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International School of Economics at TSU
Policy Institute

APRIL
2024

ELECTRICITY MARKET REVIEW

ISET POLICY INSTITUTE
AGRICULTURE & RURAL POLICY RESEARCH CENTER

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INFORMATION

- In April 2024 there was a decrease in the total electricity generation by 13% on a yearly and by 4% on a monthly basis.
- Consumption increased by 4% on a yearly basis and decreased by 16% compared to the previous month.
- Generation exceeded consumption by 212 mln. kWh which was 17% of the total generation and 20% of the total consumption in April 2024.
- There were imports of 6.6 mln. kWh in April 2024.
- There were exports of 58 mln. kWh in April 2024.
- The main import partner country was Azerbaijan.
- The main export partner country was Turkey.
- The price of imports reached 6.50 ¢, or 17.40 tetri per kWh.
- The price of exports reached 4.72 ¢, or 12.65 tetri per kWh.
- The HHI index for the Georgian electricity generation market was between the threshold of concentrated and competitive market. In April 2024, its level was 1,345.
- The HHI for the Georgian electricity consumption market remained below the threshold of a highly concentrated market. In April 2024, its level was 2,092.

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

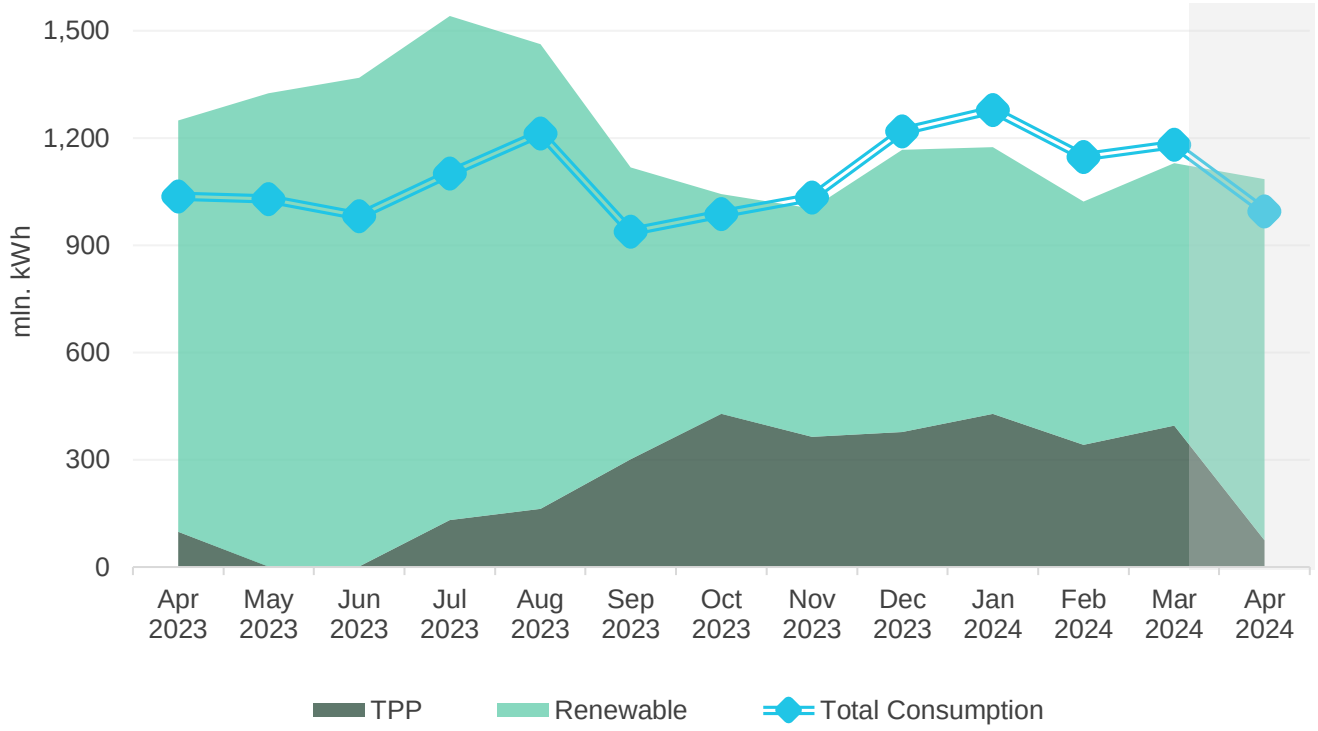
1. Generation – Consumption – Trade

In April 2024, Georgian power plants generated 1,085 mln. kWh of electricity (Figure 1). This represents a 13% decrease in the total generation compared to the previous year (in April 2023, the total generation was 1,249 mln. kWh). The fall in generation on a yearly basis comes from a decrease in generation of hydro, thermal and wind power plants by 12%, 25% and 10%, respectively.

On a monthly basis, the generation decreased by 4% (in March 2024, the total generation was 1,130 mln. kWh) (Figure 1). The monthly fall in total generation is induced by the decrease of thermal, hydro and wind power generation by 81%, 4% and 4%, respectively.

The consumption of electricity on the local market was 995 mln. kWh (+4% compared to April 2023, and -16% compared to March 2024) (Figure 1). In April 2024, power generation exceeded consumption by 91 mln. kWh which was 8% of the total generation and 9% of the total consumption (in April 2023, the difference between the total generation and the consumption resulted in a surplus of 212 mln. kWh, around 17% of the total generation and 20% of the total consumption for the month).

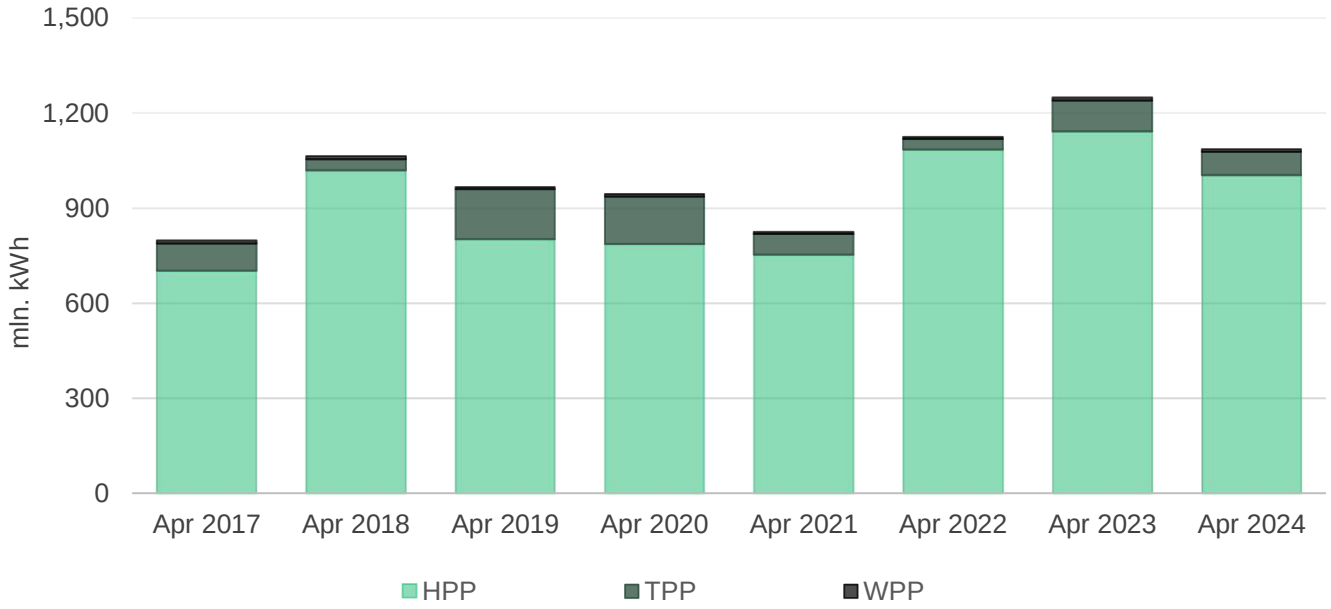
Figure 1 **- Electricity Consumption and Generation**



Source: Electricity System Commercial Operator (ESCO)

In April 2024, hydro power plants were the leading source of generation. In April 2024, hydro power (HPP) generation amounted to 1,004 mln. kWh (92.4% of total), thermal power (TPP) generation was 74 mln. kWh (6.8% of the total generation), while wind power (WPP) generation amounted to 8 mln. kWh (0.7% of the total generation) (Figure 2).

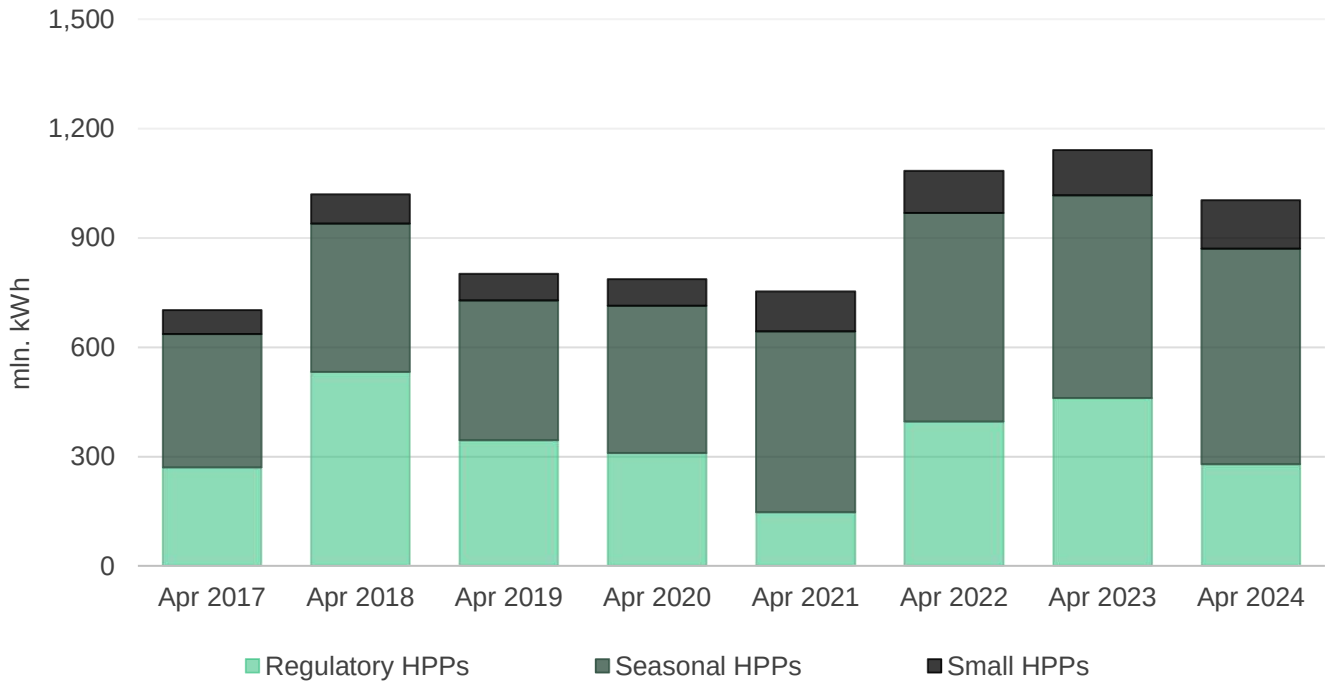
Figure 2 **- Electricity Generation by Sources**



Source: ESCO

Among hydropower generators, large (regulatory) HPPs produced 25.6% (278 mln. kWh) of electricity, while seasonal and small HPPs produced 54.5% (592 mln. kWh) and 12.3% (133 mln. kWh), respectively (Figure 3).

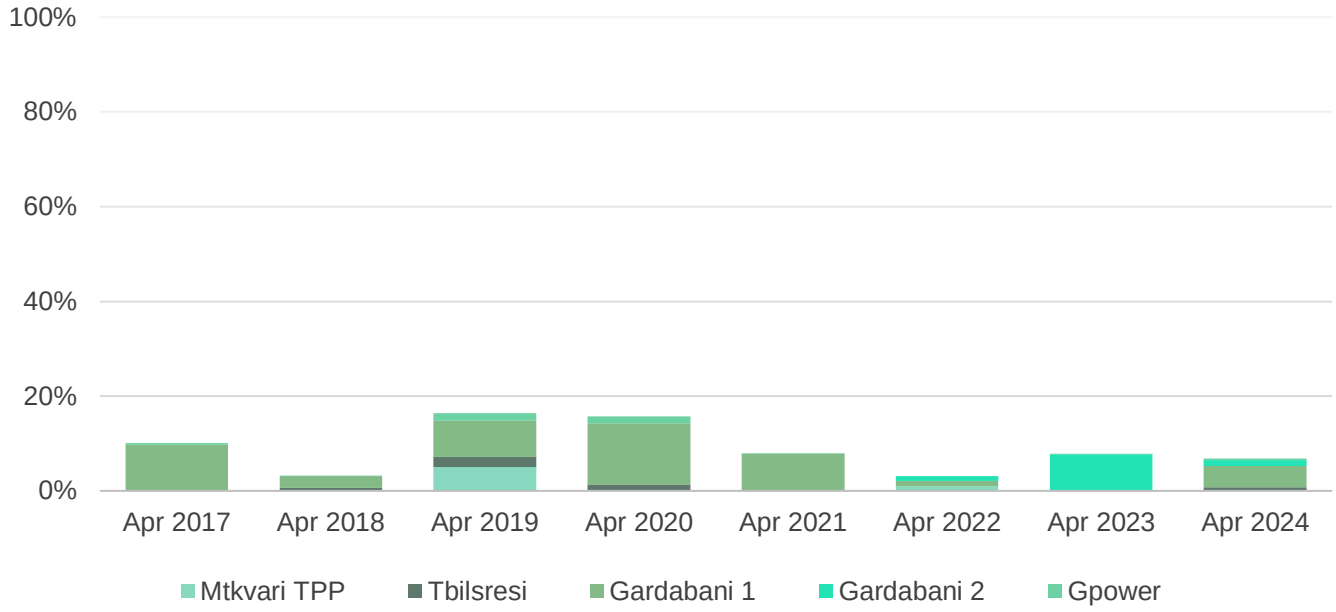
Figure 3 **- HPP Generation by Type**



Source: ESCO

As for thermal power generation, Gardabani 1 generated 49 mln. kWh (65.9% of TPP generation and 4.5% of total power generation), Gardabani 2 generated 13 mln. kWh (18.2% of TPP generation and 1.2% of total power generation), Tbilsresi generated 8 mln. kWh (11.2% of TPP generation and 0.8% of total power generation) and Gpower generated 4 mln. kWh (4.7% of TPP generation and 0.3% of total power generation) (Figure 4).

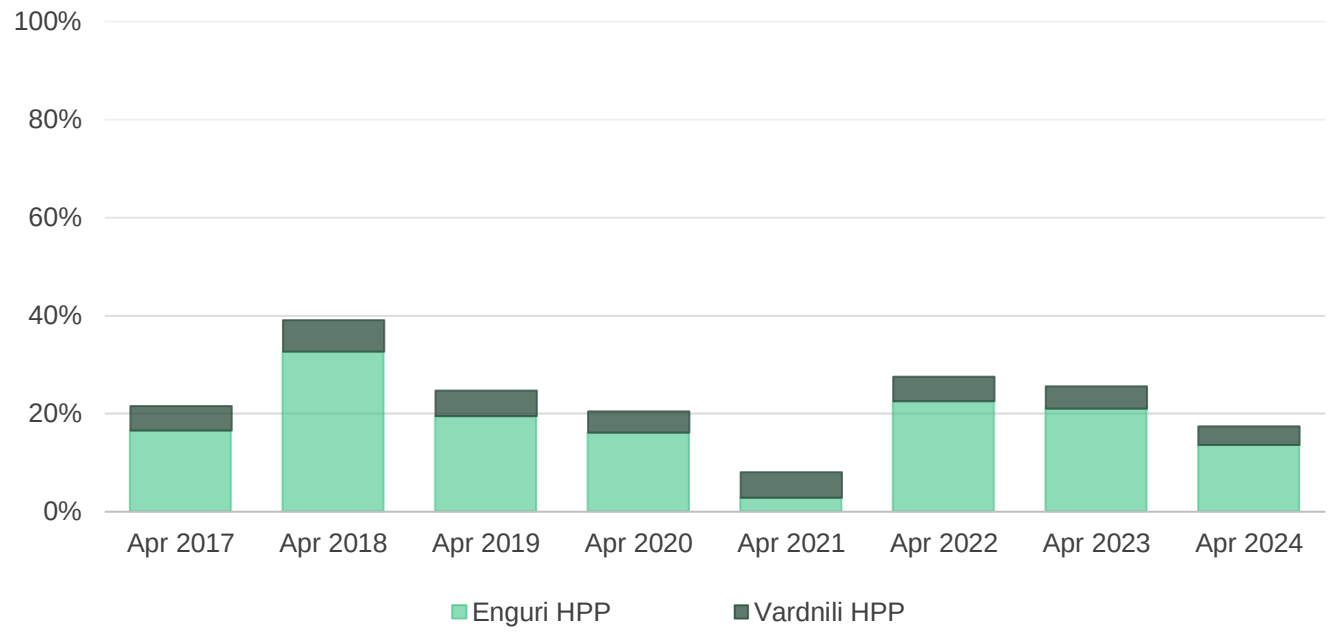
Figure 4 **- Share of Large TPPs in Total Generation**



Source: ESCO

As for HPP generation, Vardnili HPP generated 42 mln. kWh (13.6% of generation for regulatory HPPs and 3.9% of total generation). Enguri HPP generated 148 mln. kWh, which represents 53% of the generation of regulatory HPPs and 15% of total generation (Figure 5).

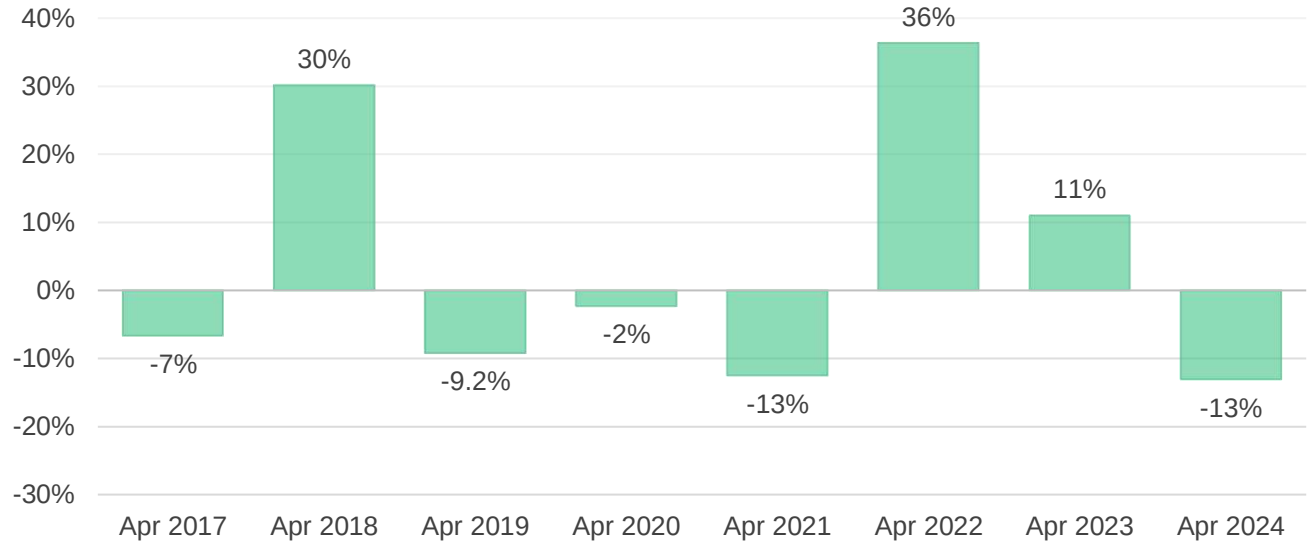
Figure 5 **- Share of Enguri and Vardnili in Total Generation**



Source: ESCO

Overall, the total generation decreased by 13% compared to April 2023 (Figure 6).

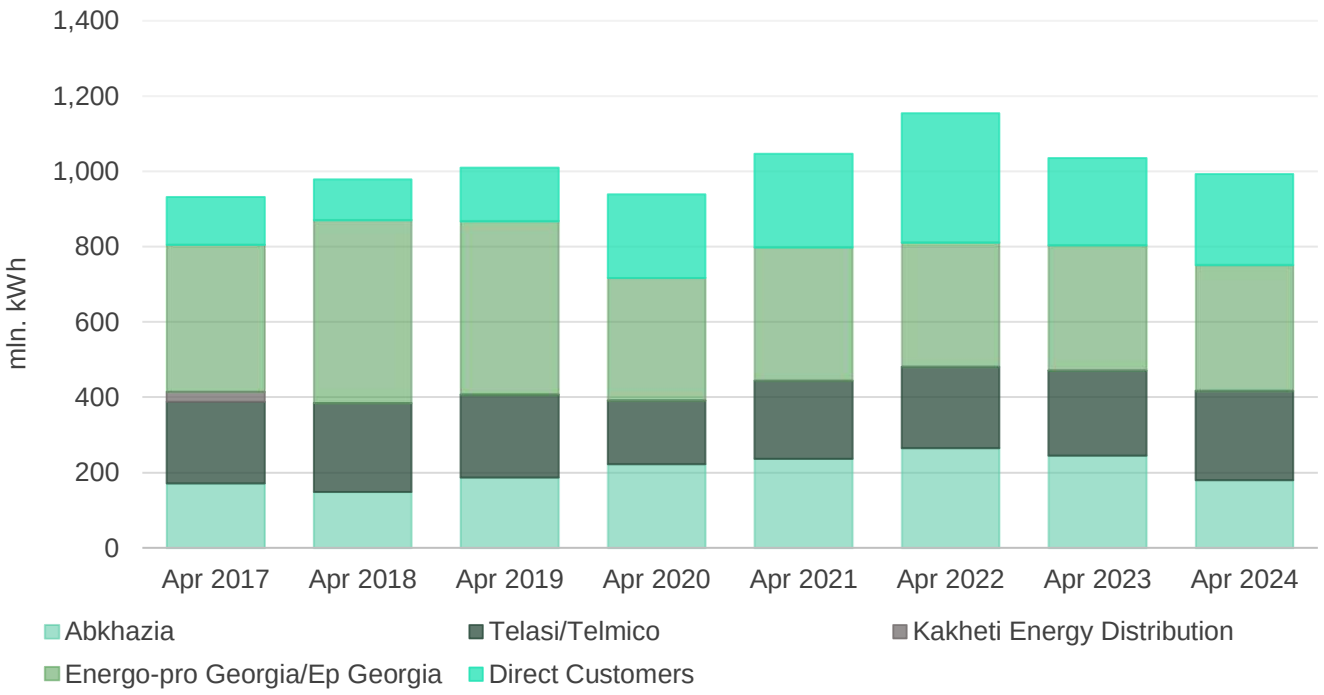
Figure 6 - Growth of Generation (%, y/y)



Source: ESCO

Total electricity demand came from: Energo-Pro Georgia/Ep Georgia[1] (33.5% - 334 mln. kWh), Abkhazia (18% - 179 mln. kWh), Telasi/Telmico[2] (23.9% - 238 mln. kWh), and direct customers (24.4% - 243 mln. kWh) (Figure 7). Annual demand from Telasi/Telmico, Energo-Pro Georgia/Ep Georgia and direct customers increased by 4.8%, 0.8%, and 3.9%, respectively, while it decreased from Abkhazia by 26.7%. Overall, there was an annual decrease of 3.9% in the total electricity consumption in April 2024, compared to April 2023 (Figure 8).

Figure 7 - Electricity Consumption by Type of Consumer

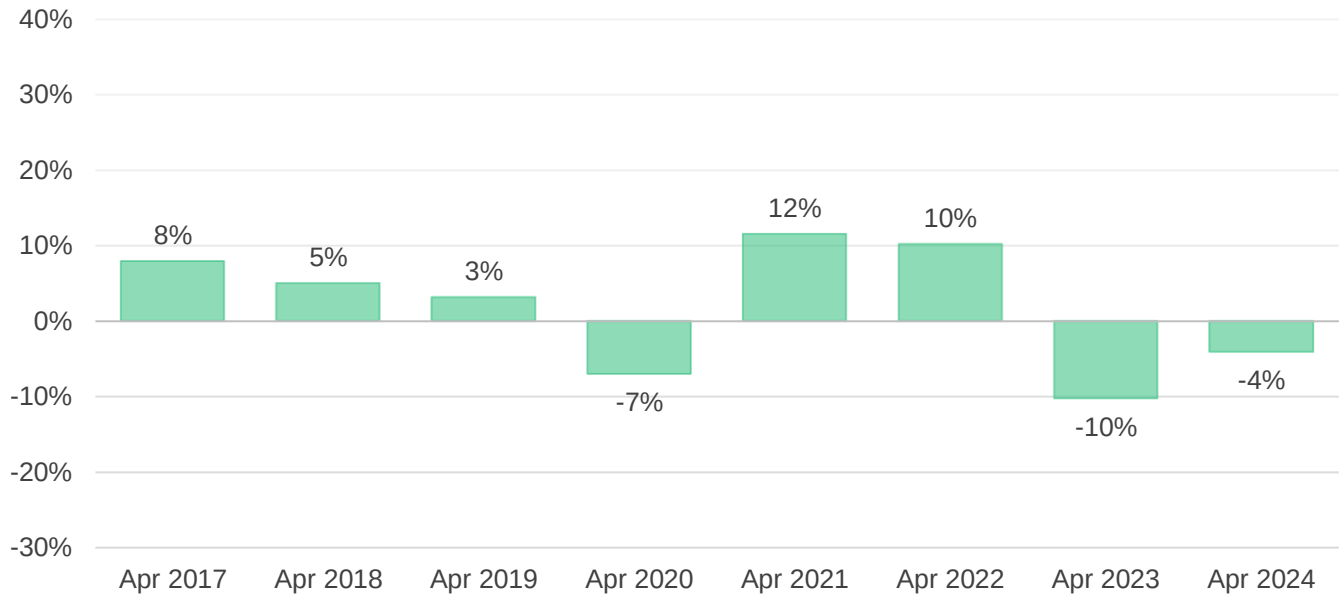


Source: ESCO

[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)**

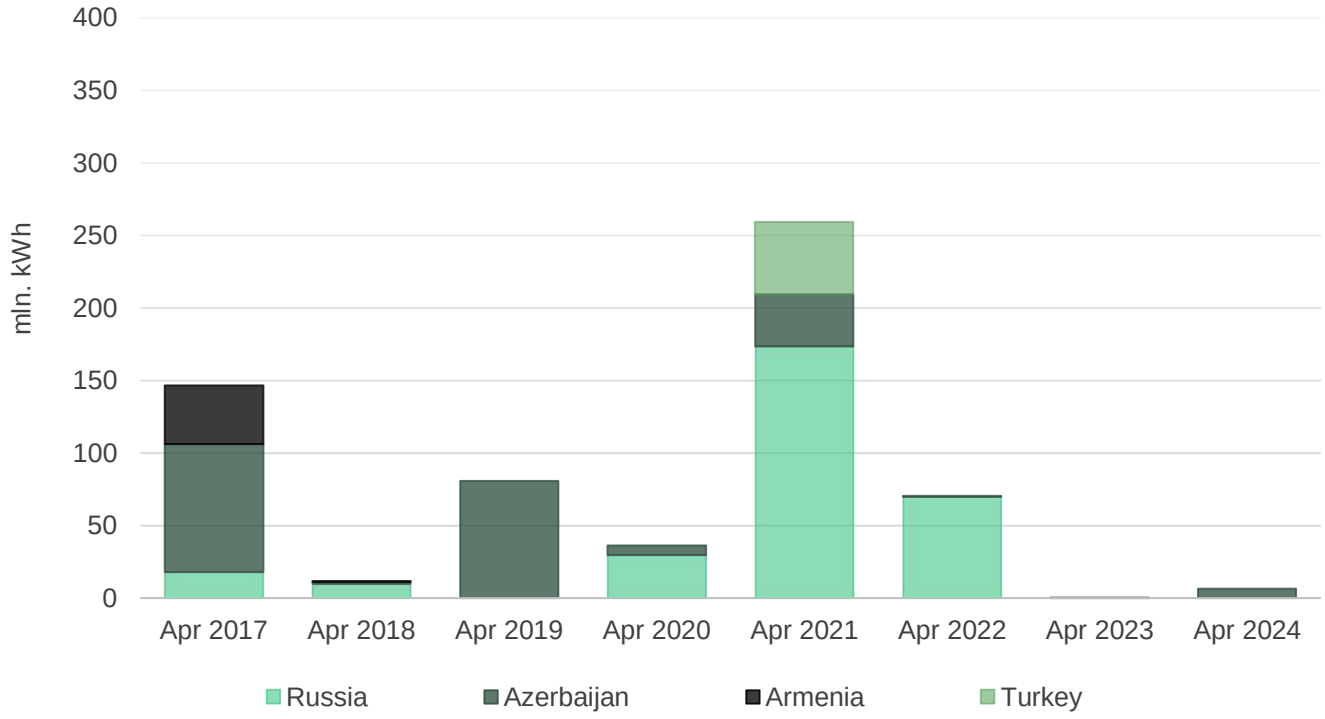


Source: ESCO

In April 2024, there was an import of 6.6 mln. kWh of electricity (in April 2023, there was import of 0.07 mln electricity) (Figure 9). All of this import came from Azerbaijan (in April 2023, 100% of import came from Azerbaijan as well). In April 2024, there was an export of 51.5 mln. kWh of electricity to Turkey and 6.5 mln. kWh of electricity to Azerbaijan (in April 2023, there was an export of 166.2 mln. kWh of electricity to Turkey, 0.1 mln. kWh of electricity to Russia, and 0.05 mln. kWh of electricity to Azerbaijan) (Figure 10). There was 29.4 mln. kWh transit in April 2024 from Azerbaijan to Turkey (in April 2023, there was 97.8 mln. kWh transit from Russia to Turkey).

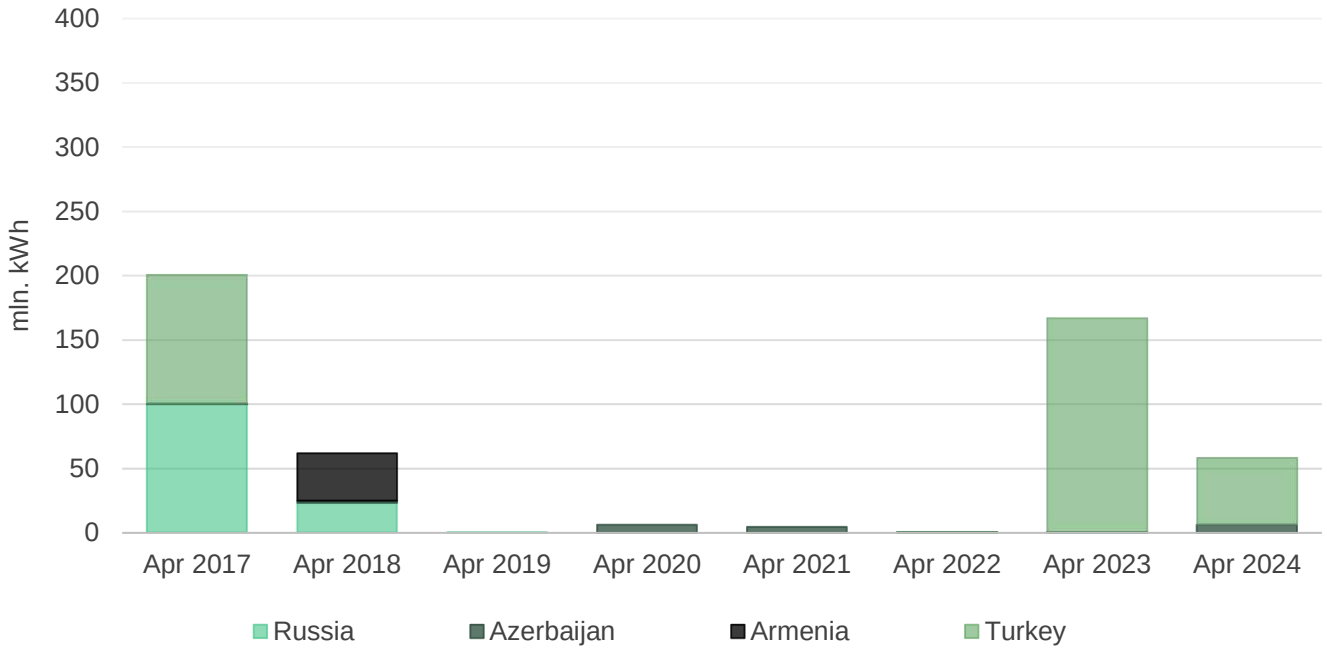
In April 2024, imports increased by 99.8%, while exports decreased by 65% compared to April 2023.

Figure 9 **- Imports by Year**



Source: ESCO

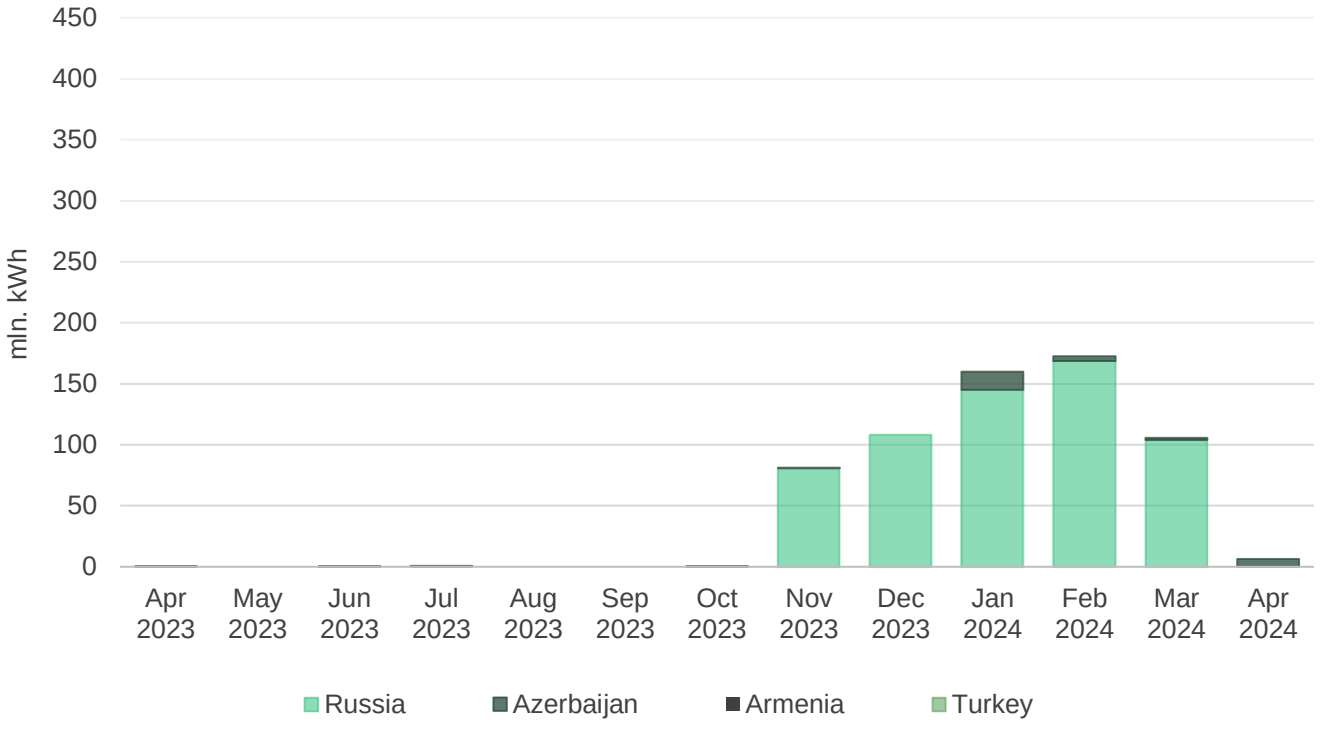
Figure 10 **- Exports by Year**



Source: ESCO

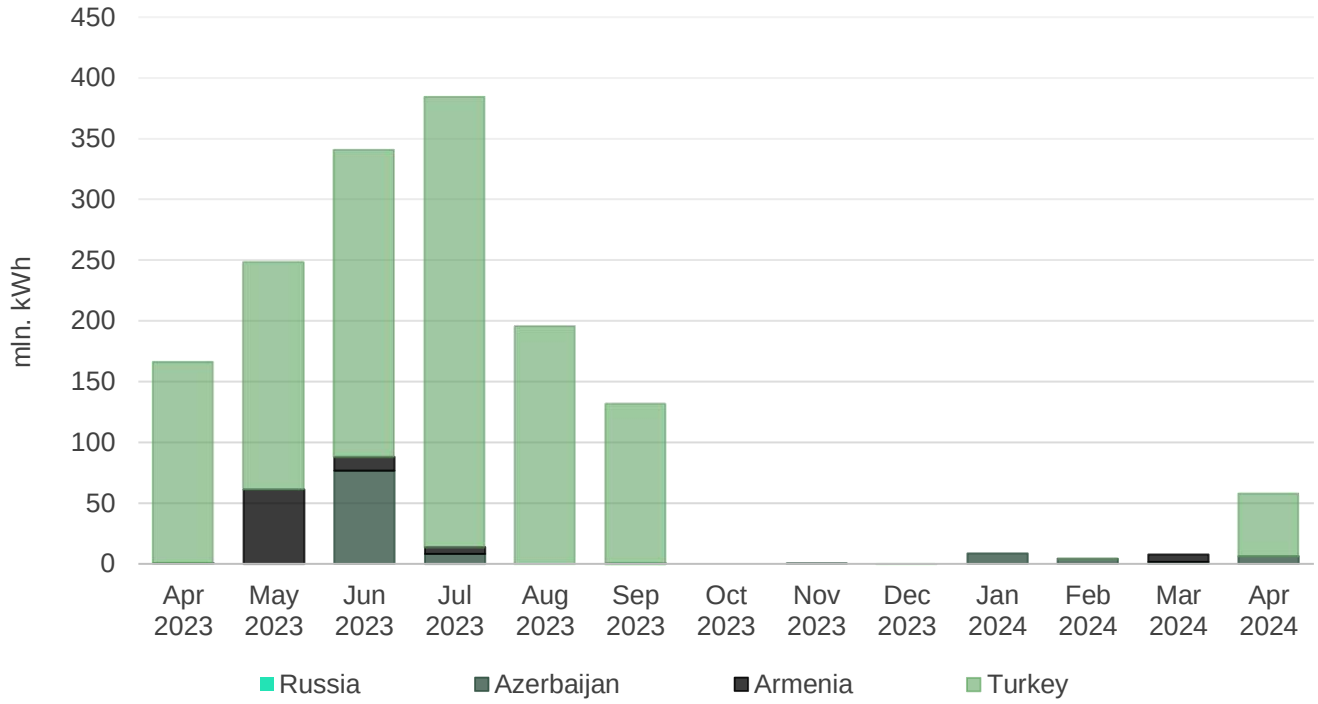
Electricity imports decreased by 93.8% in April 2024, compared to March 2024 (Figure 11). Electricity exports increased 7 times in April 2024, compared to March 2024 (Figure 12).

Figure 11 **- Imports by Month**



Source: ESCO

Figure 12 **- Exports by Month**

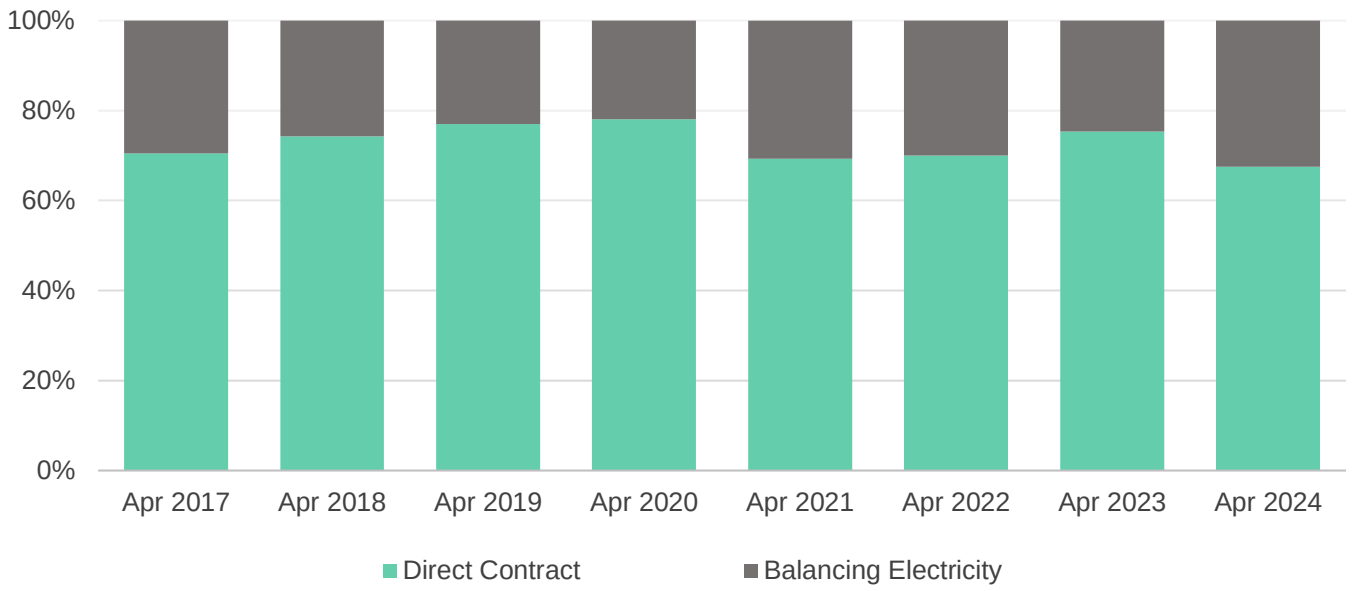


Source: ESCO

2. Market Operations

In April 2024, 68% of the electricity sold on/from the local market was sold through direct contracts. The remaining 32% was sold as balancing electricity (Figure 13).

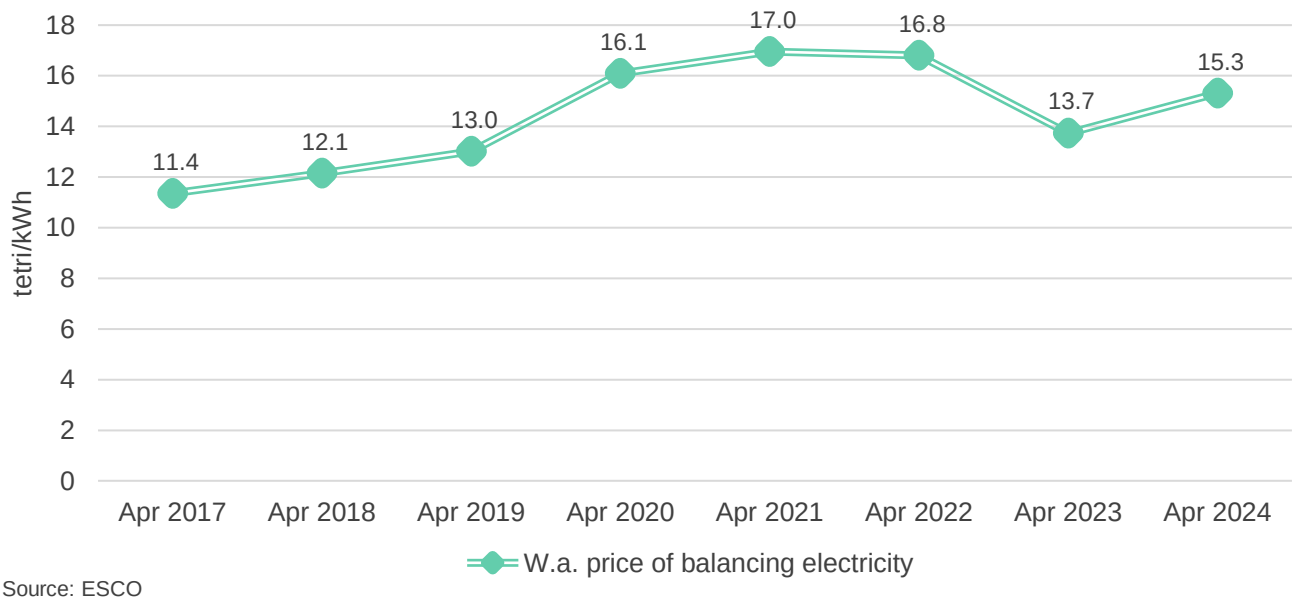
Figure 13 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

In April 2024, the weighted average price of balancing electricity was 15.3 tetri/kWh, which corresponds to an annual increase of 11.4% compared to April 2023 (Figure 14).

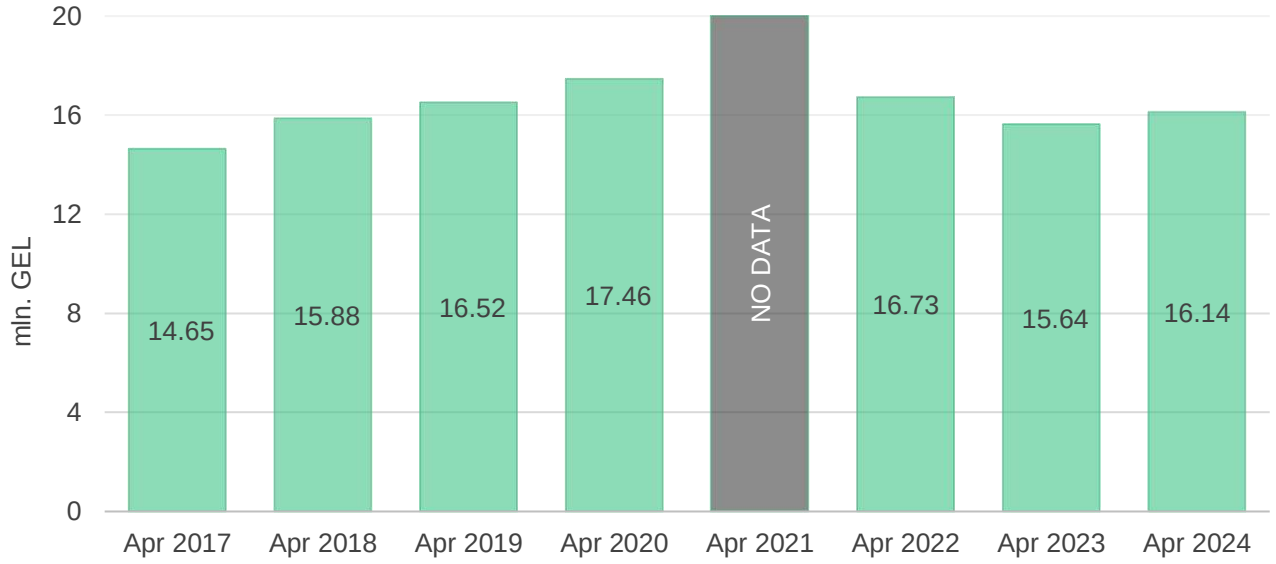
Figure 14 - Balancing Electricity Prices Weighted Average



Source: ESCO

Guaranteed capacity payments in April 2024 were roughly 16.14 mln. GEL, which represents a 3.2% increase compared to April 2023 (Figure 15).

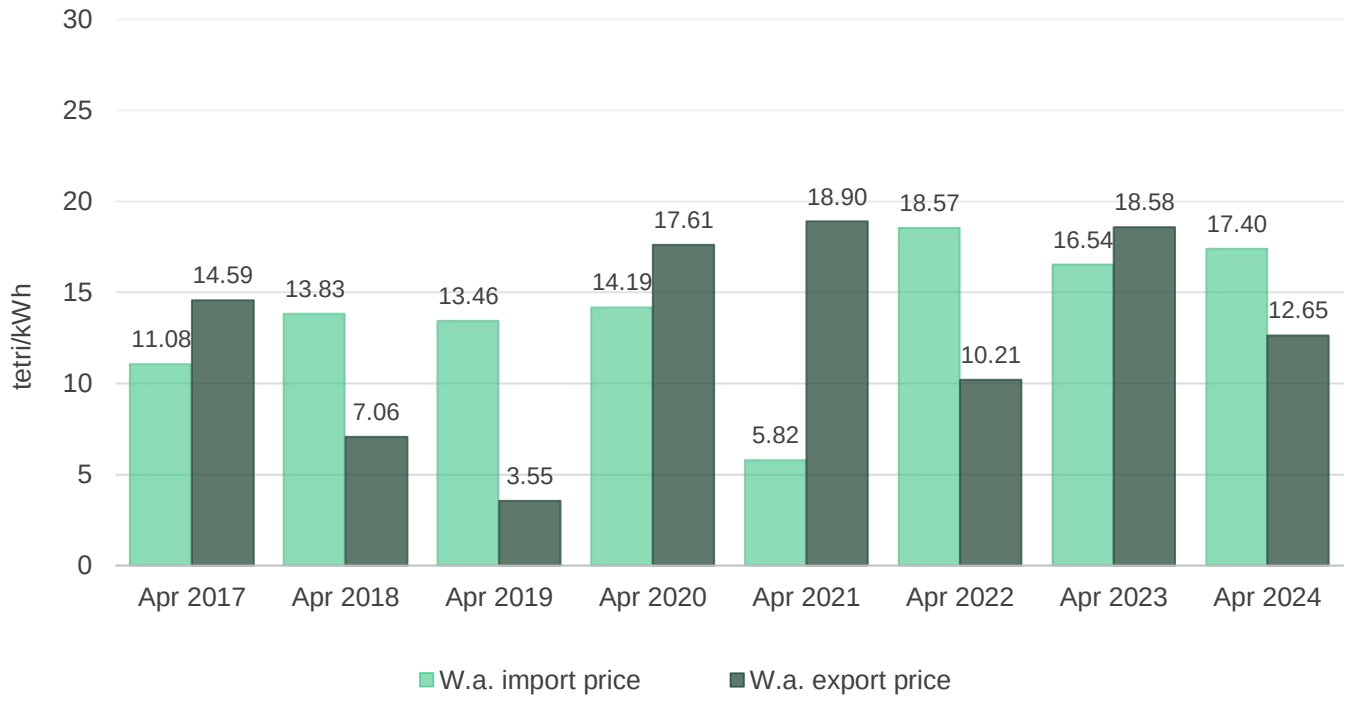
Figure 15 - Cost of Guaranteed Capacity



Source: ESCO

The electricity import prices in April 2024 were 6.50 ¢, or 17.40 tetri per kWh (Figure 16). This corresponds to an annual decrease in price by 0.8% in USD and increase by 5.2% in GEL (prices were 6.55 ¢, or 16.54 tetri per kWh in April 2023). In March 2024, electricity import prices were 0.19 ¢, or 0.50 tetri per kWh (Figure 16). This corresponds to a monthly increase in prices 34 times in USD and in GEL. The electricity export prices in April 2024 were 4.72 ¢, or 12.65 tetri per kWh. (Figure 16). This corresponds to an annual decrease in price by 35.8% in USD and by 31.9% in GEL (prices were 7.36 ¢, or 18.58 tetri per kWh in April 2023). In March 2024, electricity export prices were 5.76 ¢, or 15.46 tetri per kWh (Figure 16). This corresponds to a monthly decrease in prices by 18% in USD and in GEL.

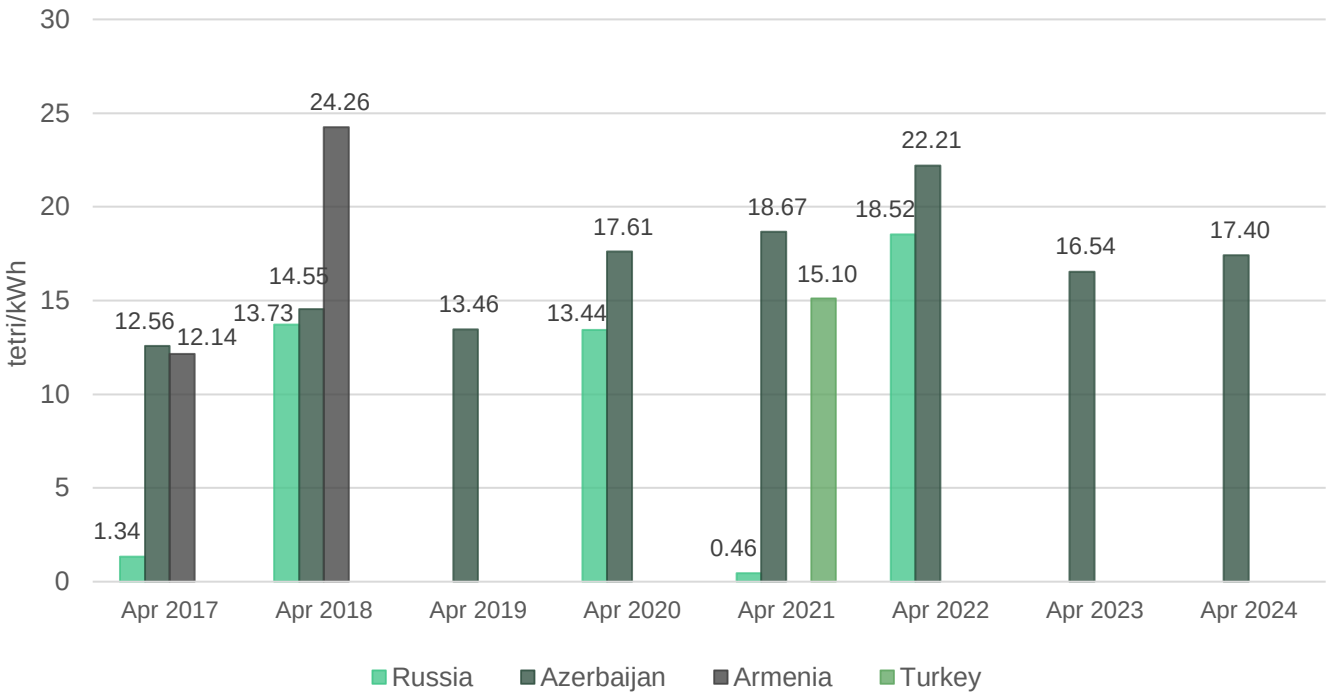
Figure 16 - Prices Import/Export



Source: ESCO

In April 2024, the electricity import price from Azerbaijan stood at 6.50 ¢ or 17.40 tetri (Figure 17).

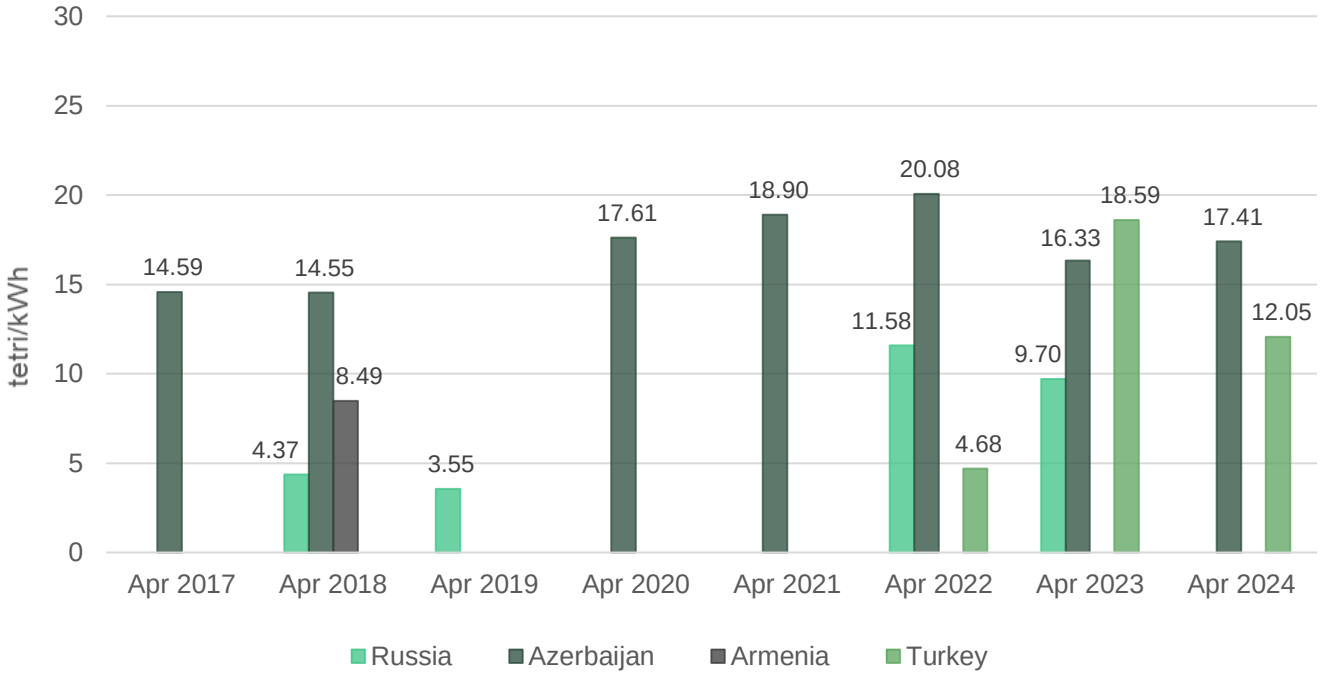
Figure 17 - Import Prices by Countries



Source: ESCO/Geostat

In April 2024, the electricity export price from Azerbaijan stood at 6.50 ¢ or 17.41 tetri, and from Turkey at 4.50 ¢ or 12.05 tetri (Figure 18).

Figure 18 - Export Prices by Countries

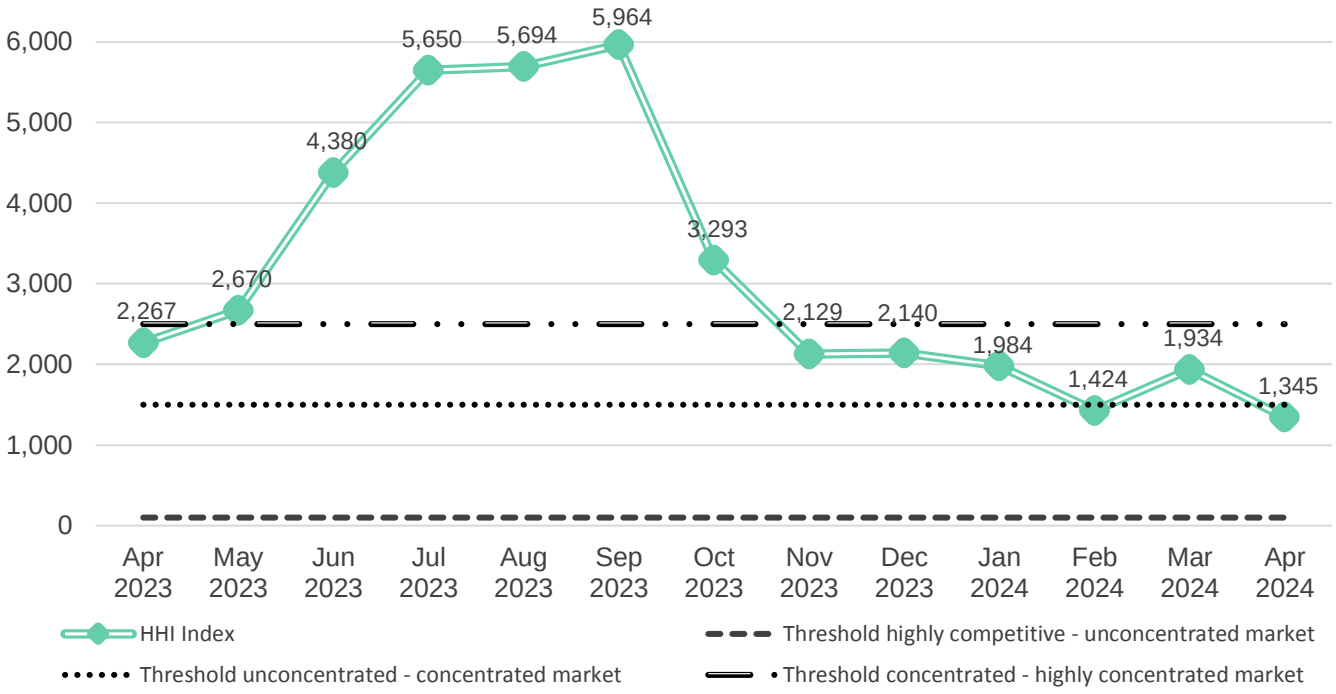


Source: ESCO/Geostat

3. Market Concentration

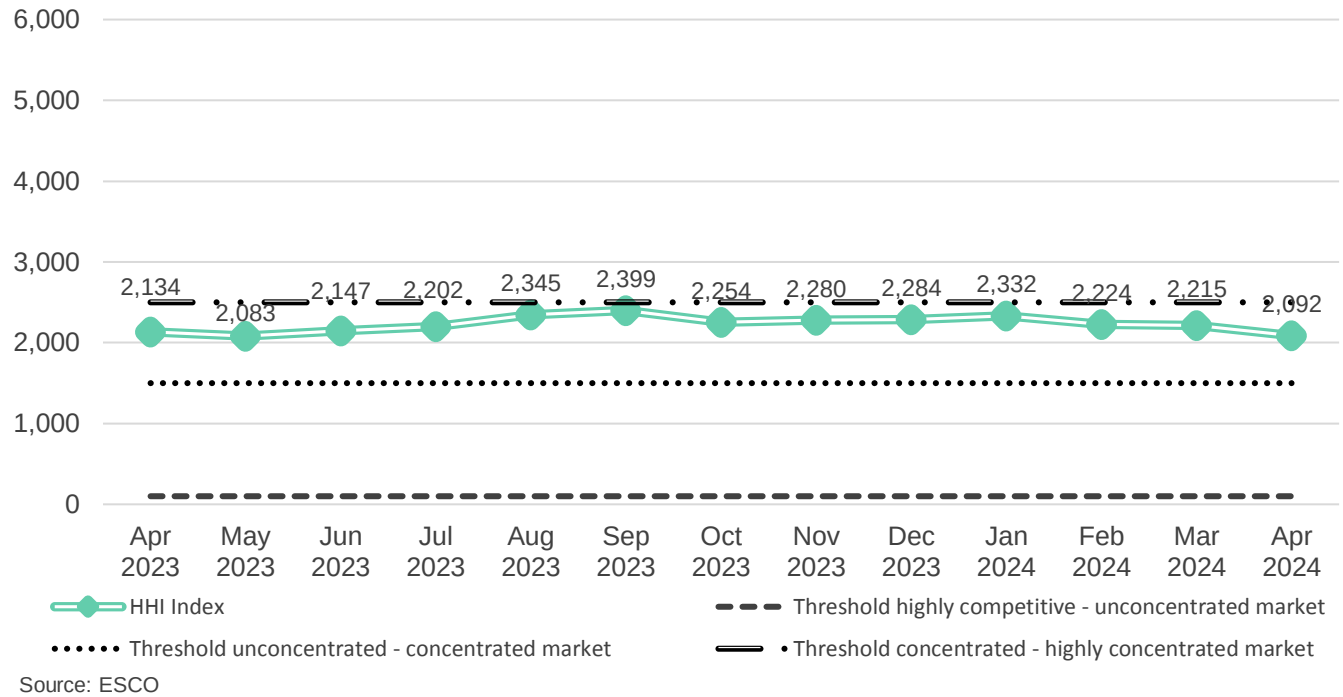
In conclusion, we utilize the Hirschman-Herfindahl (HHI) market concentration index to evaluate how competitive the generation and consumption segments of the market have been over the year. In April 2024, Georgian electricity generation market index fell below the threshold of concentrated market with an HHI value of 1,345 (Figure 19). This is lower than the level in April 2023 (with an HHI value of 2,267), and lower than the level in March 2024 (the HHI was 1,934). As for the consumption segment, in April 2024, the HHI consumption index remained below the threshold for a highly concentrated market, with an HHI value of 2,092 (below the level in April 2023 – 2,134 and below the level in March 2024 – 2,215). 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