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ELECTRICITY MARKET REVIEW

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AGRICULTURE & RURAL POLICY RESEARCH CENTER

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INFORMATION

- In March 2024 there was an increase in the total electricity generation by 11% on a yearly and on a monthly basis.
- Consumption increased by 1.4% on a yearly basis and by 3% compared to the previous month.
- Consumption exceeded generation by 52 mln. kWh which was 5% of the total generation and 4% of the total consumption in March 2024.
- There were imports of 105.5 mln. kWh in March 2024.
- There were exports of 7.66 mln. kWh in March 2024.
- The main import partner country was Russia.
- The main export partner country was Armenia.
- The price of imports reached 0.19 ¢, or 0.50 tetri per kWh.
- The price of exports reached 5.76 ¢, or 15.46 tetri per kWh.
- The HHI index for the Georgian electricity generation market was between the threshold of concentrated and highly concentrated market. In March 2024, its level was 1,934.
- The HHI for the Georgian electricity consumption market remained below the threshold of a highly concentrated market. In March 2024, its level was 2,212.

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

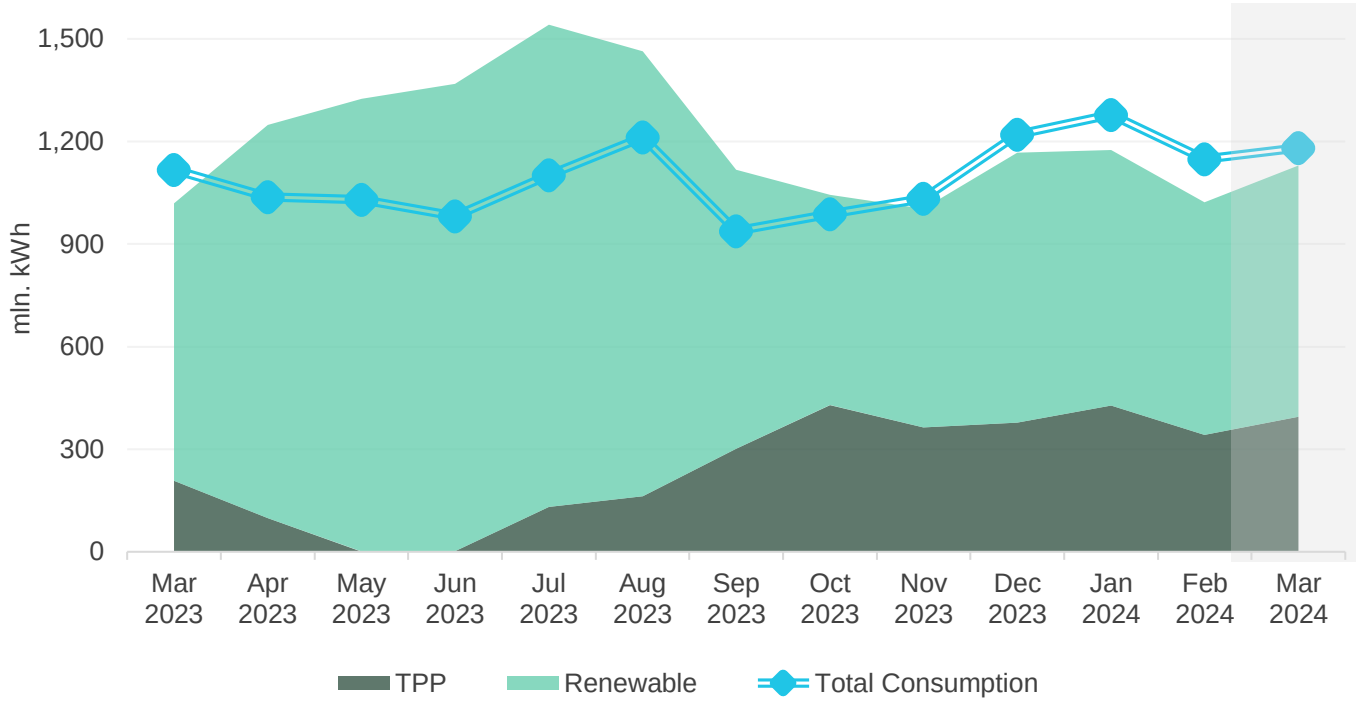
1. Generation – Consumption – Trade

In March 2024, Georgian power plants generated 1,130 mln. kWh of electricity (Figure 1). This represents an 11% increase in the total generation compared to the previous year (in March 2023, the total generation was 1,019 mln. kWh). The rise in generation on a yearly basis comes from an increase in generation of thermal and wind power plants by 90% and 20%, respectively while hydro power plant generation decreased by 10%.

On a monthly basis, the generation increased by 11% (in February 2024, the total generation was 1,022 mln. kWh) (Figure 1). The monthly rise in total generation is induced by the increase of thermal, hydro and wind power generation by 16%, 8% and 47%, respectively.

The consumption of electricity on the local market was 1,182 mln. kWh (+6% compared to March 2023, and +3% compared to February 2024) (Figure 1). In March 2024, power consumption exceeded generation by 52 mln. kWh which was 5% of the total generation and 4% of the total consumption (in March 2023, the difference between the total generation and the consumption resulted in a deficit of 97 mln. kWh, around 10% of the total generation and 9% of the total consumption for the month).

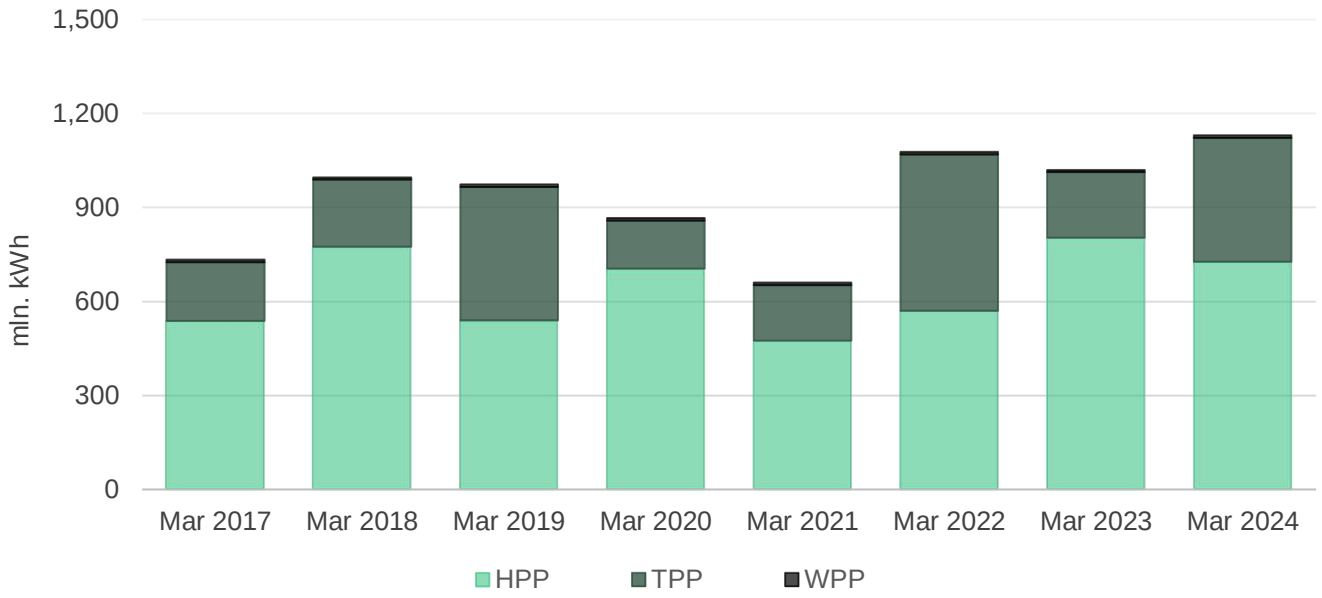
Figure 1 **- Electricity Consumption and Generation**



Source: Electricity System Commercial Operator (ESCO)

In March 2024, hydro power plants were the leading source of generation. In March 2024, hydro power (HPP) generation amounted to 727 mln. kWh (64.3% of total), thermal power (TPP) generation was 395 mln. kWh (35% of the total generation), while wind power (WPP) generation amounted to 8 mln. kWh (0.7% of the total generation) (Figure 2).

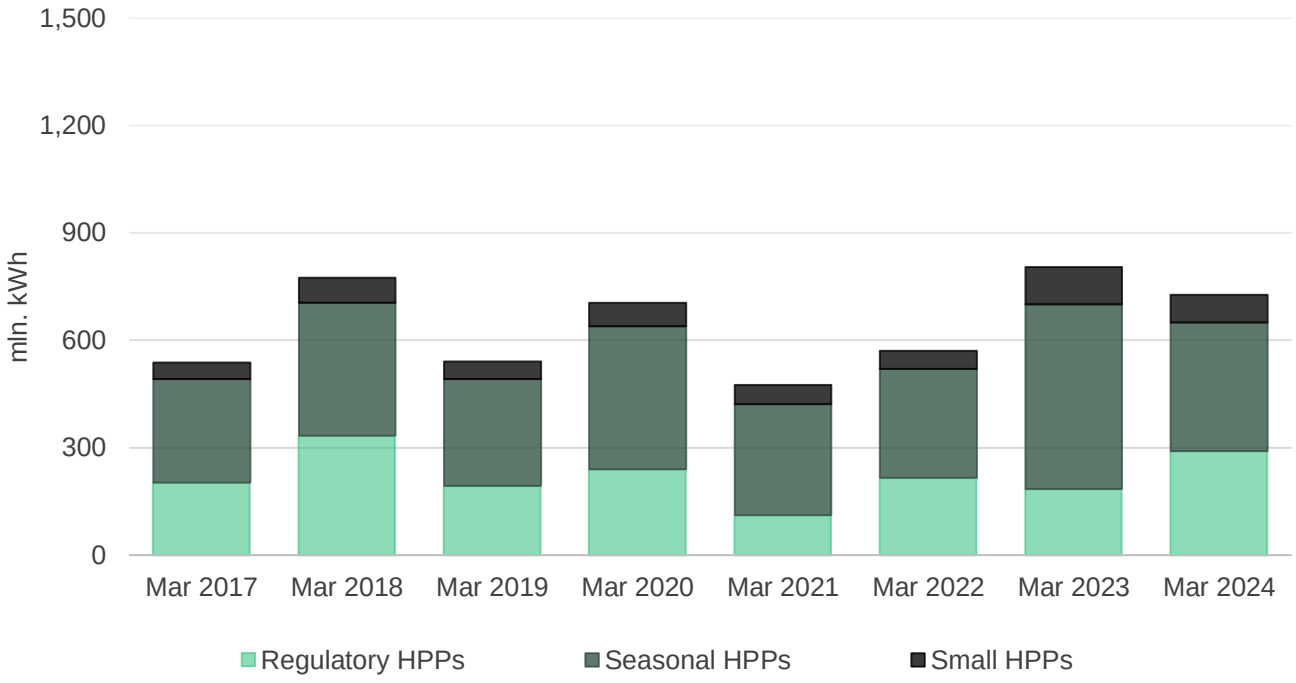
Figure 2 **- Electricity Generation by Sources**



Source: ESCO

Among hydropower generators, large (regulatory) HPPs produced 40.1% (291 mln. kWh) of electricity, while seasonal and small HPPs produced 49.3% (358 mln. kWh) and 10.6% (77 mln. kWh), respectively (Figure 3).

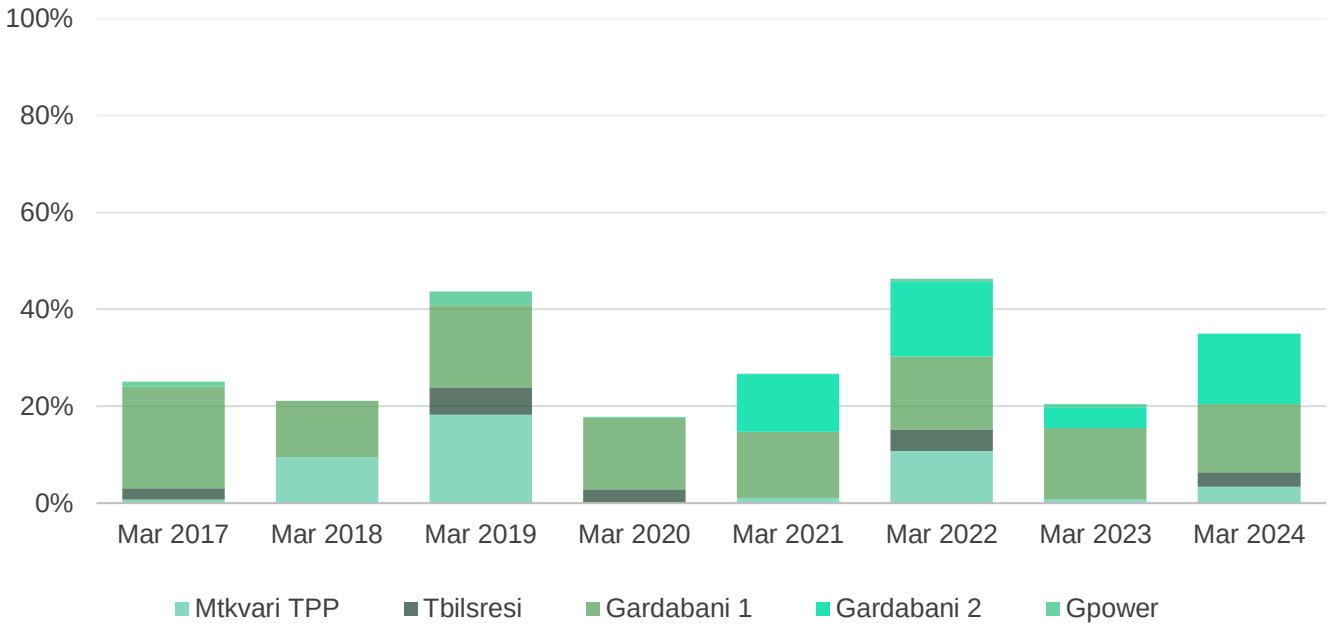
Figure 3 **- HPP Generation by Type**



Source: ESCO

As for thermal power generation, Gardabani 1 generated 160 mln. kWh (40.4% of TPP generation and 14.1% of total power generation), Gardabani 2 generated 164 mln. kWh (41.4% of TPP generation and 14.5% of total power generation), Mtkvari TPP generated 38 mln. kWh (9.6% of TPP generation and 3.4% of total power generation) and Tbilsresi generated 34 mln. kWh (8.6% of TPP generation and 3% of total power generation) (Figure 4).

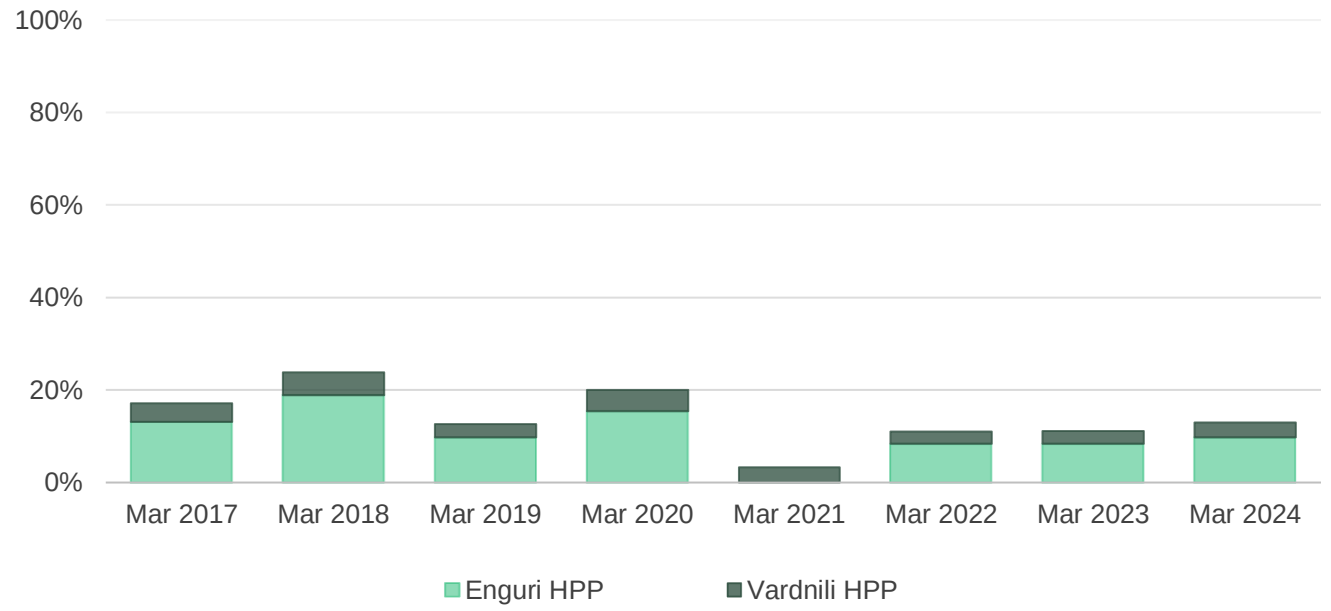
Figure 4 **- Share of Large TPPs in Total Generation**



Source: ESCO

As for HPP generation, Vardnili HPP generated 36 mln. kWh (12.5% of generation for regulatory HPPs and 3.2% of total generation). Enguri HPP generated 110 mln. kWh, which represents 38% of the generation of regulatory HPPs and 9.8% of total generation (Figure 5).

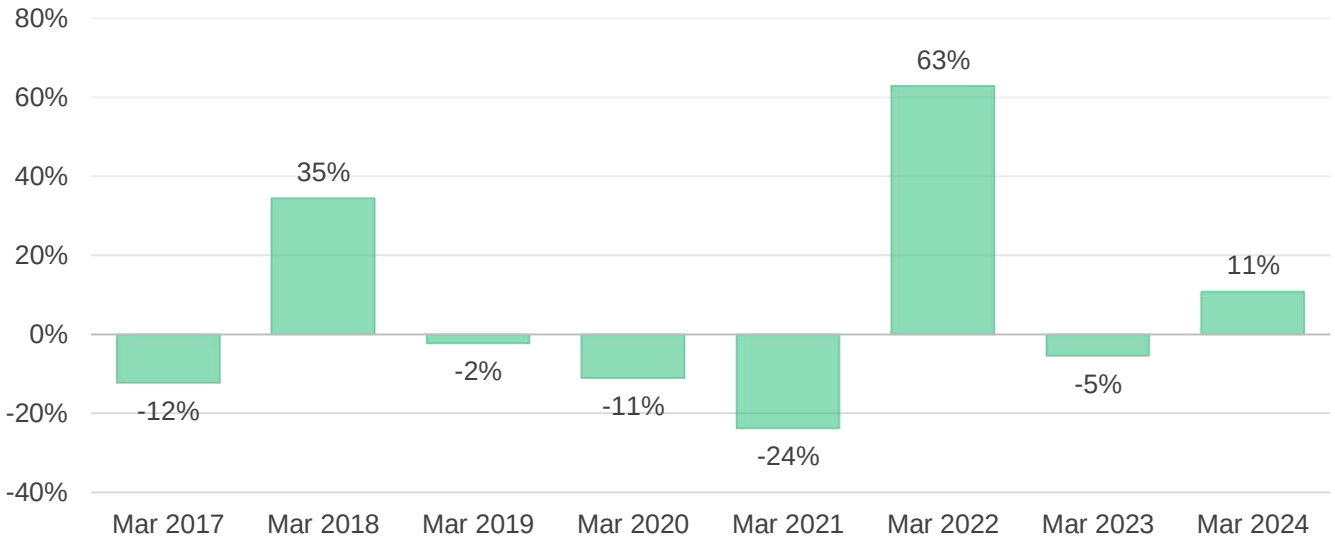
Figure 5 **- Share of Enguri and Vardnili in Total Generation**



Source: ESCO

Overall, the total generation increased by 11% compared to March 2023 (Figure 6).

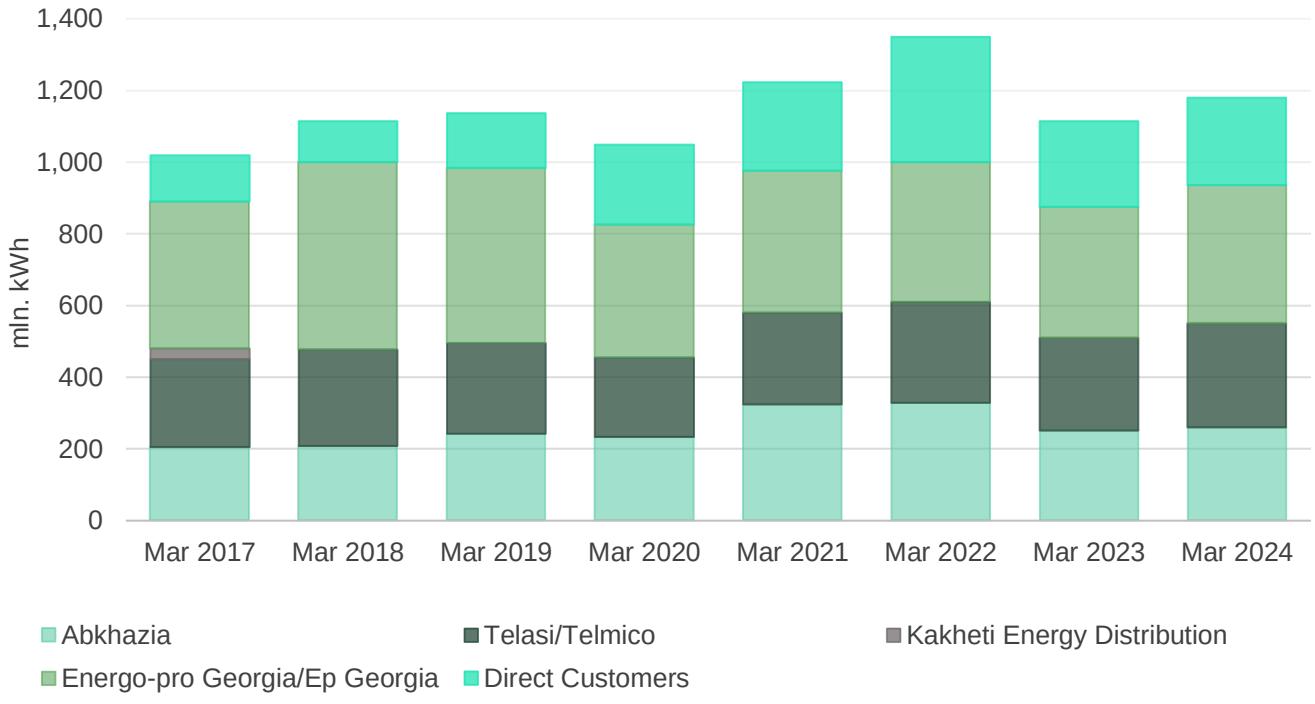
Figure 6 - Growth of Generation (%, y/y)



Source: ESCO

Total electricity demand came from: Energo-Pro Georgia/Ep Georgia[1] (32.6% - 386 mln. kWh), Abkhazia (22.1% - 261 mln. kWh), Telasi/Telmico[2] (24.5% - 290 mln. kWh), and direct customers (20.6% - 233 mln. kWh) (Figure 7). Annual demand from direct customers, Telasi/Telmico, Energo-Pro Georgia/Ep Georgia and Abkhazia increased by 1.4%, 12.2%, 5.7% and 3.6%, respectively. Overall, there was an annual increase of 5.8% in the total electricity consumption in March 2024, compared to March 2023 (Figure 8).

Figure 7 - Electricity Consumption by Type of Consumer

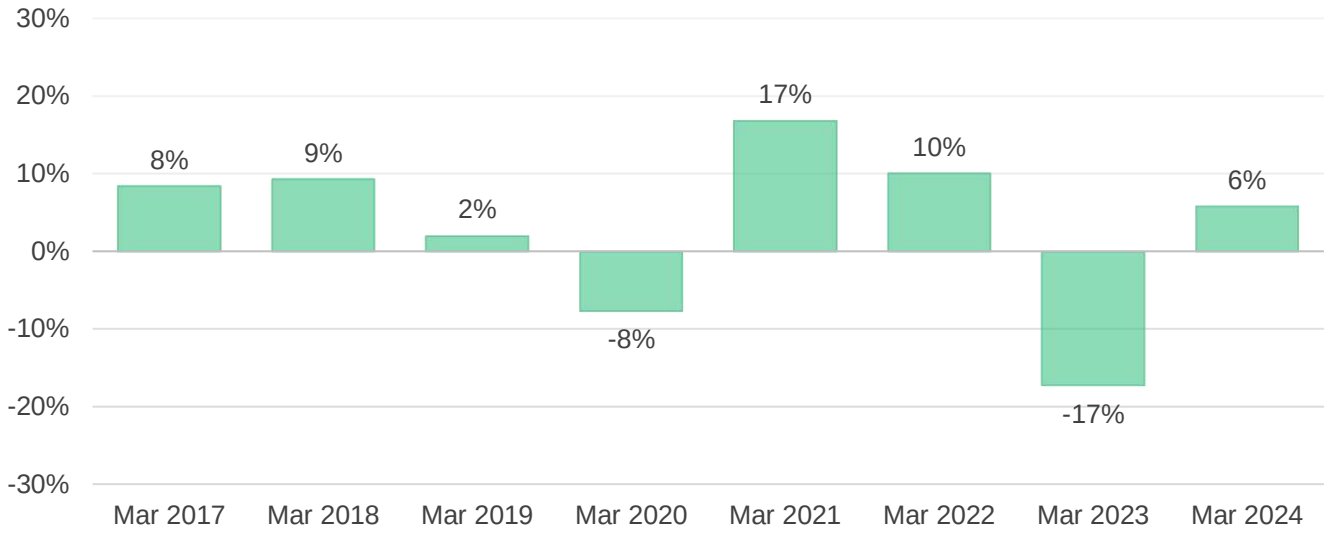


Source: ESCO

[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)

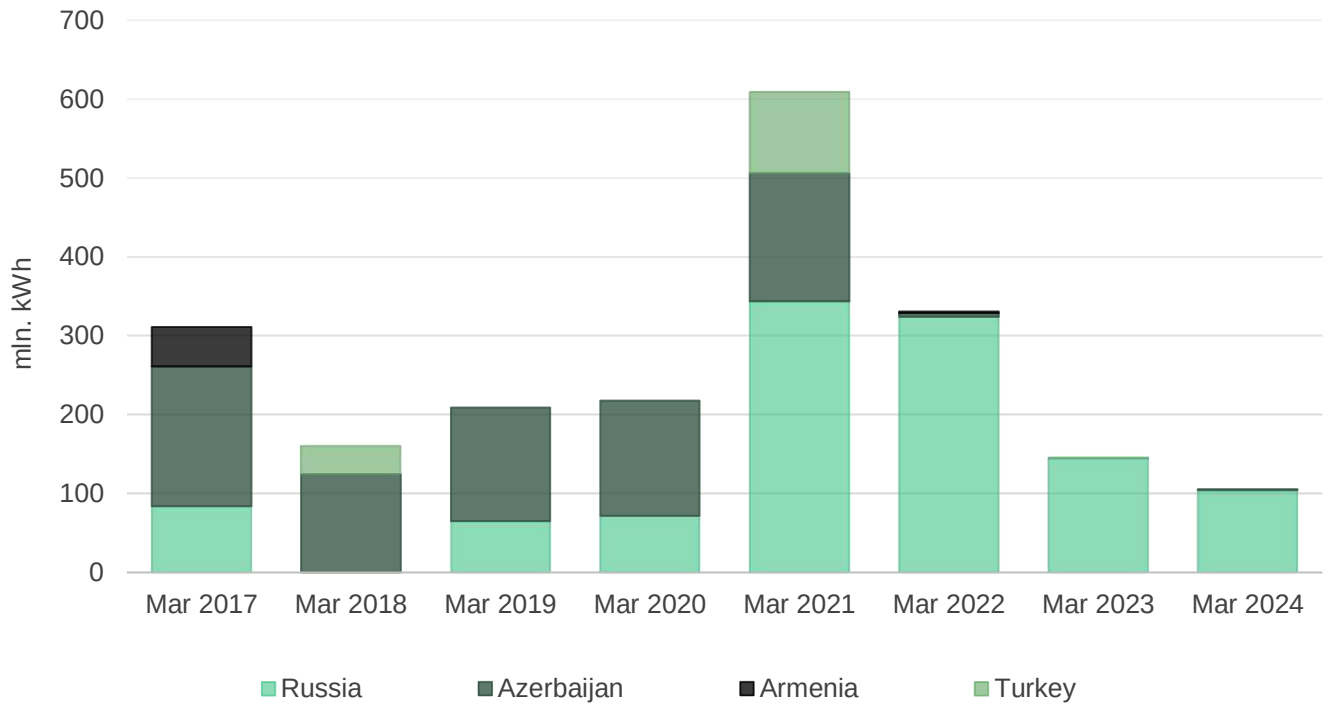


Source: ESCO

In March 2024, there was an import of 105.5 mln. kWh of electricity (in March 2023, there was import of 145.9 mln electricity) (Figure 9). 98.5% of this import came from Russia and 1.5% from Azerbaijan (in March 2023, 99.4% of import came from Russia and 0.6% from Turkey). In March 2024, there was an export of 6.3 mln. kWh of electricity to Armenia and 1.4 mln. kWh of electricity to Azerbaijan (in March 2023, there was no export) (Figure 10). There was 125.3 mln. kWh transit in March 2024 from Azerbaijan to Turkey (in March 2023, there was 381.4 mln. kWh transit from Azerbaijan to Turkey, and 63.4 mln. kWh transit from Armenia to Turkey).

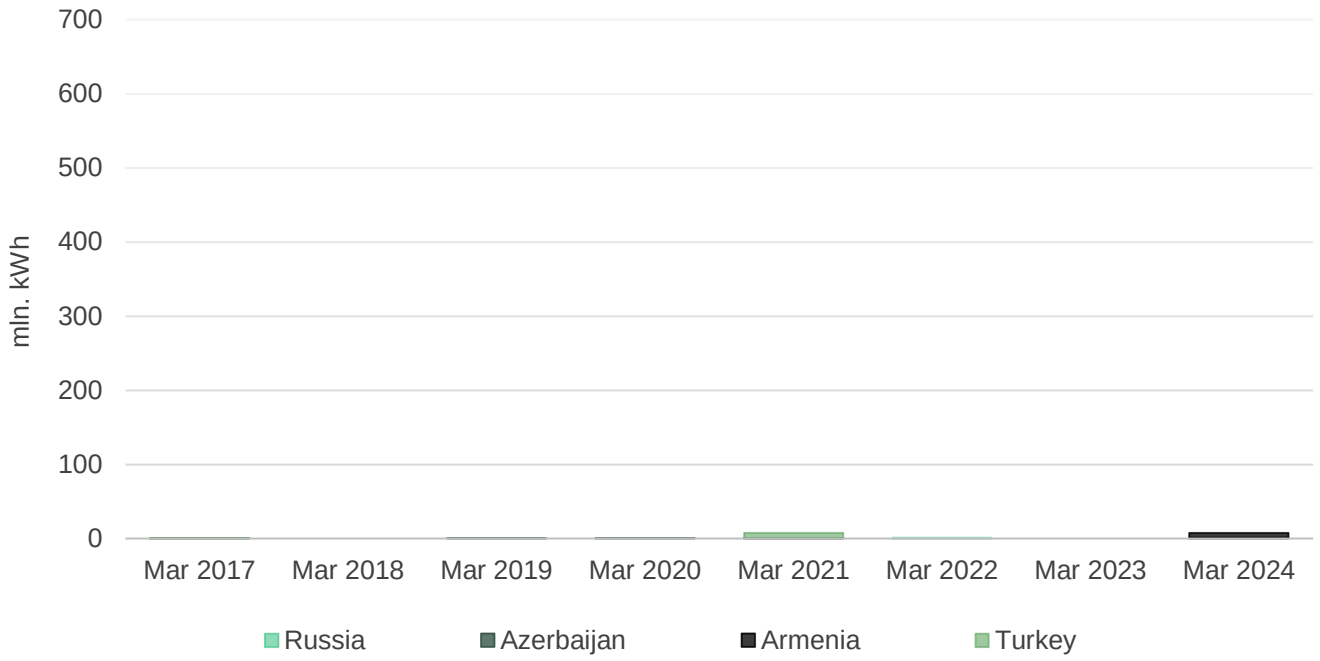
In March 2024, imports decreased by 28%, while exports increased by 8 times compared to March 2023.

Figure 9 - Imports by Year



Source: ESCO

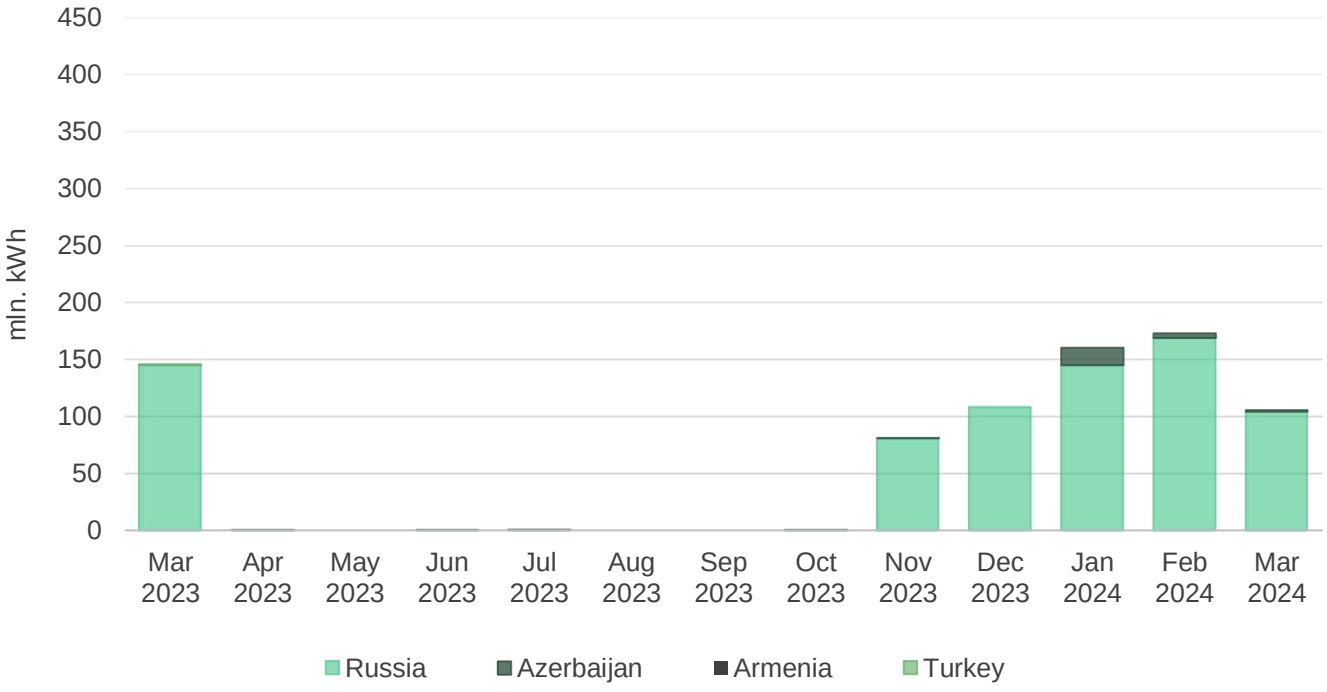
Figure 10 **- Exports by Year**



Source: ESCO

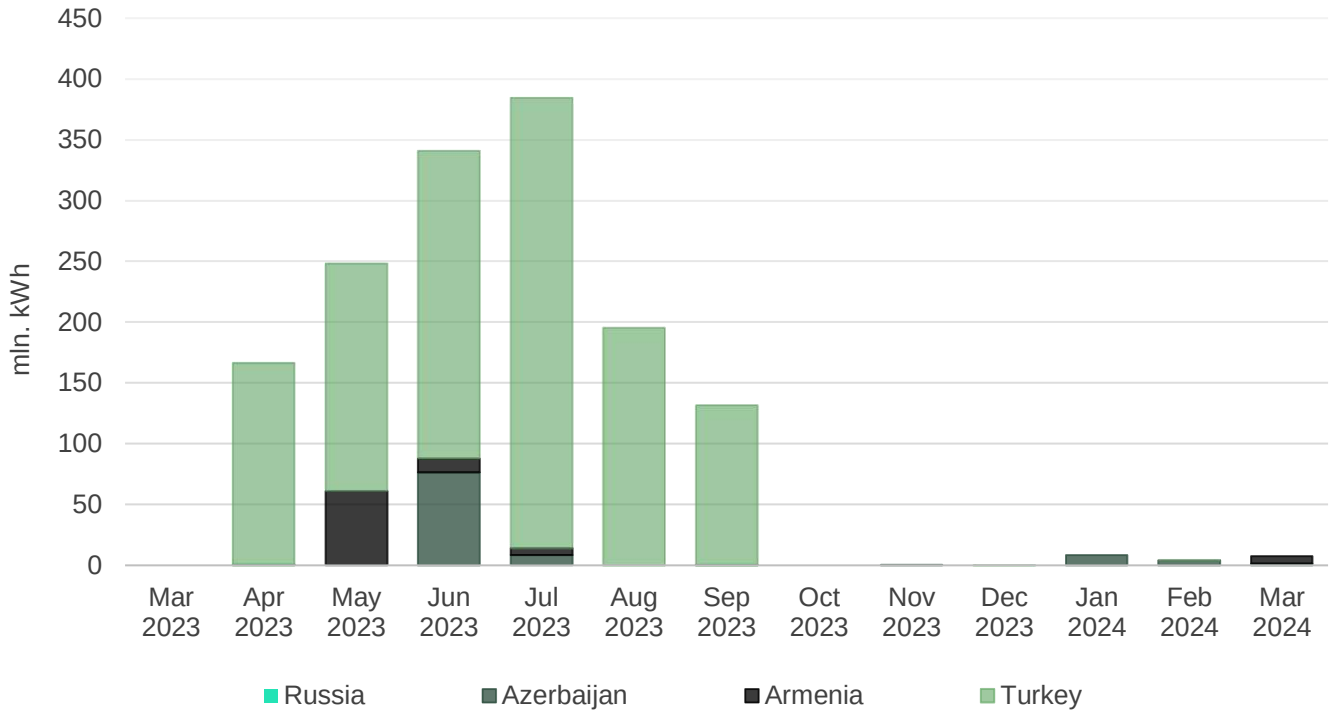
Electricity imports decreased by 38.9% in March 2024, compared to February 2024 (Figure 11). Electricity exports increased by 84.1% in March 2024, compared to February 2024 (Figure 12).

Figure 11 **- Imports by Month**



Source: ESCO

Figure 12 **- Exports by Month**

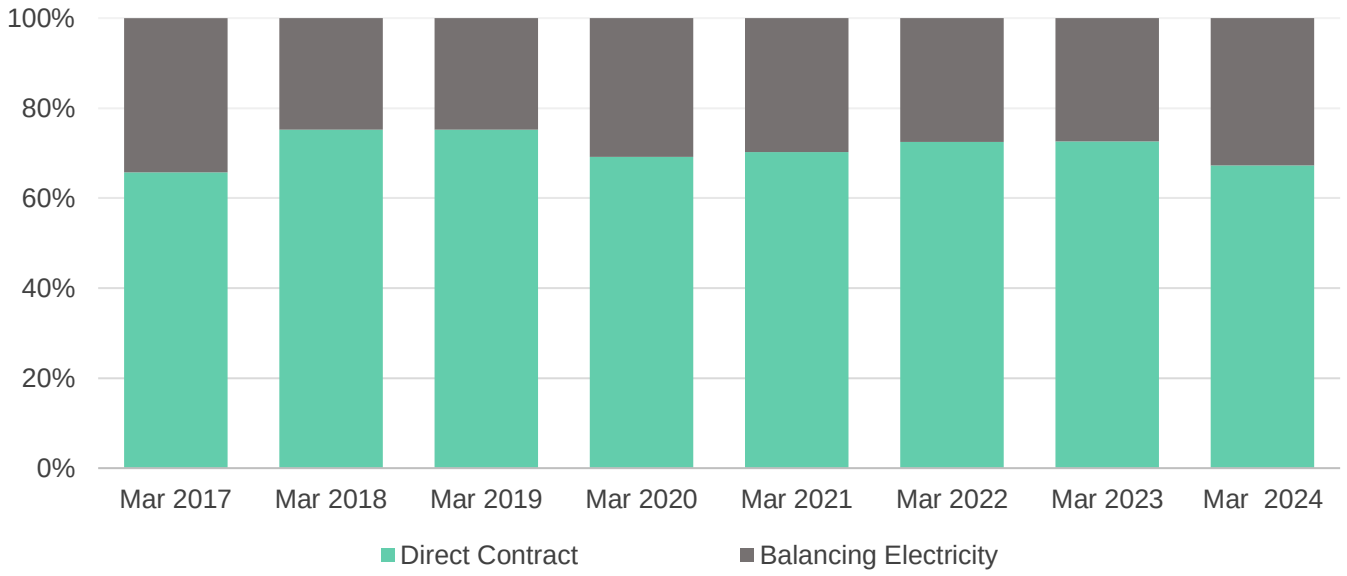


Source: ESCO

2. Market Operations

In March 2024, 67% of the electricity sold on/from the local market was sold through direct contracts. The remaining 33% was sold as balancing electricity (Figure 13).

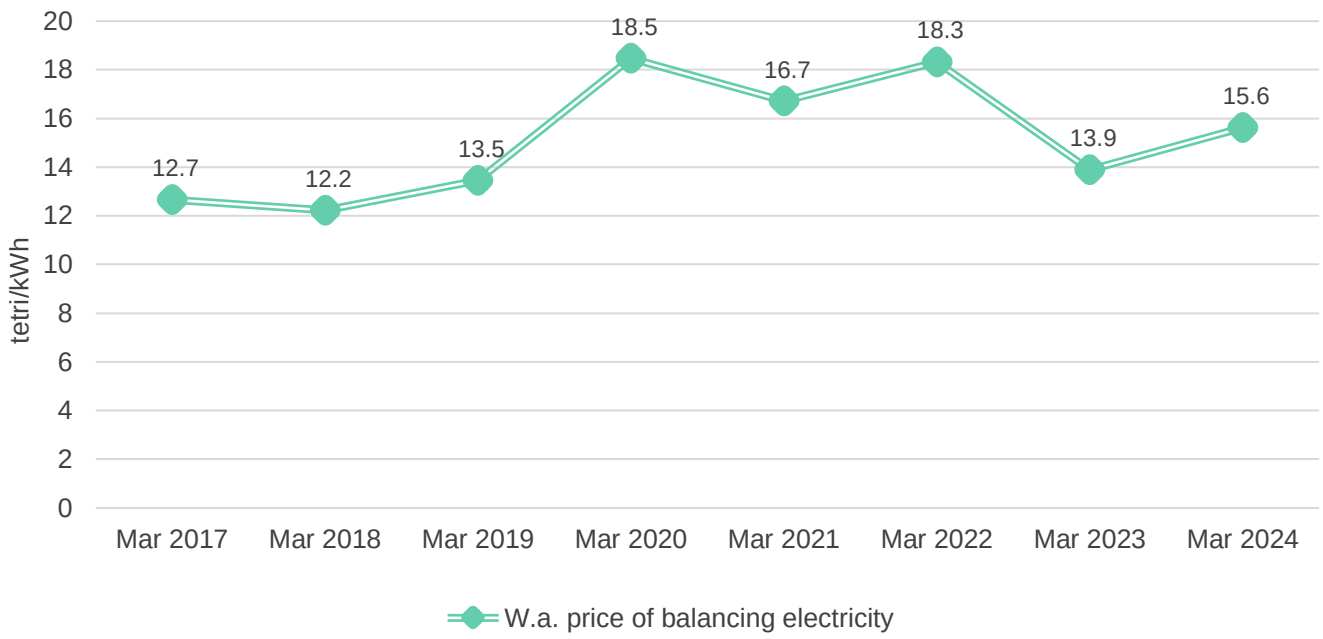
Figure 13 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

In March 2024, the weighted average price of balancing electricity was 15.6 tetri/kWh, which corresponds to an annual increase of 12.5% compared to March 2023 (Figure 14).

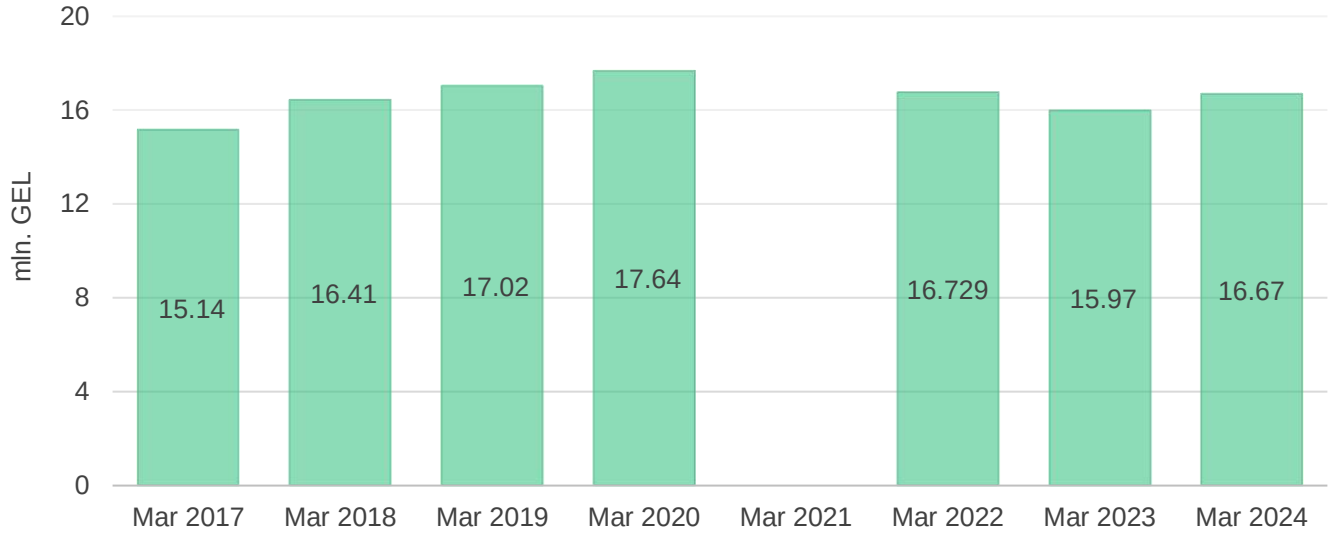
Figure 14 - Balancing Electricity Prices Weighted Average



Source: ESCO

Guaranteed capacity payments in March 2024 were roughly 16.67 mln. GEL, which represents a 4.4% increase compared to March 2023 (Figure 15).

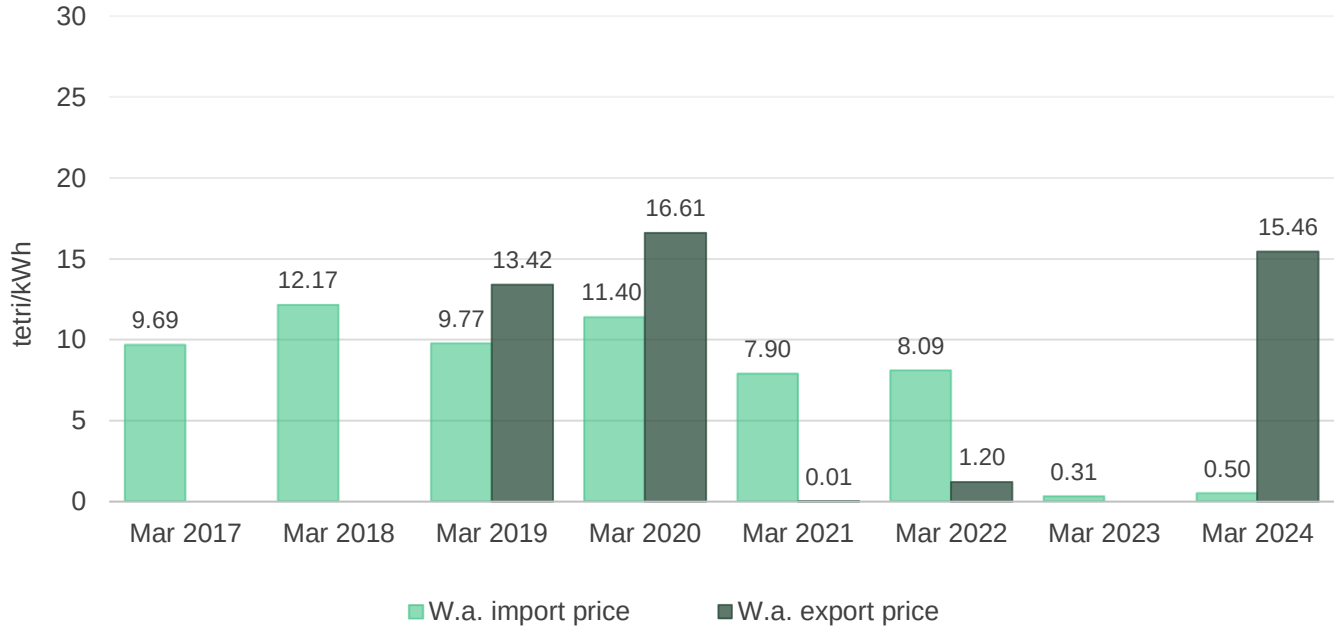
Figure 15 - Cost of Guaranteed Capacity



Source: ESCO

The electricity import prices in March 2024 were 0.19 ¢, or 0.50 tetri per kWh (Figure 16). This corresponds to an annual increase in price by 56% in USD and 62% in GEL (prices were 0.12 ¢, or 0.31 tetri per kWh in March 2023). In February 2024, electricity import prices were 0.27 ¢, or 0.70 tetri per kWh (Figure 16). This corresponds to a monthly decrease in prices by 29% in USD and in GEL. The electricity export prices in March 2024 were 5.76 ¢, or 15.46 tetri per kWh. There were no exports in March 2023 (Figure 16). In February 2024, electricity export prices were 6.50 ¢, or 17.26 tetri per kWh (Figure 16). This corresponds to a monthly decrease in prices by 11% in USD and 10% in GEL.

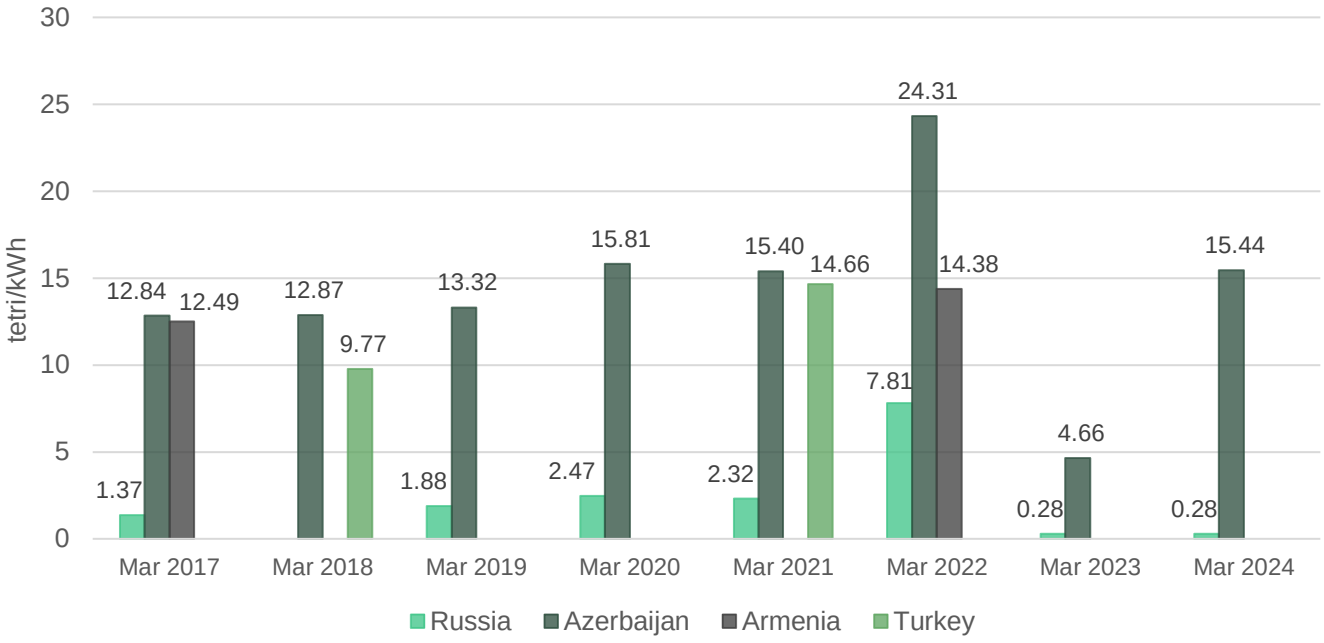
Figure 16 - Prices Import/Export



Source: ESCO

In March 2024, the electricity import price from Russia stood at 0.10 ¢ or 0.28 tetri, and from Azerbaijan at 5.76 ¢ or 15.44 tetri (Figure 17).

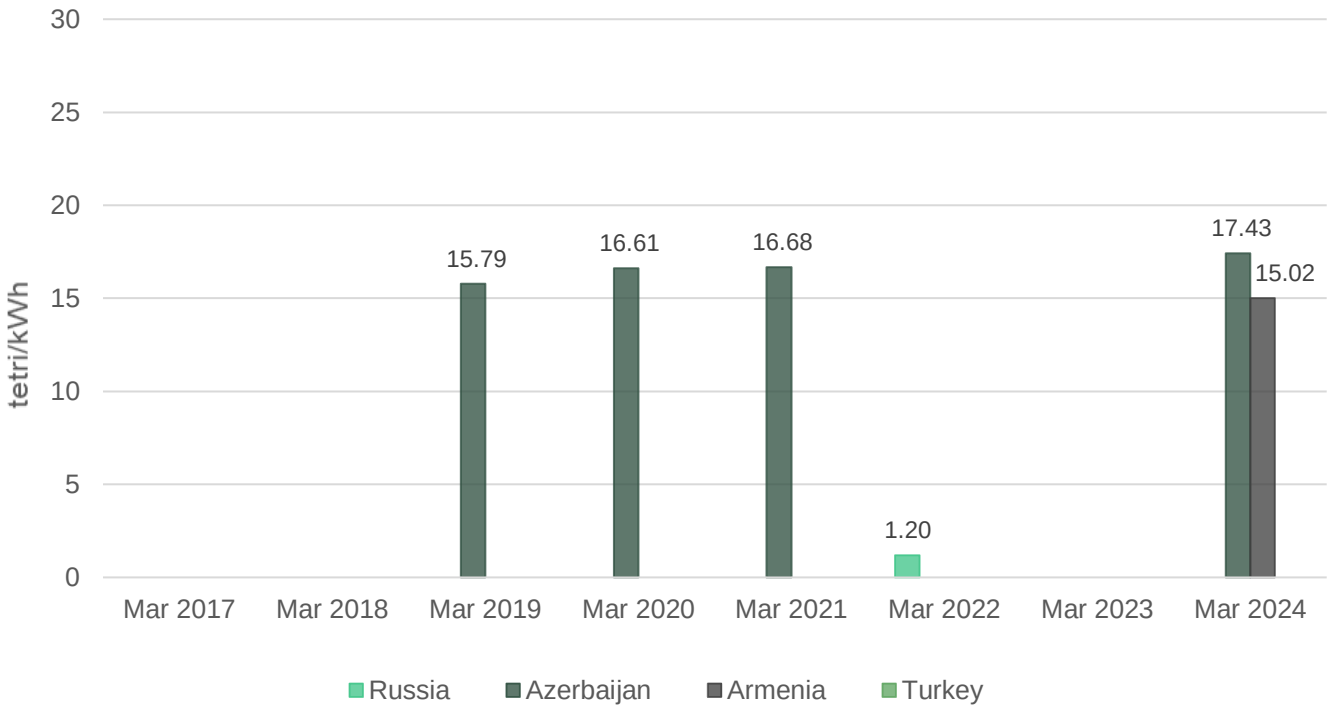
Figure 17 - Import Prices by Countries



Source: ESCO/Geostat

In March 2024, the electricity export price from Azerbaijan stood at 6.50 ¢ or 17.43 tetri, and from Armenia at 5.60 ¢ or 15.02 tetri (Figure 18).

Figure 18 - Export Prices by Countries

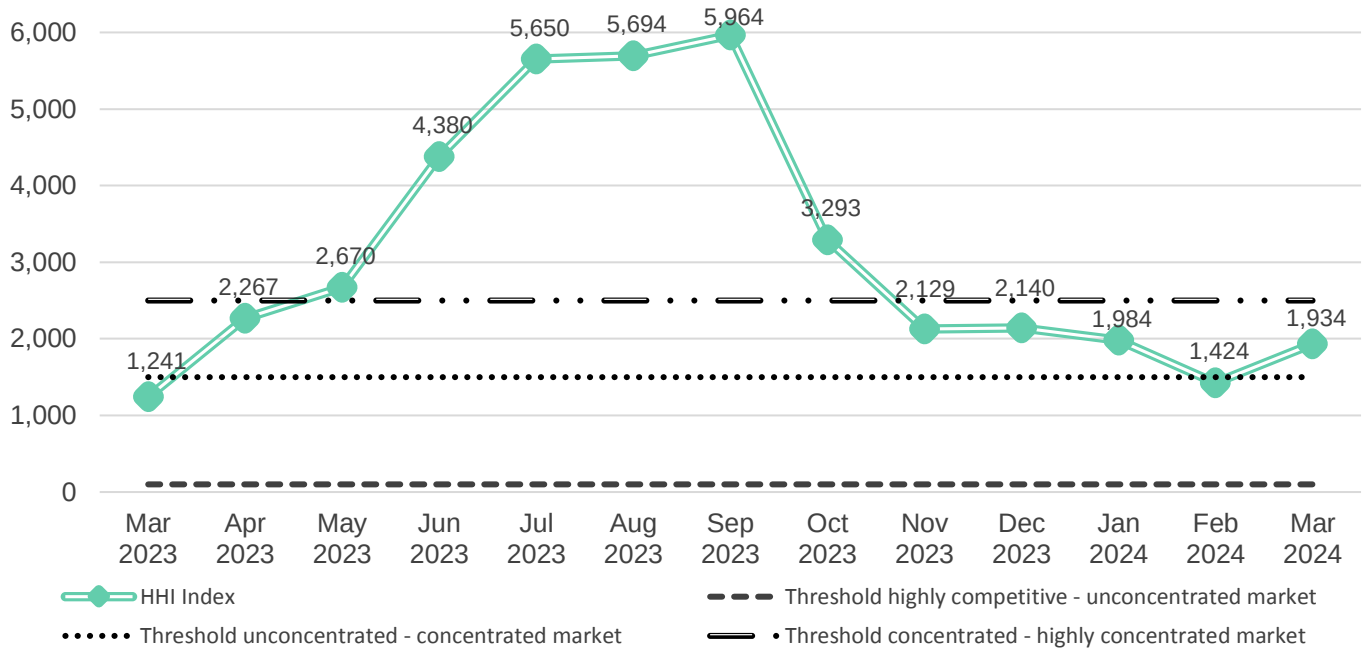


Source: ESCO/Geostat

3. Market Concentration

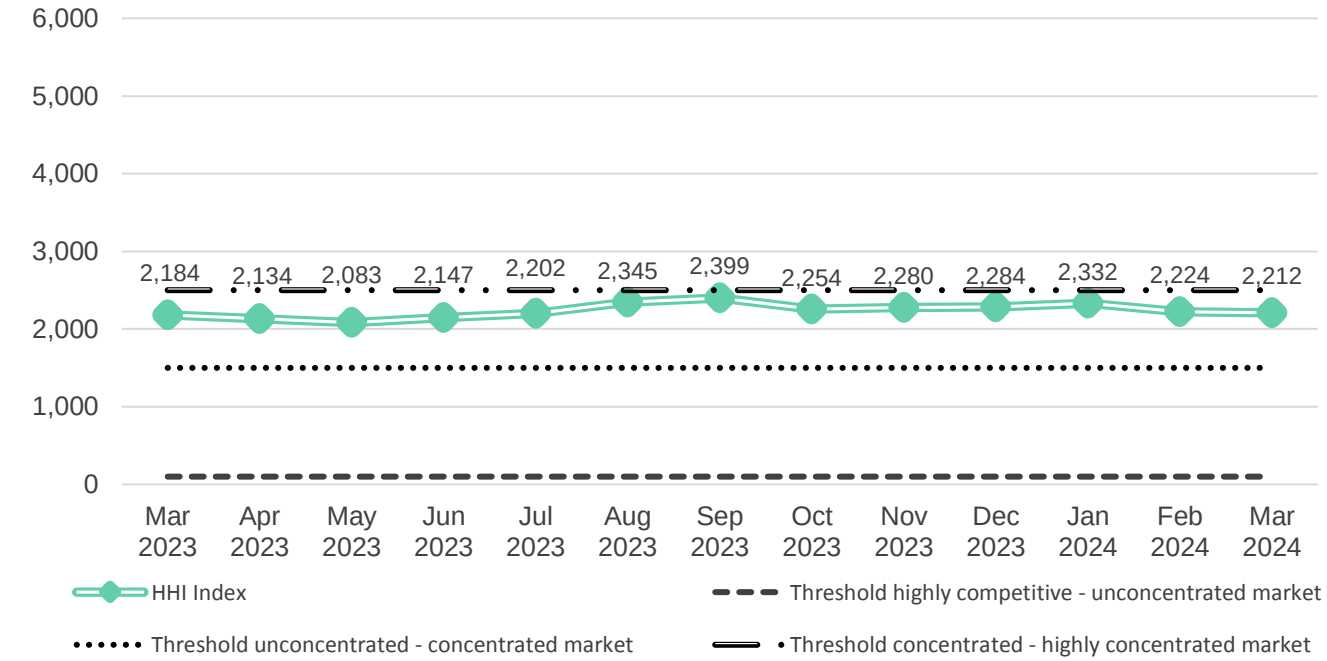
In conclusion, we utilize the Hirschman-Herfindahl (HHI) market concentration index to evaluate how competitive the generation and consumption segments of the market have been over the year. In March 2024, Georgian electricity generation market index was between the threshold of concentrated and highly concentrated markets with an HHI value of 1,934 (Figure 19). This is higher than the level in March 2023 (with an HHI value of 1,241), and higher than the level in February 2024 (the HHI was 1,424). As for the consumption segment, in March 2024, the HHI consumption index remained below the threshold for a highly concentrated market, with an HHI value of 2,212 (higher the level in March 2023 – 2,184 and below the level in February 2024 – 2,224). 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