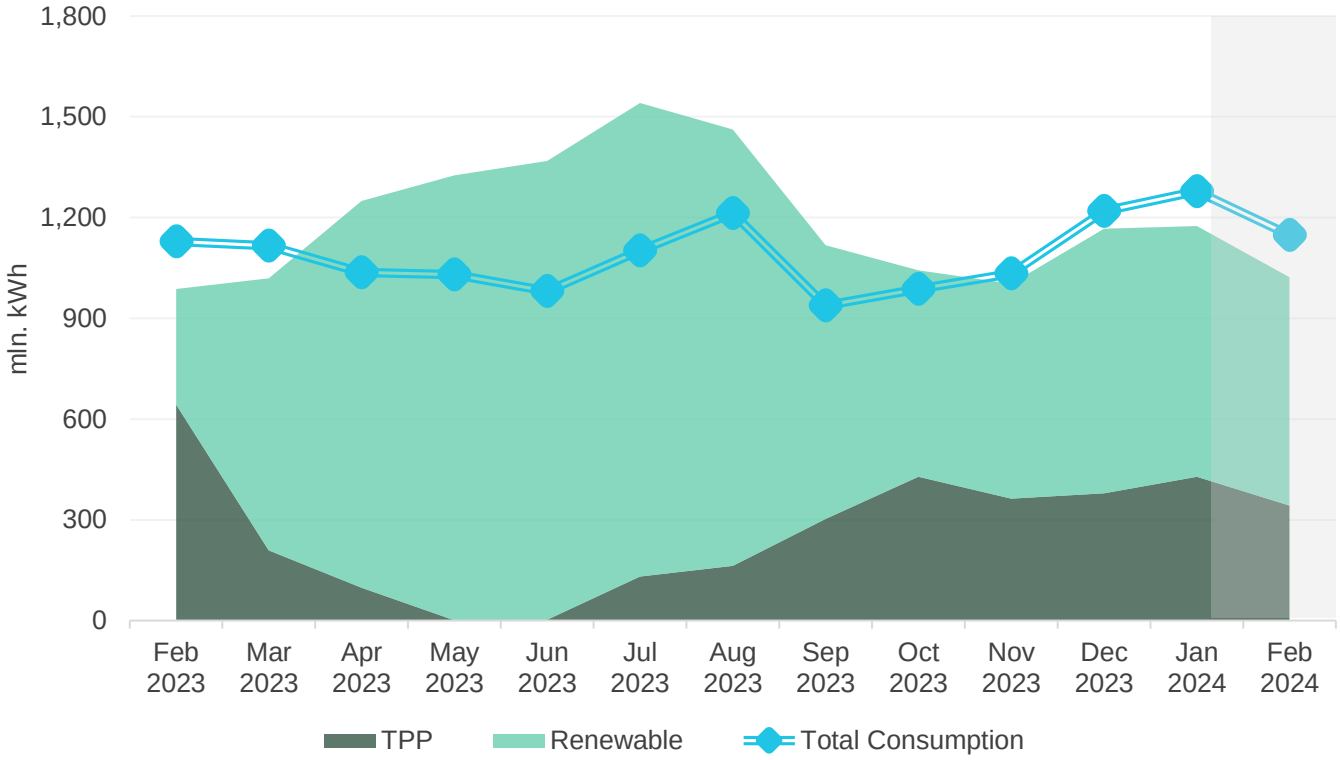
Generation – Consumption – Trade

In February 2024, Georgian power plants generated 1,022 mln. kWh of electricity (Figure 1). This represents a 3% increase in the total generation compared to the previous year (in February 2023, the total generation was 987 mln. kWh). The rise in generation on a yearly basis comes from an increase in hydro power generation by 99%, while generation of thermal and wind power plants decreased by 47% and 2%, respectively.

On a monthly basis, the generation decreased by 13% (in January 2024, the total generation was 1,175 mln. kWh) (Figure 1). The monthly fall in total generation is induced by the decrease of thermal and hydro power generation by 20% and 9%, respectively, while wind power generation increased by 5%.

The consumption of electricity on the local market was 1,148 mln. kWh (+1.7% compared to February 2023, and -10% compared to January 2024) (Figure 1). In February 2024, power consumption exceeded generation by 126 mln. kWh which was 12% of the total generation and 11% of the total consumption (in February 2023, the difference between the total generation and the consumption resulted in a deficit of 141 mln. kWh, around 14% of the total generation and 12% of the total consumption for the month).

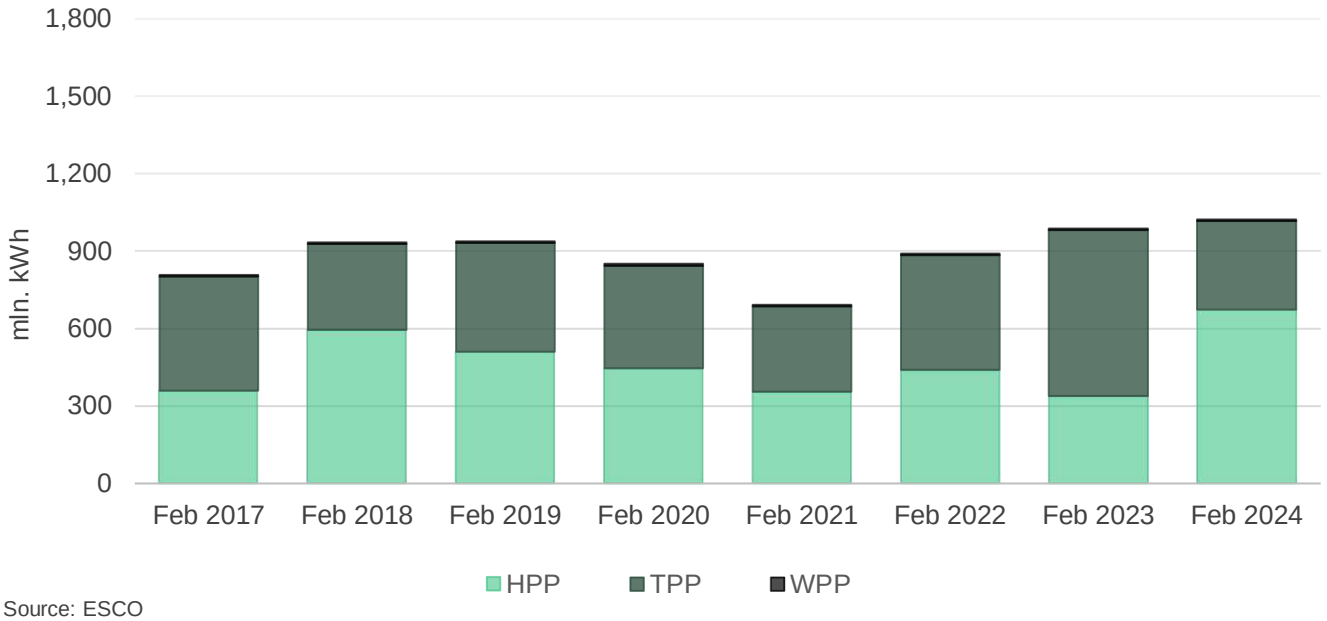
Figure 1 **- Electricity Consumption and Generation**



Source: Electricity System Commercial Operator (ESCO)

In February 2024, hydro power plants were the leading source of generation. In February 2024, hydro power (HPP) generation amounted to 674 mln. kWh (66% of total), thermal power (TPP) generation was 342 mln. kWh (33.5% of the total generation), while wind power (WPP) generation amounted to 6 mln. kWh (0.6% of the total generation) (Figure 2).

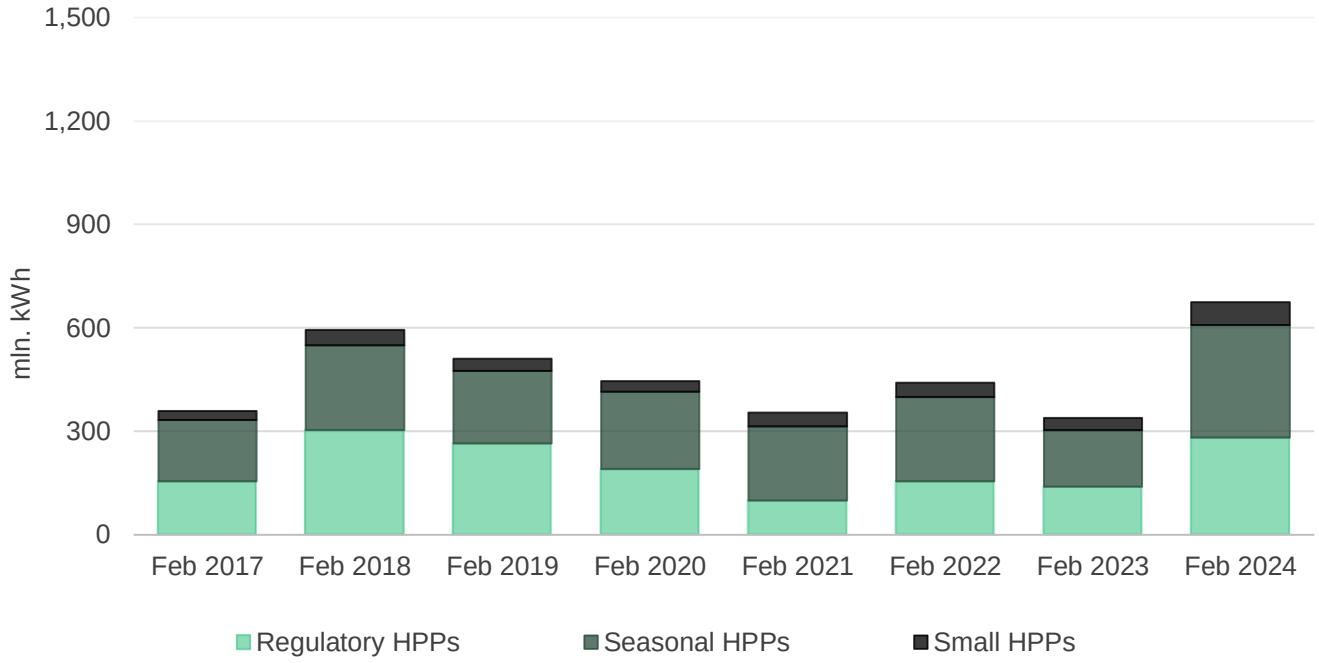
Figure 2 **- Electricity Generation by Sources**



Source: ESCO

Among hydropower generators, large (regulatory) HPPs produced 41.9% (282 mln. kWh) of electricity, while seasonal and small HPPs produced 48.4% (327 mln. kWh) and 9.7% (65 mln. kWh), respectively (Figure 3).

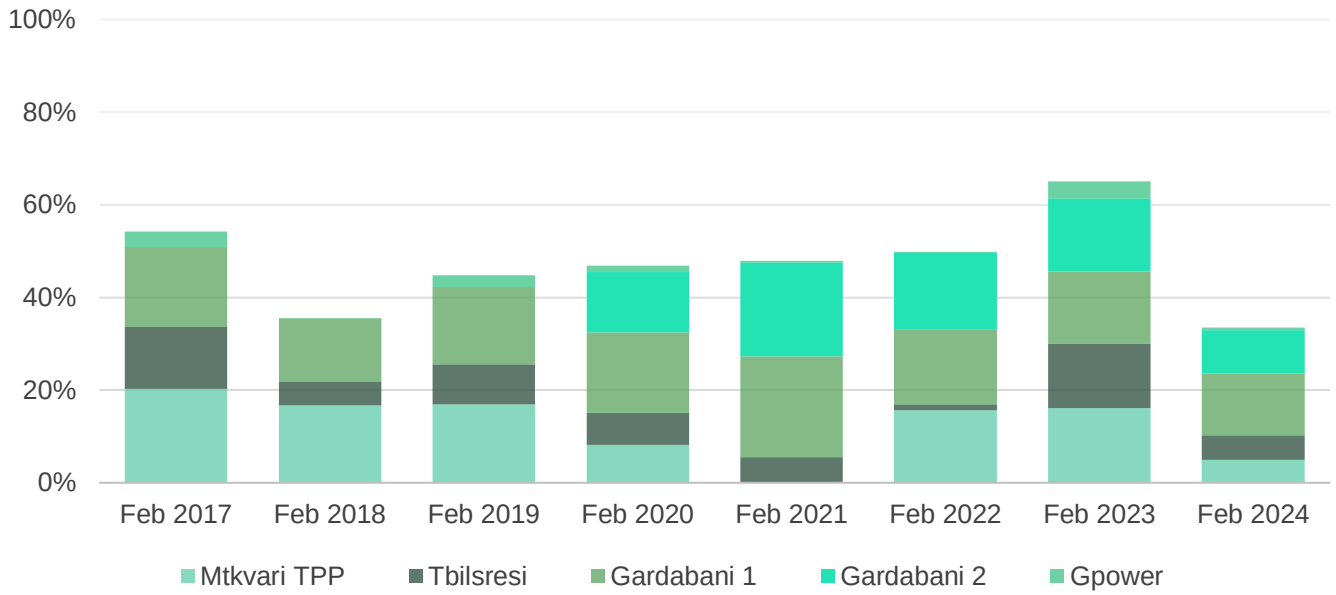
Figure 3 **- HPP Generation by Type**



Source: ESCO

As for thermal power generation, Gardabani 1 generated 136 mln. kWh (39.8% of TPP generation and 13.3% of total power generation), Gardabani 2 generated 95 mln. kWh (27.9% of TPP generation and 9.3% of total power generation), Mtkvari TPP generated 51 mln. kWh (14.8% of TPP generation and 5% of total power generation), Tbilsresi generated 54 mln. kWh (15.8% of TPP generation and 5.3% of total power generation) and Gpower generated 6 mln. kWh (1.7% of TPP generation and 0.6% of total power generation) (Figure 4).

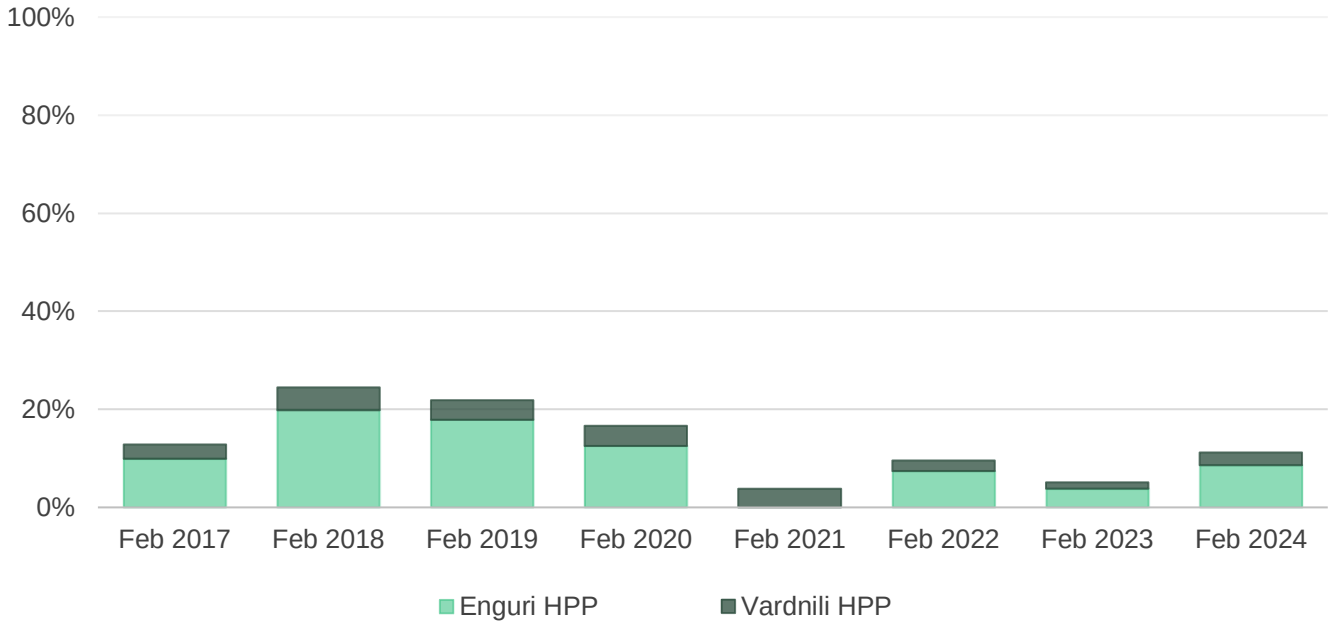
Figure 4 **- Share of Large TPPs in Total Generation**



Source: ESCO

As for HPP generation, Vardnili HPP generated 26 mln. kWh (9.3% of generation for regulatory HPPs and 2.6% of total generation). Enguri HPP generated 88 mln. kWh, which represents 31.3% of the generation of regulatory HPPs and 8.6% of total generation (Figure 5).

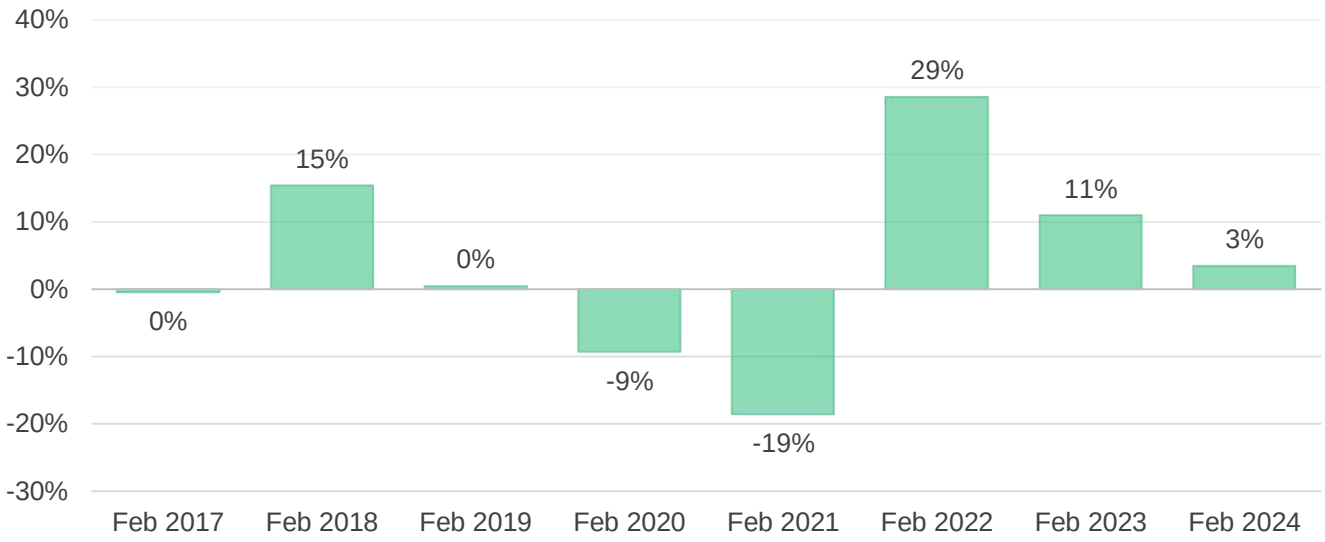
Figure 5 **- Share of Enguri and Vardnili in Total Generation**



Source: ESCO

Overall, the total generation increased by 3% compared to February 2023 (Figure 6).

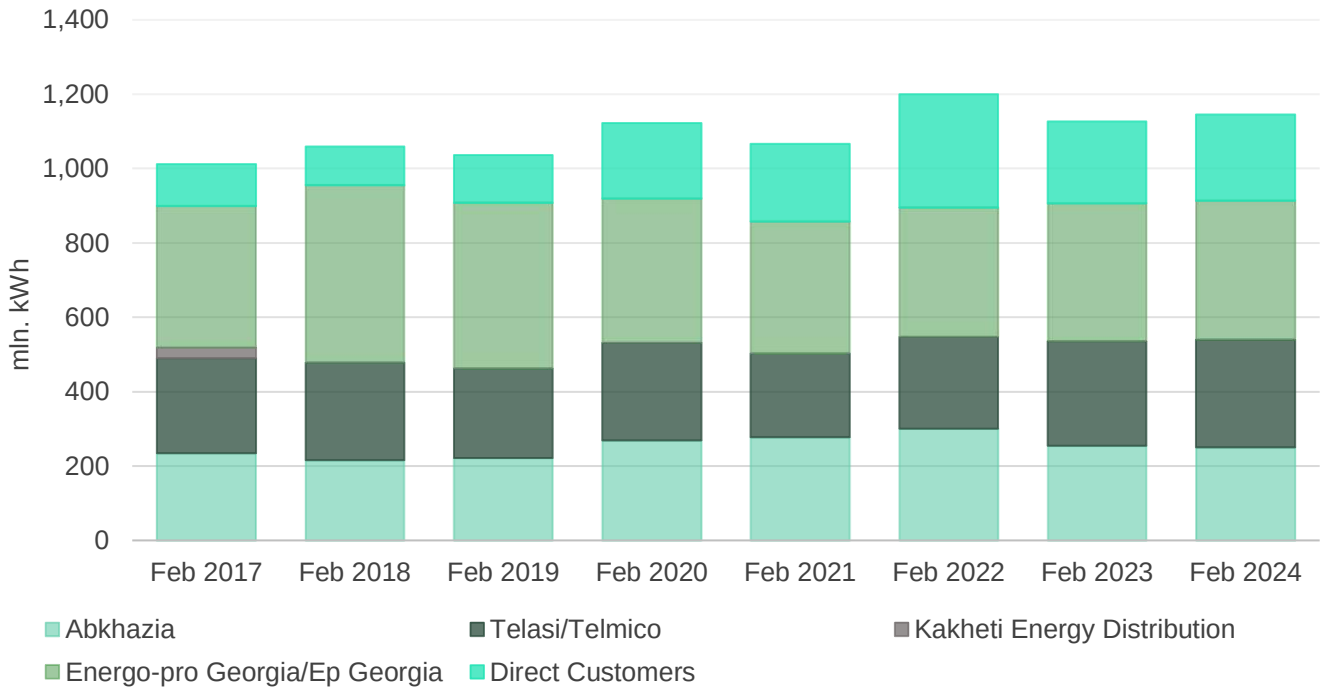
Figure 6 - Growth of Generation (%, y/y)



Source: ESCO

Total electricity demand came from: Energo-Pro Georgia/Ep Georgia[1] (33% - 373 mln. kWh), Abkhazia (22% - 251 mln. kWh), Telasi/Telmico[2] (25% - 289 mln. kWh), and direct customers (20% - 233 mln. kWh) (Figure 7). Annual demand from direct customers, Telasi/Telmico and Energo-Pro Georgia/Ep Georgia increased by 5%, 2.6% and 1.1%, respectively, while it fell from Abkhazia by 1.5%. Overall, there was an annual increase of 1.7% in the total electricity consumption in February 2024, compared to February 2023 (Figure 8).

Figure 7 - Electricity Consumption by Type of Consumer

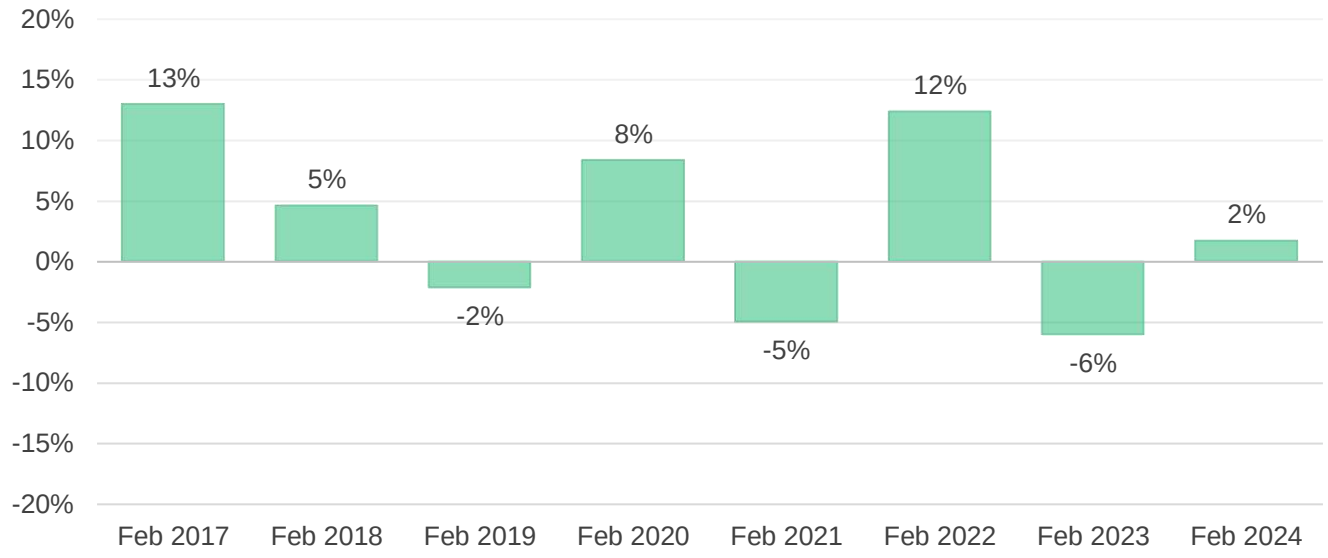


Source: ESCO

[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)

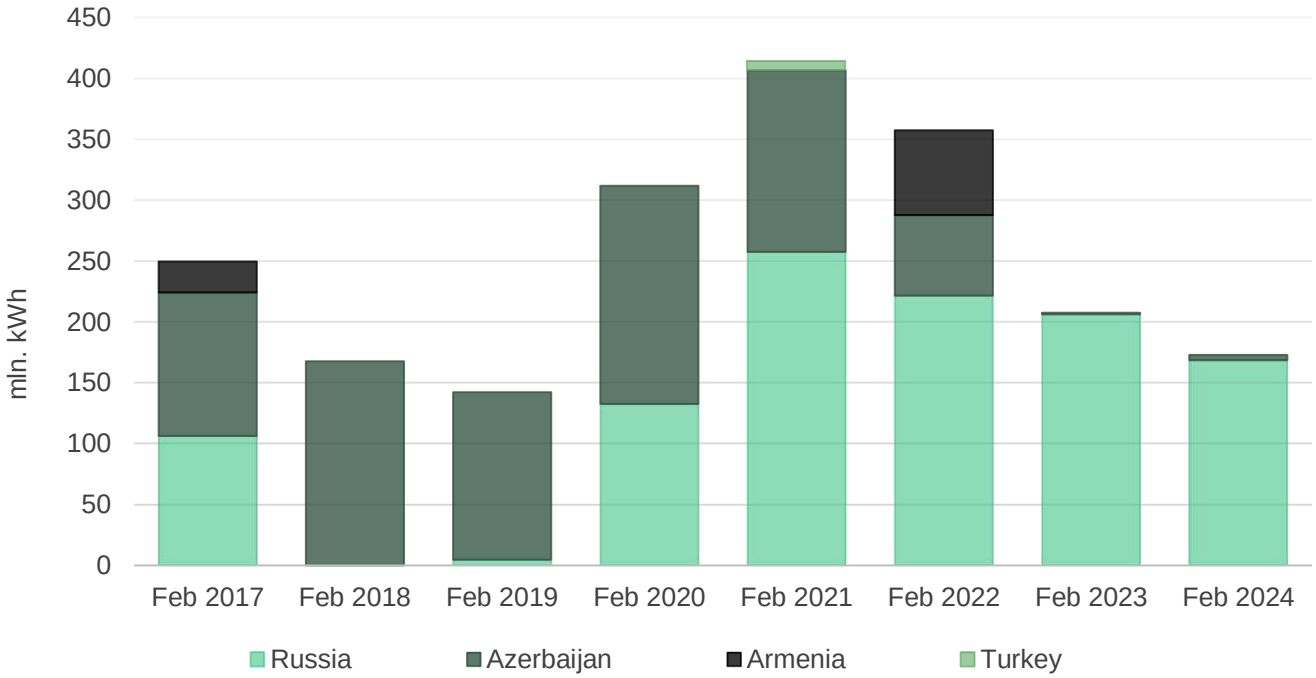


Source: ESCO

In February 2024, there was an import of 172.8 mln. kWh of electricity (in February 2023, there was import of 207 mln electricity) (Figure 9). 97.6% of this import came from Russia and 2.4% from Azerbaijan (in February 2023, 99.4% of import came from Russia and 0.6% from Azerbaijan). In February 2024, there was an export of 4.16 mln. kWh of electricity to Azerbaijan and 0.0003 mln. kWh of electricity to Turkey (in February 2023, there was an export of 1.4 mln. kWh of electricity to Azerbaijan) (Figure 10). There was 89.1 mln. kWh transit in February 2024 from Azerbaijan to Turkey (in February 2023, there was 317.5 mln. kWh transit from Azerbaijan to Turkey, and 52.6 mln. kWh transit from Armenia to Turkey).

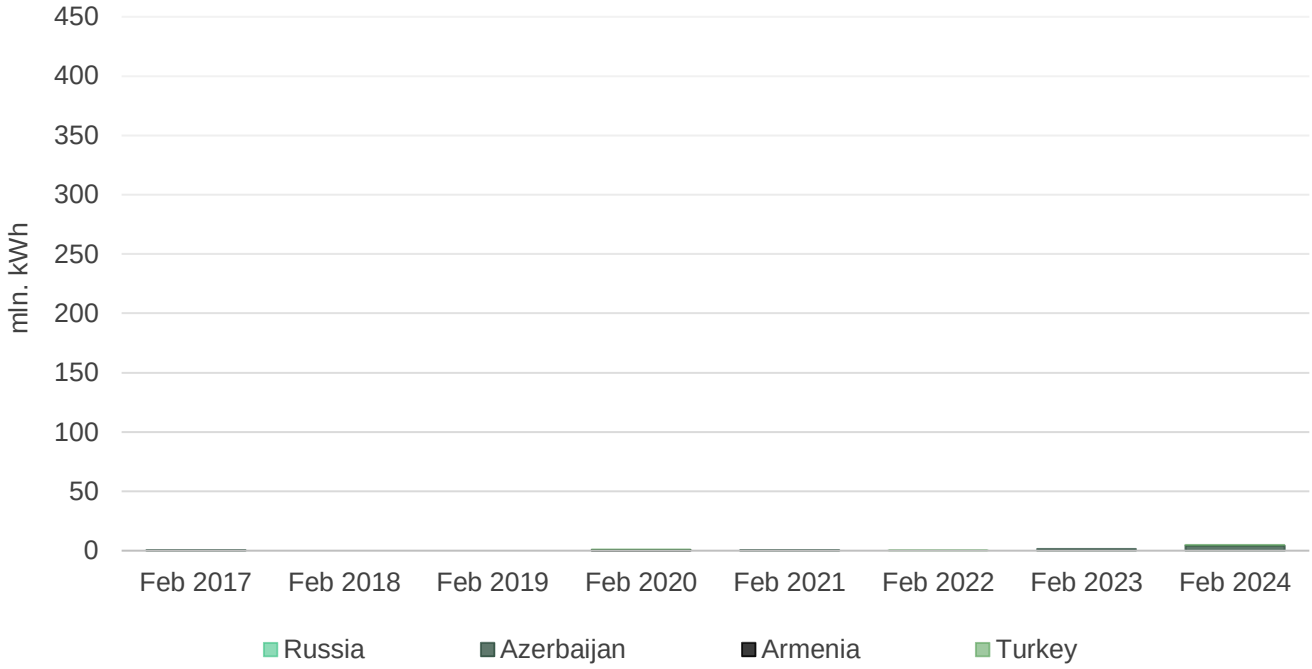
In February 2024, imports decreased by 16.7%, while exports increased by 3 times compared to February 2023.

Figure 9 - Imports by Year



Source: ESCO

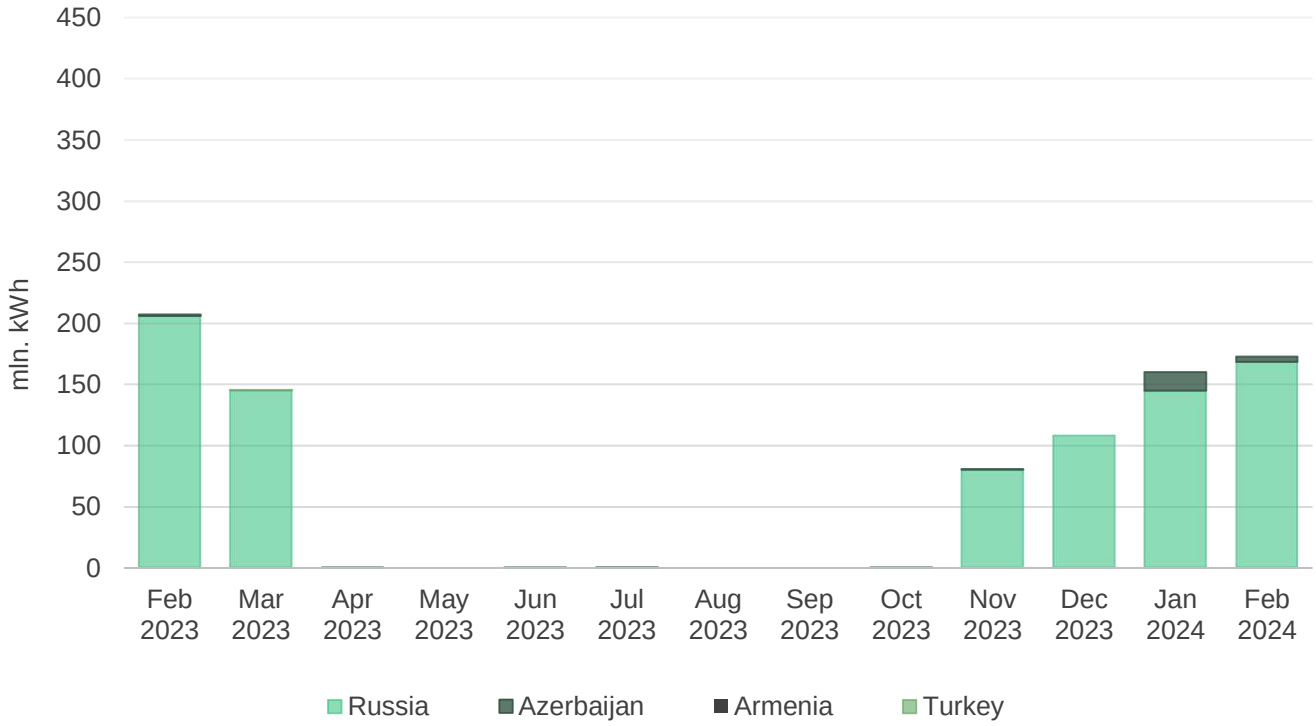
Figure 10 **- Exports by Year**



Source: ESCO

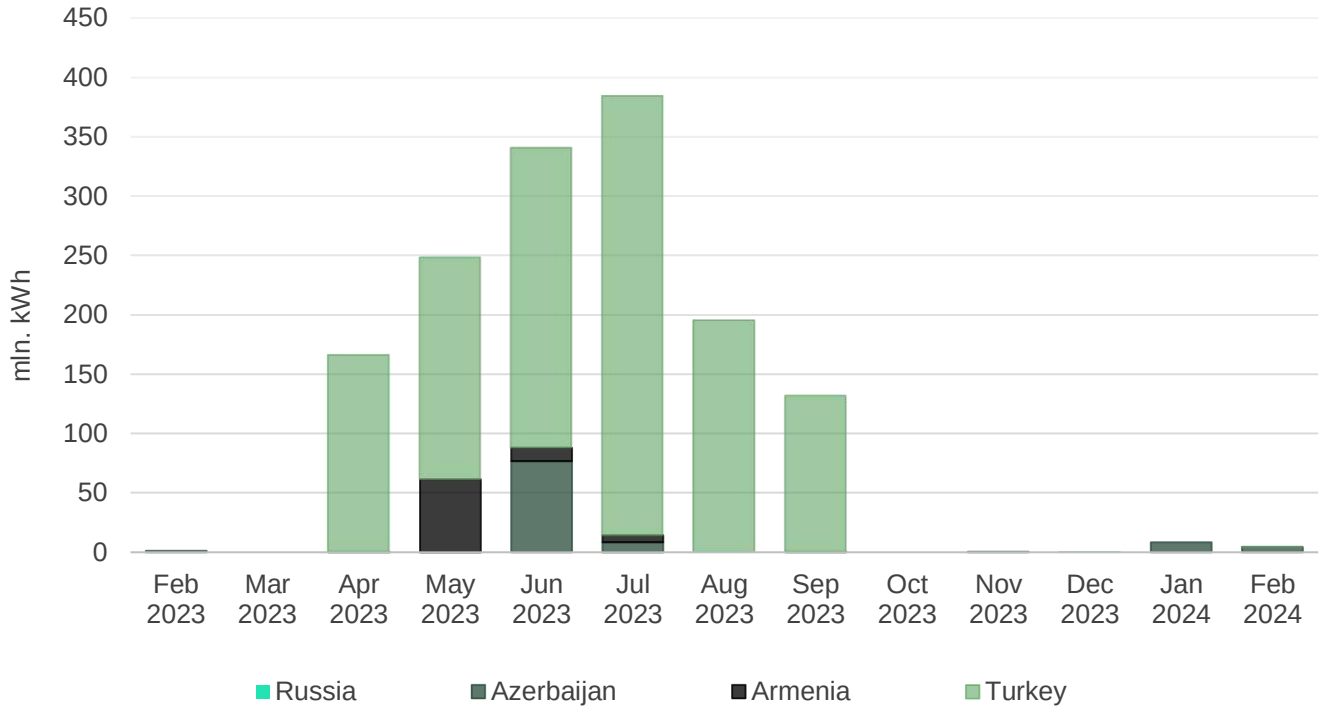
Electricity imports increased by 7.9% in February 2024, compared to January 2024 (Figure 11). Electricity exports decreased by 50.9% in February 2024, compared to January 2024 (Figure 12).

Figure 11 **- Imports by Month**



Source: ESCO

Figure 12 **- Exports by Month**

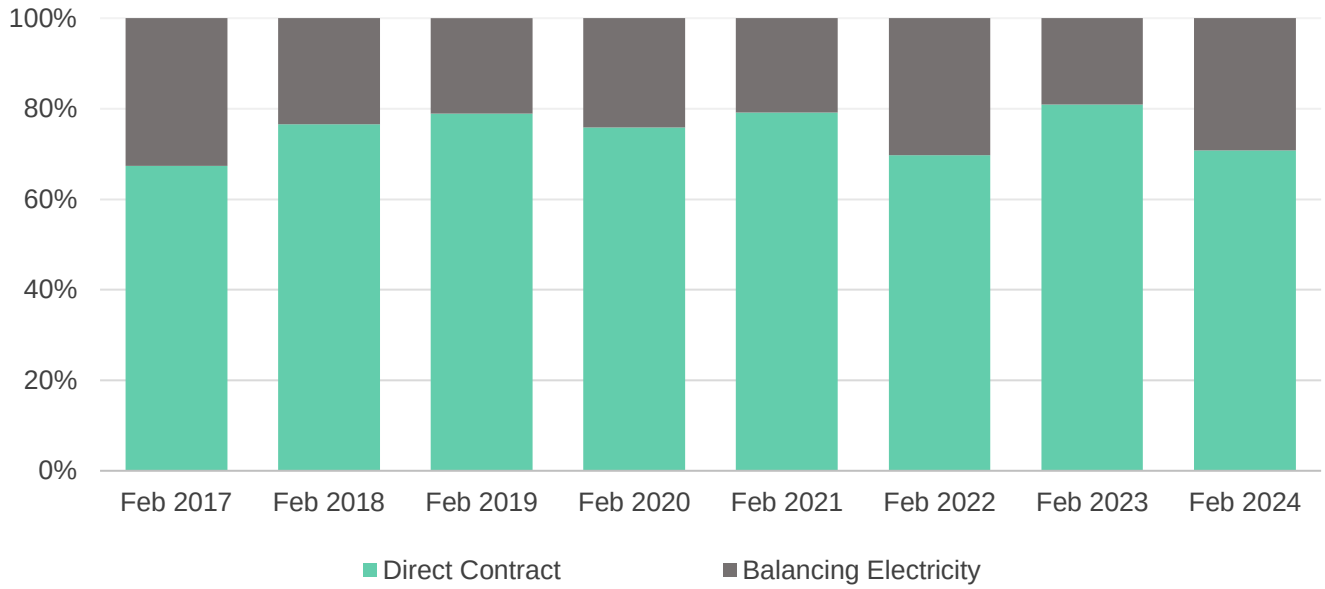


Source: ESCO

1. Market Operations

In February 2024, 71% of the electricity sold on/from the local market was sold through direct contracts. The remaining 29% was sold as balancing electricity (Figure 13).

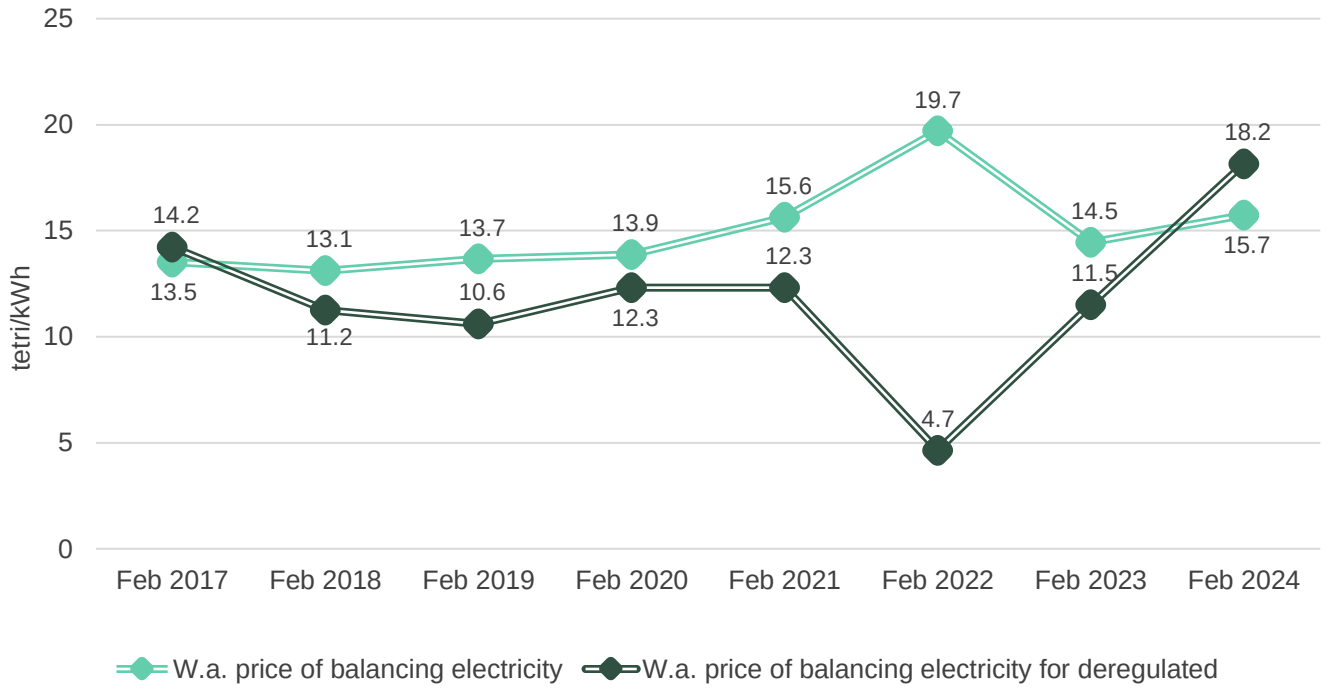
Figure 13 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

In February 2024, the weighted average price of balancing electricity was 15.7 tetri/kWh, which corresponds to an annual increase of 8.9% compared to February 2023. As for the weighted average price for deregulated (small) HPPs, it was 18.2 tetri/kWh, which corresponds to an annual increase of 57.8% compared to February 2023 (Figure 14).

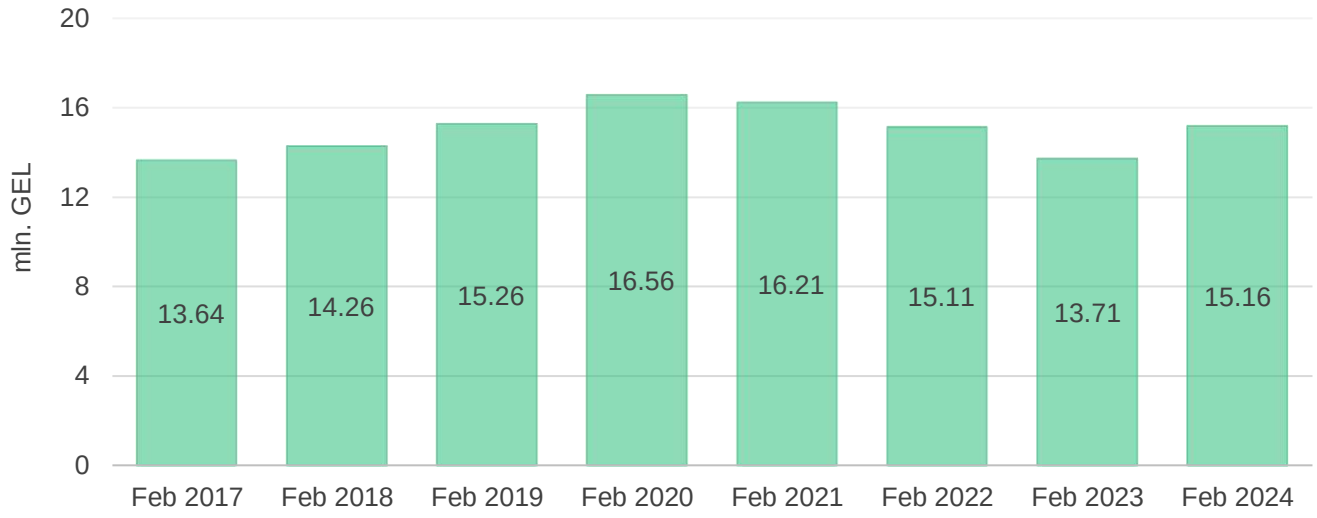
Figure 14 - Balancing Electricity Prices Weighted Average and Weighted Average Price for Deregulated HPPs



Source: ESCO

Guaranteed capacity payments in February 2024 were roughly 15.16 mln. GEL, which represents a 10.6% increase compared to February 2023 (Figure 15).

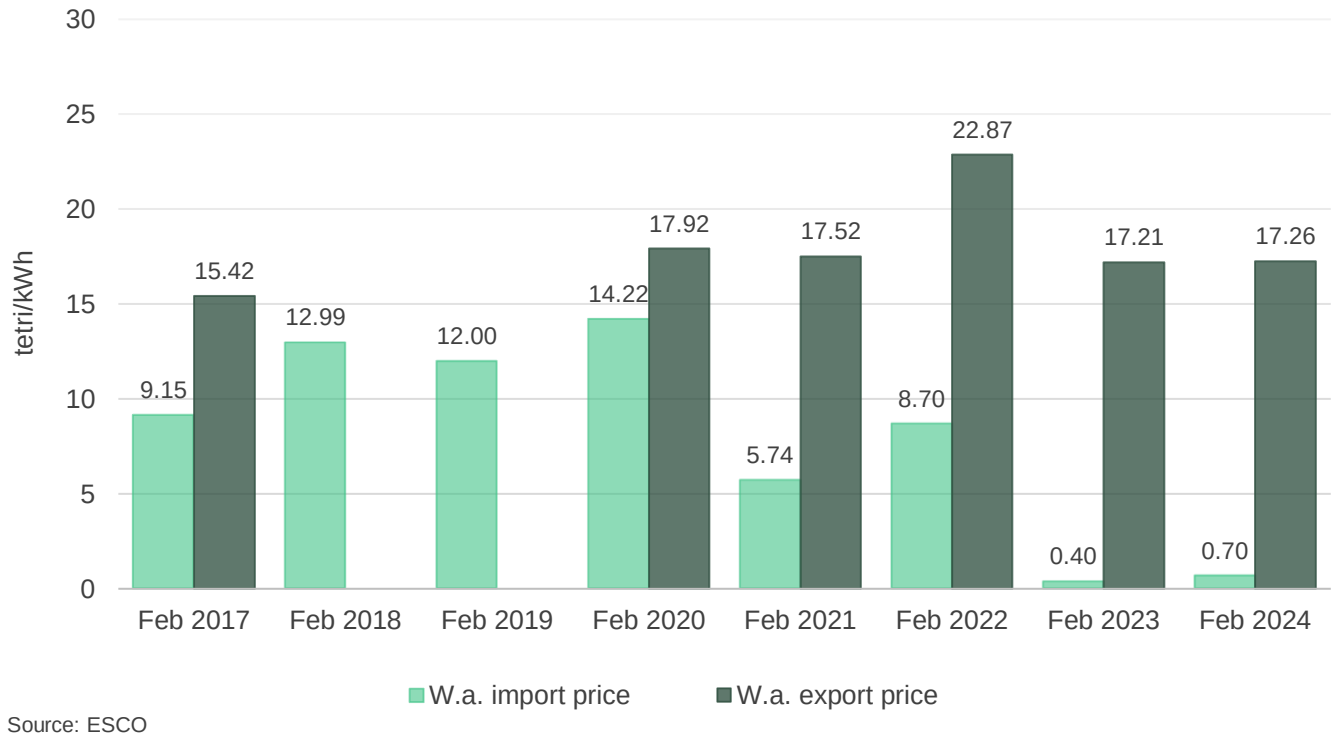
Figure 15 - Cost of Guaranteed Capacity



Source: ESCO

The electricity import prices in February 2024 were 0.27 ¢, or 0.70 tetri per kWh (Figure 16). This corresponds to an annual increase in price by 78% in USD and in GEL (prices were 0.15 ¢, or 0.40 tetri per kWh in February 2023). In January 2024, electricity import prices were 0.75 ¢, or 2.01 tetri per kWh (Figure 16). This corresponds to a monthly decrease in prices by 64.6% in USD and 64.9% in GEL. The electricity export prices in February 2024 were 6.50 ¢, or 17.26 tetri per kWh. This corresponds to an annual decrease in price by 0.02% in USD and increase in GEL by 0.3% (prices were 6.50 ¢, or 17.21 tetri per kWh in February 2023) (Figure 16). In January 2024, electricity export prices were 6.50 ¢, or 17.39 tetri per kWh (Figure 16). This corresponds to a monthly decrease in prices by 0.01% in USD and 0.7% in GEL.

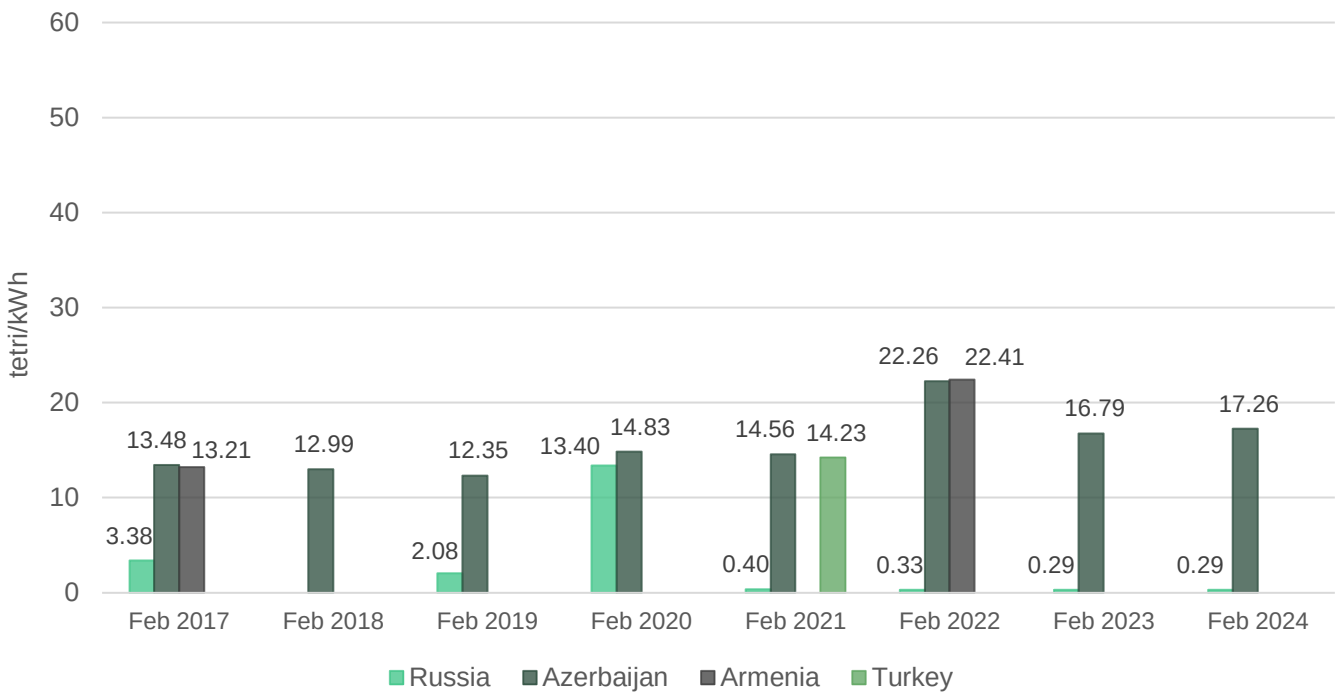
Figure 16 - Prices Import/Export



Source: ESCO

In February 2024, the electricity import price from Russia stood at 0.11 ¢ or 0.29 tetri, and from Azerbaijan at 6.50 ¢ or 17.26 tetri (Figure 17).

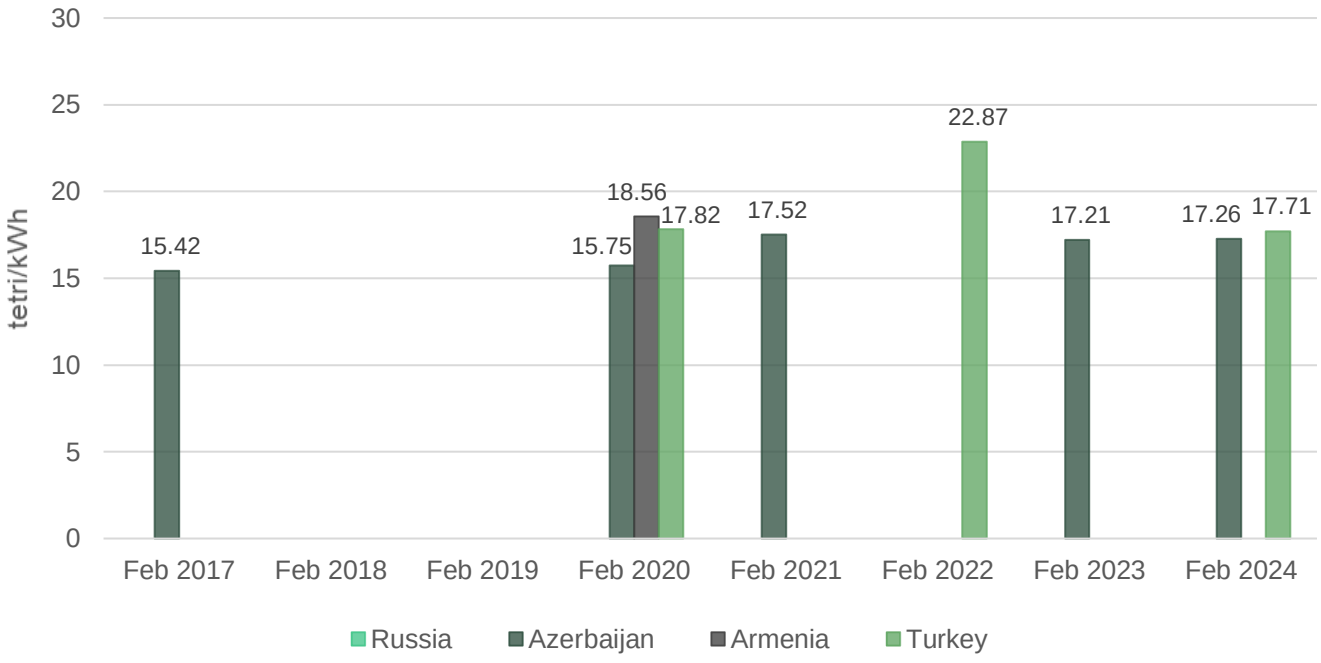
Figure 17 - Import Prices by Countries



Source: ESCO/Geostat

In February 2024, the electricity export price from Azerbaijan stood at 6.50 ¢ or 17.26 tetri, and from Turkey at 6.67 ¢ or 17.71 tetri (Figure 18).

Figure 18 - Export Prices by Countries

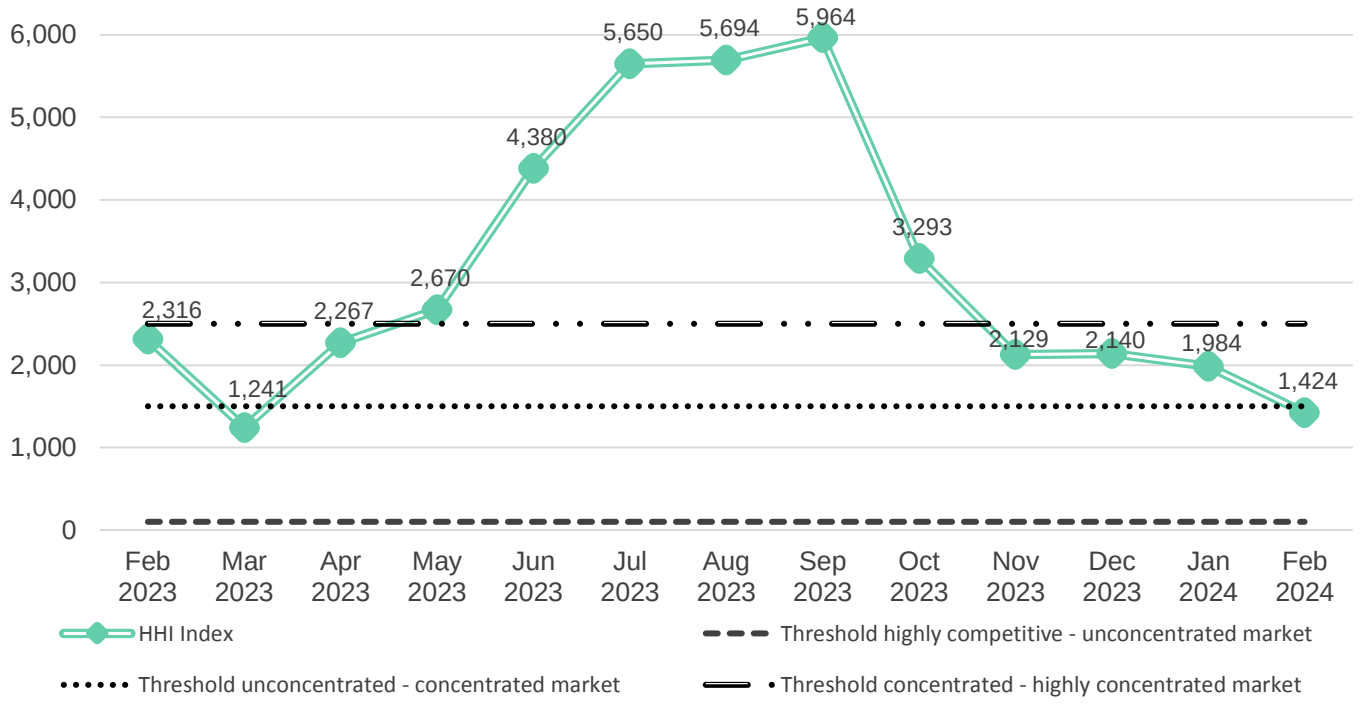


Source: ESCO/Geostat

2. Market Concentration

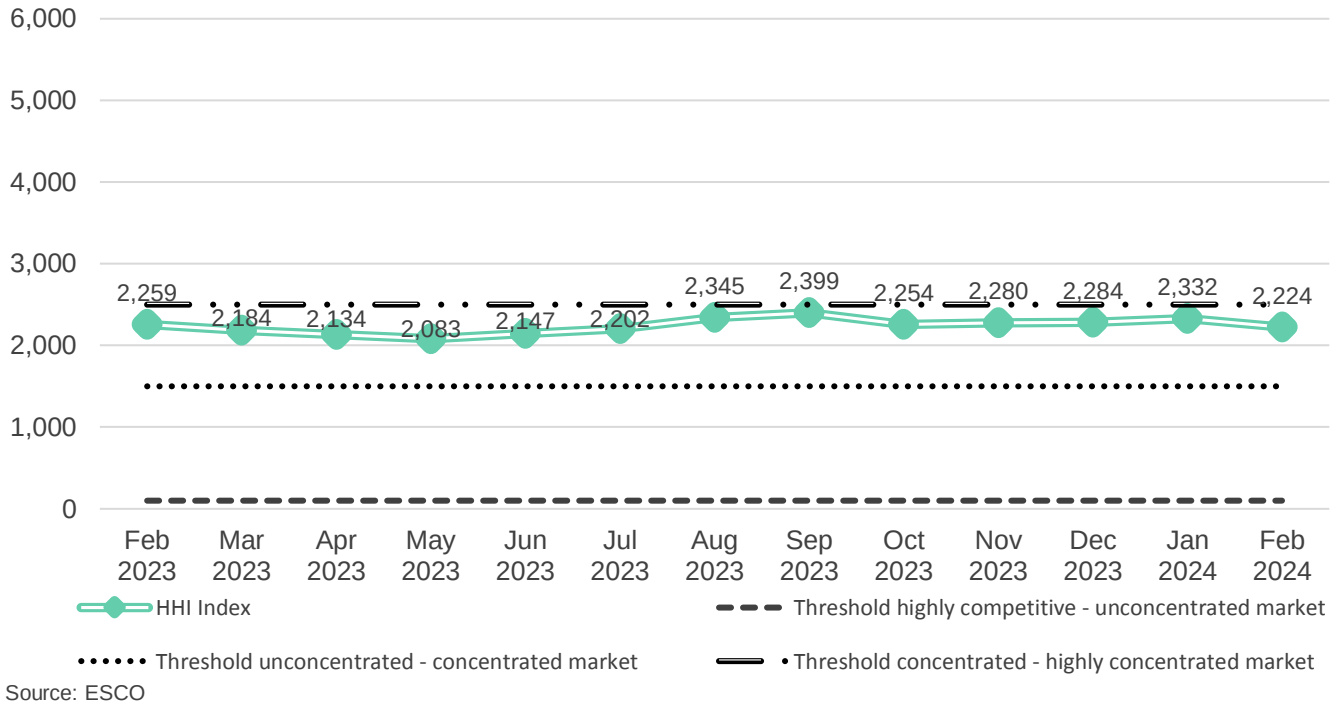
In conclusion, we utilize the Hirschman-Herfindahl (HHI) market concentration index to evaluate how competitive the generation and consumption segments of the market have been over the year. In February 2024, Georgian electricity generation market index fell below the threshold of concentrated with an HHI value of 1,424 (Figure 19). This is lower than the level in February 2023 (with an HHI value of 2,316), and lower than the level in January 2024 (the HHI was 1,984). As for the consumption segment, in February 2024, the HHI consumption index remained below the threshold for a highly concentrated market, with an HHI value of 2,224 (below the level in February 2023 – 2,332 and below the level in January 2024 – 2,259). 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