



**TBC CAPITAL**

# **Electricity Market 2023 Overview**

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# Executive Summary

Electricity generation in Georgia reached 14.4 TWh in 2023, marking an annual increase of 1.1%. Hydropower generated 75.5% of the total electricity, output of gas-fired power plants took up to 23.9% share, while wind power plant accounted for a modest share of 0.6%.

Electricity consumption amounted to 13.1 TWh and posted a 7.8% decrease compared to 2022. Retail consumers accounted for the 58% of the total consumption, direct consumers utilized 21% of the total, while 21% was consumed by Abkhazia.

It should be noted that 2023 marks the first year when the consumption contracted (excluding 2020 due to the pandemic). The Reduction was mainly driven by decreased demand from metallurgical factories, which reduced output, and by almost complete halt of cryptocurrency activities at an industrial scale.

A noticeable, 10.8% annual decrease is observed in Abkhazian demand. Alleged reason for the contraction should also be minimized cryptocurrency activities.

In 2023, electricity export amounted to 1,468 GWh, of which nearly 89% went to Turkey. In the last decade, Turkey became the main export destination for the local generation. A high voltage transmission line between Georgia and Turkey acts as a catalyst of the cooperation, able to transit up to 700 MW of power.

In 2023, Georgia collected a record-high of USD 103.3 mln from electricity export. Nearly 91% of the revenue came from Turkey. Good hydrological conditions, active output of gas-fired fleet in the export season, and elevated prices on the Turkish wholesale market contributed to the increased export revenues.

In 2023, there was another notable occurrence as the expenditure on imported electricity in Georgia experienced a significant reduction, with the country only spending USD 1.1 mln on electricity purchases. In terms of energy, Georgia imported 790 GWh of electricity, however, 98% of the import went to satisfy consumption of Abkhazia. Only 13 GWh of the imported energy was present in the supply mix.

New generation capacity additions are still slow. In 2023, only six small hydropower plants with the total installed capacity of 7.5 MW entered the operational phase. On the other hand, net-metering program is developing at a fast pace and at the end of 2023, 64 MW of micro power plants were operating, mostly consisting of solar power plants.

The second capacity auction was launched to hasten the pace of new capacity additions. Currently, a total of 800 MW of installed capacity is offered, which also includes power plants with storage capacities – dams in case of hydropower, and battery storages in case of solar and wind energy.

# Generation

In 2023, electricity generation reached 14.4 TWh, marking a slight increase of 1.1% after two years of double-digit growth. Hydropower generated 10.9 TWh (annual +0.1%), the gas-fired fleet produced 3.4 TWh (annual +1.7%), and the single operational Kartli wind power plant harnessed 86.1 GWh (annual -1.6%) of electricity.

Traditionally, hydropower remained a primary source of electricity generation, accounting for 75.5% of the total generated electricity in 2023. Gas-fired power plants accounted for 23.9% of the share, while wind power only held a modest share of 0.6%.

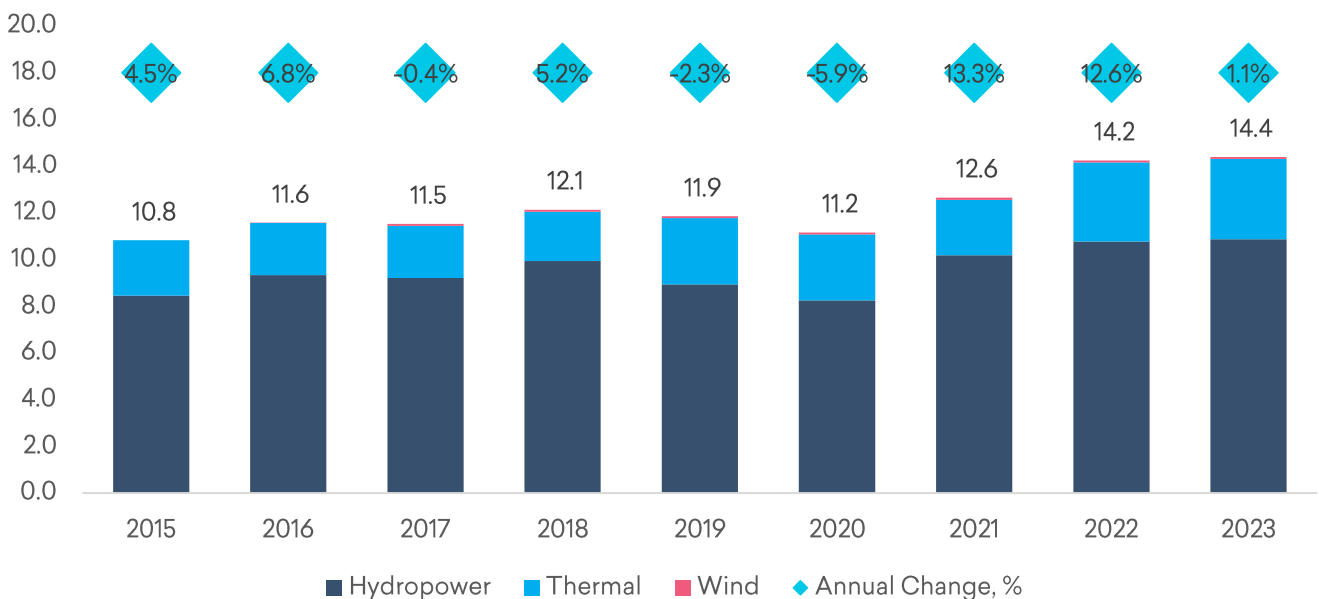
Regarding renewable energy, the Georgian power generation mix consists of 76.1% green energy, marking the lowest figure in recent years. The drop in the renewable energy sources (RES) share in the mix is primarily attributed to the delayed construction of hydro, wind, and solar

generation capacities. Consequently, domestic and export demand has been met using thermal generation, thus resulting in decreased renewable generation.

In 2023, only six small hydropower plants, with a combined installed capacity of 7.5 MW and an expected annual generation of 42.7 GWh, went into operation. Additionally, the net-metering program contributed nearly 27 MW to the grid, resulting in a nationwide total of 64 MW.

Mestiatchala 1, a 20 MW hydropower plant that was previously damaged and taken offline due to a rock avalanche in 2019, underwent rehabilitation and resumed power generation in late 2023.

Figure 1. Electricity generation (TWh) and annual change (%) 2015-2023



Source: GNERC

# Consumption

In 2023, electricity consumption totaled 13.1 TWh, reflecting a 7.8% annual decrease compared to the prior year. Within this total, 7.6 TWh was consumed by retail consumers (a 2.2% increase from 2022), 2.8 TWh was utilized by direct consumers (-25.3% YoY), while Abkhazia accounted for nearly 2.7 TWh of electricity usage (-10.8%).

2023 is the only year (excluding the pandemic 2020) when the total electricity consumption shrank. This contraction is notably evident among direct consumers, primarily driven by reduced output of metallurgical factories.

Additionally, industrial-scale cryptocurrency mining companies ceased operations from mid-2022 onwards, further contributing to the decrease in electricity consumption throughout 2023.

Abkhazia's decreased electricity demand likely stems from reduced cryptocurrency mining operations. The region's de facto government banned crypto mining in late 2020 with active enforcement starting in 2023, resulting in the confiscation of thousands of mining units in recent years.

Figure 2. Monthly consumption of direct consumers (GWh) in 2023 and annual change, %

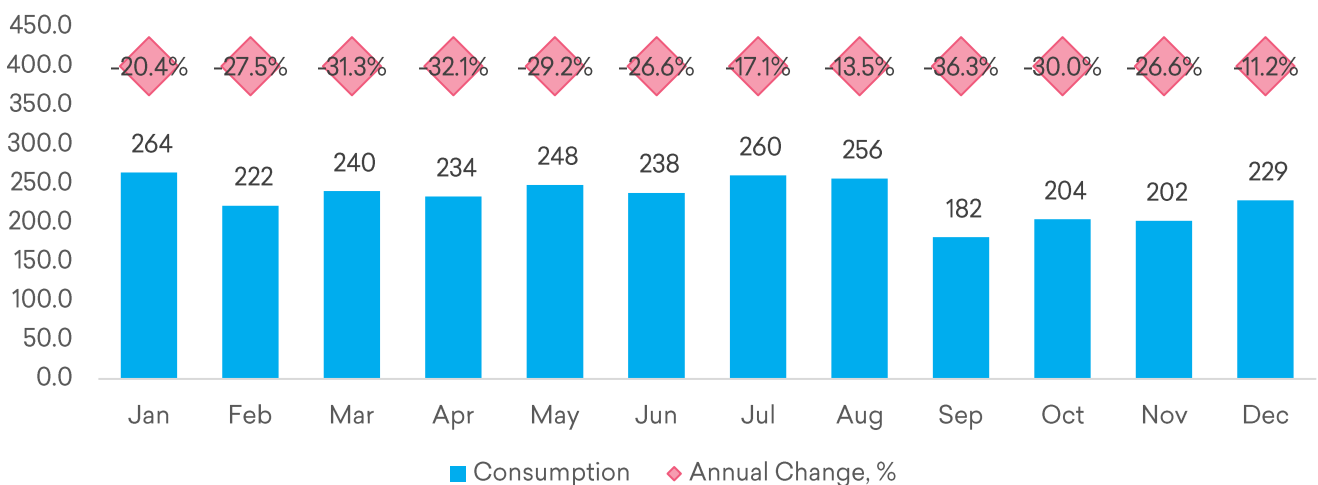
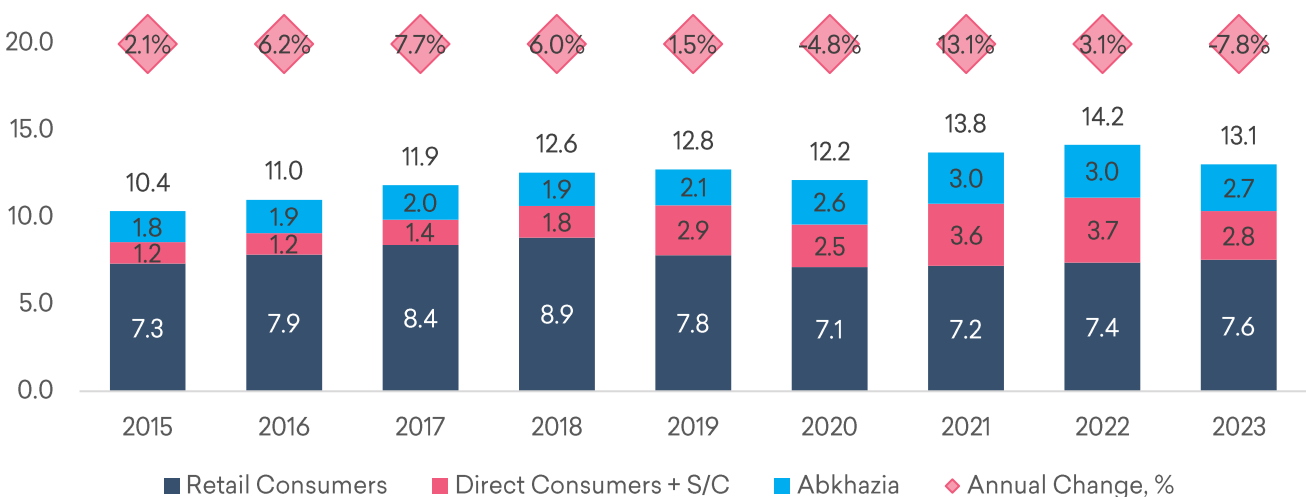


Figure 3. Electricity consumption by main groups (TWh), 2015-2023



Source: GNERC

# Balancing Electricity

In 2023, electricity traded via ESCO as the balancing electricity amounted to 2.5 TWh, a 16.7% of the total supplied electricity. The remaining power was sold using bilateral contracts. Price per unit of energy decreased down to USD 0.053 and marked a 4.8% decrease compared to the annual average price of 2022.

Out of total volume of balancing electricity, 62% was provided by renewables with PPA, while Gardabani 2 TPP contributed 33% to the total. Imported electricity had a record-low presence in the mix, thus, balancing electricity prices were not affected by external factors.

Figure 4. Traded volume of balancing electricity (TWh) and annual prices (US cent/kWh), 2015-2023

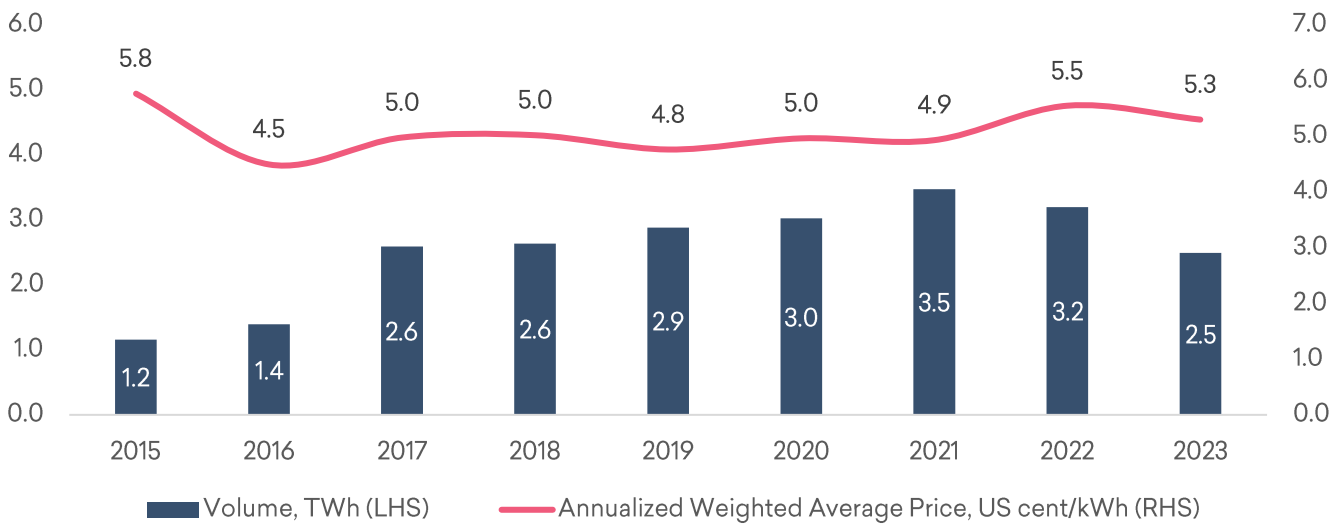
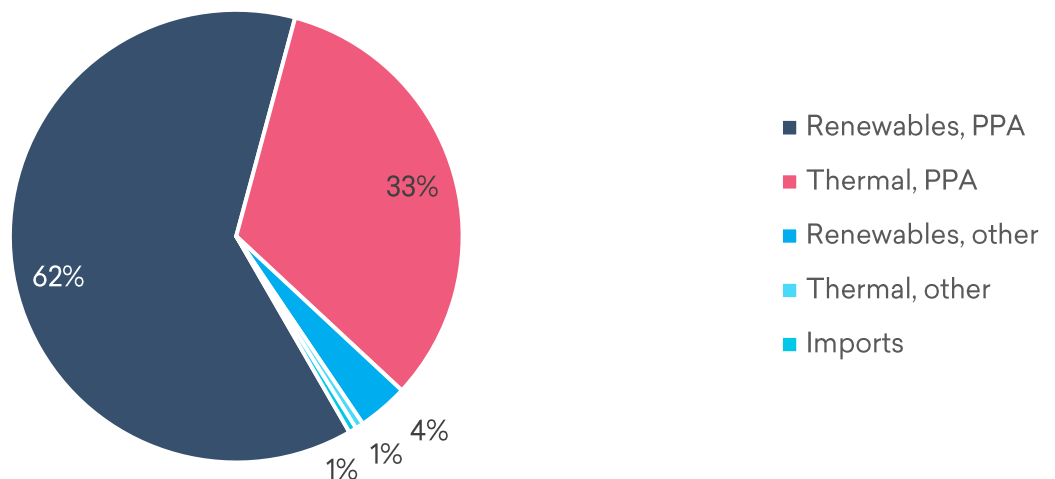


Figure 5. Balancing electricity breakdown, 2023



Source: GNERC, ESCO, NBG, TBC Capital



# End-user Tariffs

In late 2023, GNERC approved new tariffs for the electricity sector, effective from January 1st, 2024. Consequently, end-user tariffs for universal and public service suppliers decreased by 0.03 GEL/kWh including VAT.

GNERC regulates tariffs for universal service supplier, public service supplier, and the supplier of last resort, collectively covering nearly 58% of electricity consumption in 2023.

Table 1. End-user tariffs: Historical vs current, incl. VAT, GEL/kWh

	Telmico		EPG Supply	
	Historical	Current	Historical	Current
<b>Universal Supplier</b>				
220/380V, Small Companies	<b>0.329</b>	<b>0.299</b>	<b>0.320</b>	<b>0.290</b>
220/380V, Residential, 0-101 kWh	<b>0.180</b>	<b>0.150</b>	<b>0.177</b>	<b>0.147</b>
220/380V, Residential, 101-301 kWh	<b>0.221</b>	<b>0.191</b>	<b>0.217</b>	<b>0.187</b>
220/380V, Residential, >301 kWh	<b>0.265</b>	<b>0.235</b>	<b>0.262</b>	<b>0.232</b>
10-6-3.3kV, Residential	<b>0.296</b>	<b>0.266</b>	<b>0.309</b>	<b>0.279</b>
<b>Public Service Supplier</b>				
220/380V, non-Residential	<b>0.329</b>	<b>0.299</b>	<b>0.320</b>	<b>0.290</b>
10-6-3.3kV, non-Residential	<b>0.296</b>	<b>0.266</b>	<b>0.309</b>	<b>0.279</b>
35-110kV, non-Residential	<b>0.274</b>	<b>0.244</b>	<b>0.283</b>	<b>0.253</b>
<b>Supplier of Last Resort</b>				
220/380V, Residential, 0-101 kWh	<b>0.355</b>	<b>0.339</b>	<b>0.352</b>	<b>0.337</b>
220/380V, Residential, 101-301 kWh	<b>0.355</b>	<b>0.339</b>	<b>0.392</b>	<b>0.360</b>
220/380V, Residential, >301 kWh	<b>0.355</b>	<b>0.339</b>	<b>0.429</b>	<b>0.382</b>
10-6-3.3kV, Residential	<b>0.310</b>	<b>0.292</b>	<b>0.315</b>	<b>0.293</b>
220/380V, non-Residential	<b>0.355</b>	<b>0.339</b>	<b>0.392</b>	<b>0.360</b>
10-6-3.3kV, non-Residential	<b>0.310</b>	<b>0.292</b>	<b>0.315</b>	<b>0.293</b>
35-110kV, non-Residential	<b>0.287</b>	<b>0.274</b>	<b>0.289</b>	<b>0.269</b>

Source: GNERC, Matsne

# Cross-Border Trade

As hydropower dominates electricity system, Georgia experiences excess power to export in summertime, while imports are needed during the winter as the water levels in rivers get low. A stable connection to Turkey, a country with a summer peak consumption, through a transmission line carrying 700 MW presents a valuable opportunity for Georgian producers to collect higher revenues.

Relatively higher prices in Turkey also benefits Azerbaijan and Armenia, which transit electricity via Georgian lines to Turkey. As a results, total of 3.4 TWh of electricity were transmitted to Turkey via Georgia in 2023. In addition, Georgia exported 1.3 TWh to Turkey, marking a 27% share at Turkish border trade.

Figure 6. Monthly weighted average of Turkish day-ahead market prices, US cent/kWh

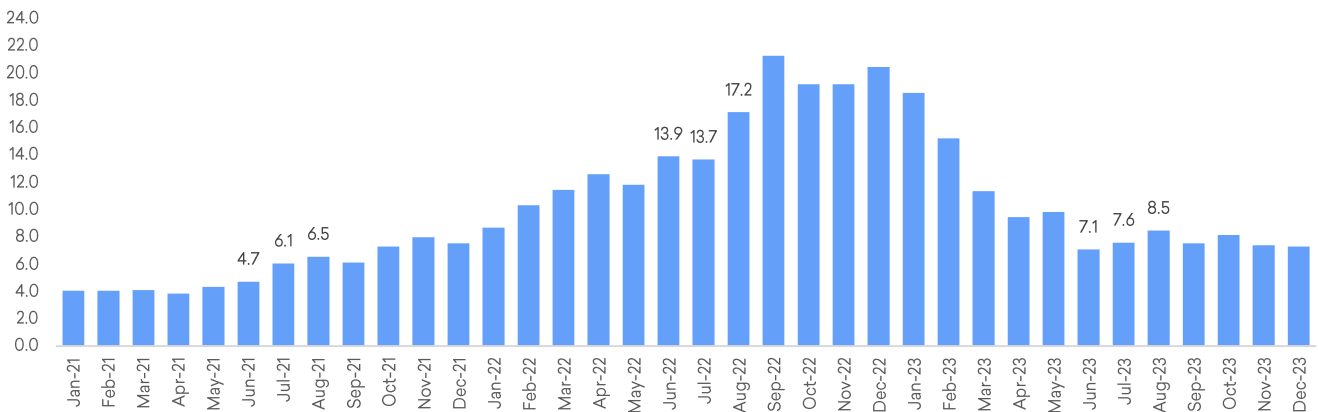
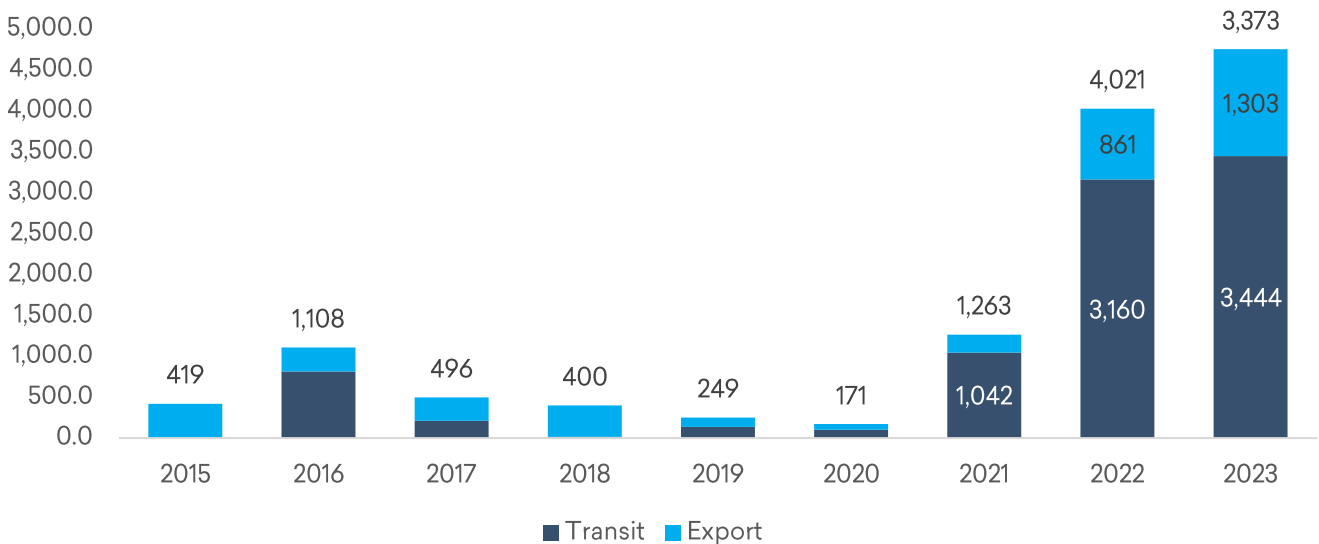


Figure 7. Cross-border trade of electricity with Turkey, GWh



Source: GNERC, EPIAS, NBG

# Export

Georgia's electricity exports reached 1,468 GWh in 2023, nearly breaking the previous record from 2010. The majority, 1,303 GWh (89%) of the electricity went to Turkey, which is Georgia's traditional export destination, while 86 GWh (6%) was exported to Azerbaijan, and 78 GWh (5%) to Armenia.

As revenue, Georgia collected USD 103.3 mln, highest number to date.

Top three exporters were Bookup Solutions (656 GWh, 45% of the total), Lux Energy (144 GWh, 10%), and ESCO (88 GWh, 6%).

Figure 8. Georgia's Electricity export by countries, GWh

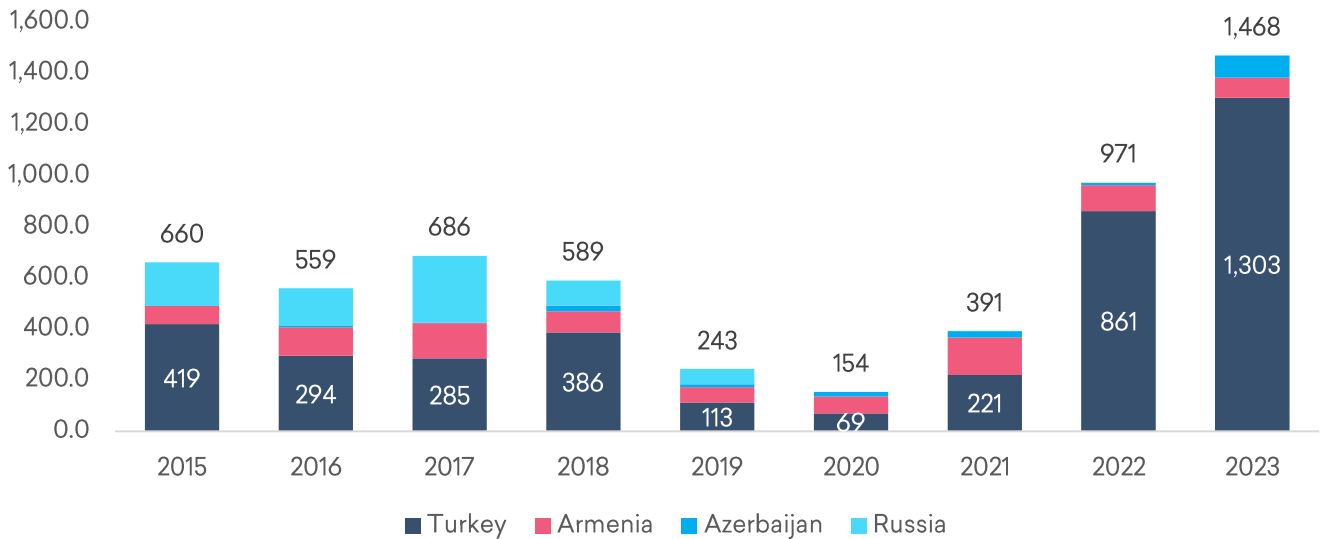
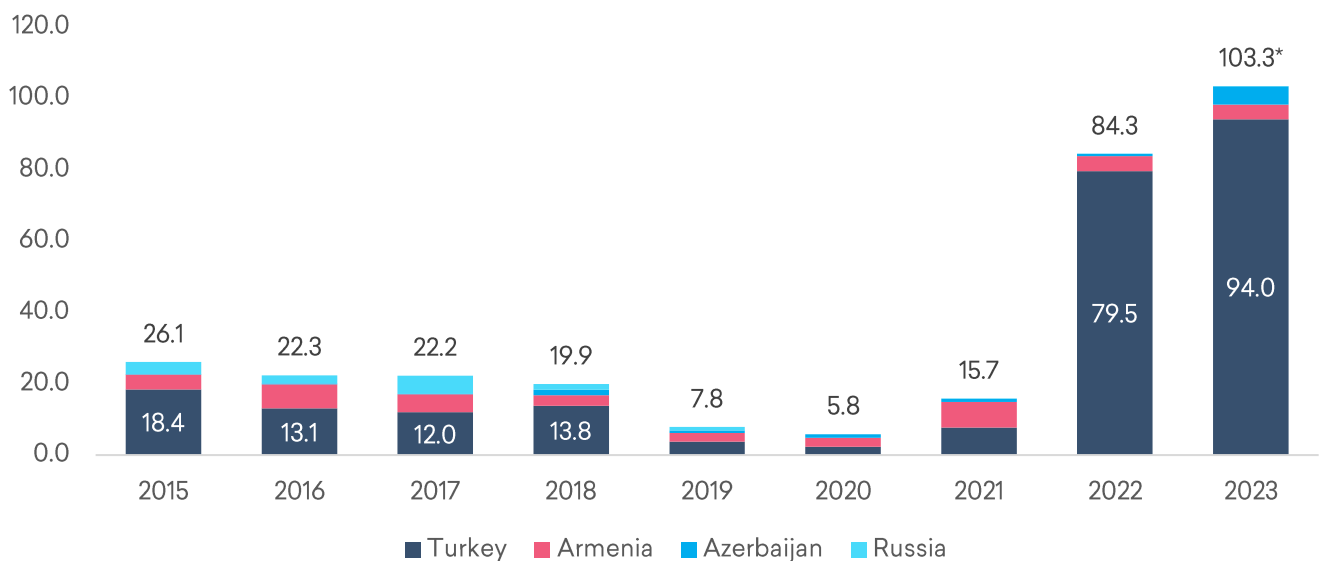


Figure 9. Electricity export revenues by countries, USD mln



Source: GNERC, ESCO, Geostat; \* - Preliminary data



# Import

In 2023, Georgia imported 790 GWh of electricity, marking a 48% decrease compared to the previous year. The reduction stemmed from decreased domestic consumption, increased thermal generation, and favorable hydrological conditions for hydropower.

Out of imported 790 GWh, 98% was imported from Russia to satisfy Abkhazian demand. The remaining energy, 13 GWh, was imported from Russia (10 GWh), and Azerbaijan (3 GWh) as a balancing electricity and did not have any commercial pattern.

As a total, nearly USD 1.1 mln was spent on electricity imports.

Figure 10. Electricity imports by countries, GWh

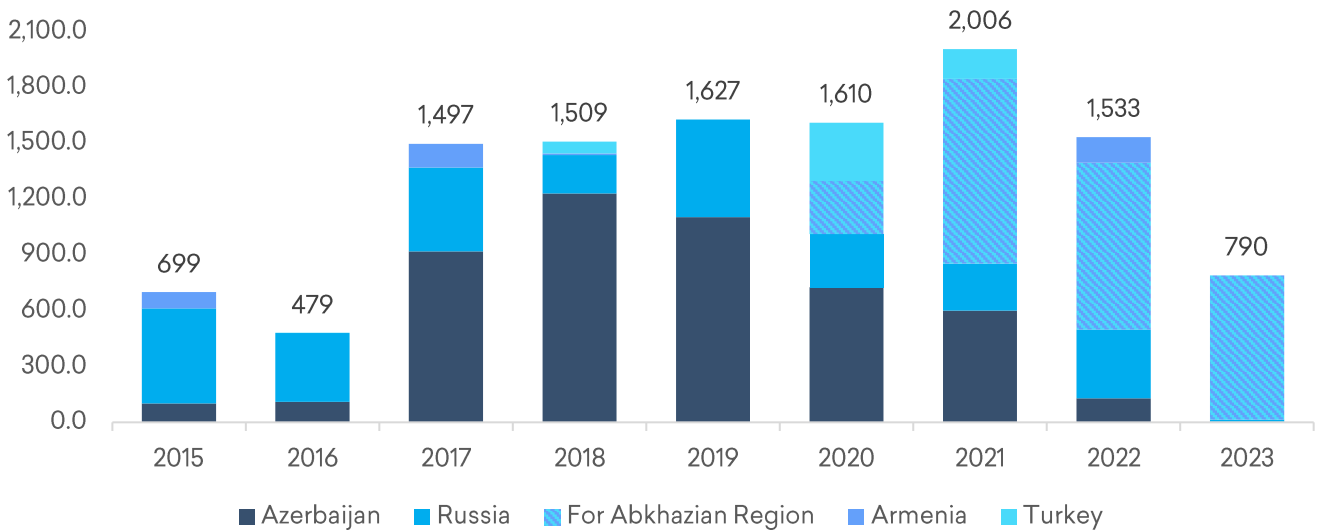
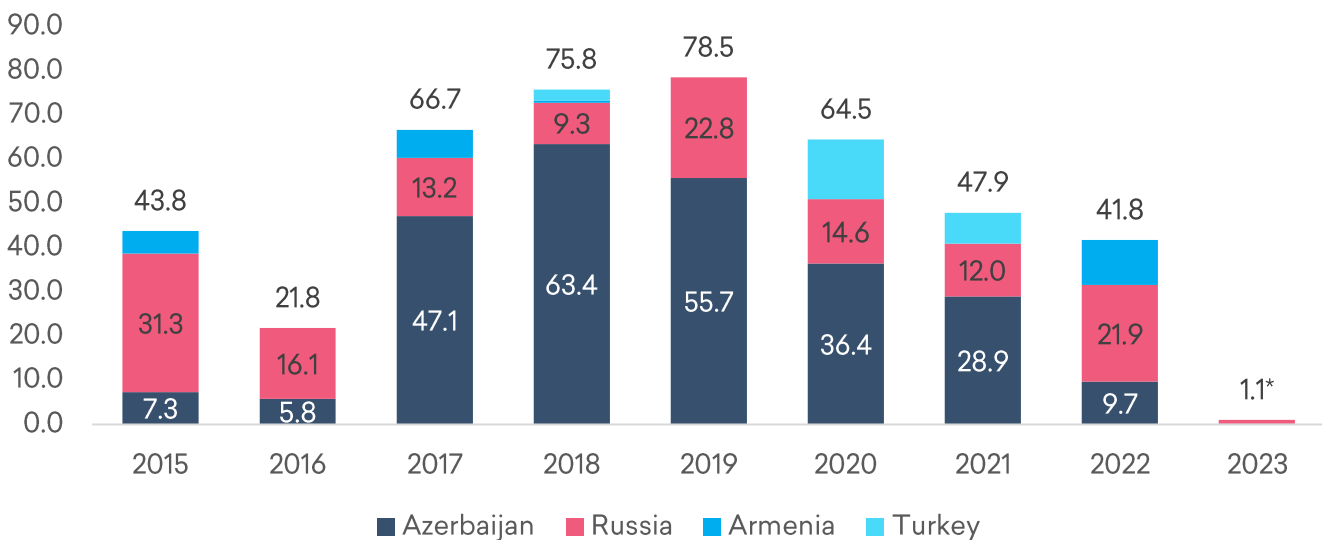


Figure 11. Import expenses, USD mln



Source: GNERC, Geostat; \* - Preliminary data

# Second Capacity Auction

The second capacity auction commenced in late December 2023, offering a total of 800 MW projects to potential investors. This marked a nearly threefold increase in government-offered capacity compared to the first auction, accompanied by the introduction of renewable technologies integrated with storage systems. More information about the first capacity auction can be found in our [report](#).

Breaking down the available capacity by type, there are 400 MW allocated for hydropower, with an additional 195 MW each for solar and wind power; the remaining 10 MW is earmarked for other types of renewable projects.

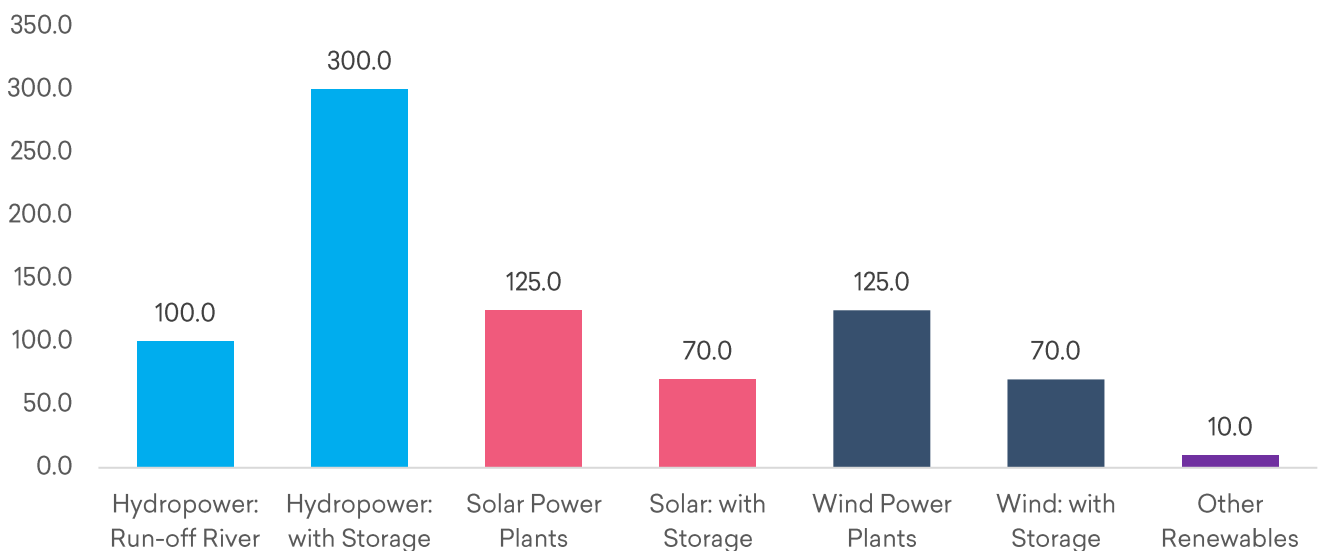
In the second auction, investors can develop projects incorporating storage capacities. Specifically, for hydropower, projects with reservoirs of up to 300 MW

are available, while for solar and wind, storage capacities of up to 70 MW each can be incorporated.

Winning projects will secure Contracts for Difference (CfD) agreements with ESCO. Under this arrangement, projects will receive compensation if the contract price is higher than the day-ahead market price on the open market. Conversely, if the market price exceeds the contract price, the company will compensate ESCO for the disparity.

According to legislation, all projects receive a 15-year support. However, hydropower projects receive support period spanning from September to April. Wind projects are supported from August to April, while solar projects benefit from year-round support.

Figure 12. Capacity allocations by technology on the second auction, MW



Source: MoESD



# Annex

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# Acronyms

CAGR	Compound Annual Growth Rate
DSO	Distribution System Operator
ESCO	Electricity System Commercial Operator
GDP	Gross Domestic Product
GNERC	Georgian National Energy and Water Supply Regulatory Commission
GOGC	Georgial Oil and Gas Corporation
GSE	Georgian State Electrosystem
GWh	Gigawatt hours
HPP	Hydro Power Plant
kWh	Kilowatt hours
MoESD	Ministry of Economics and Sustainable Development
NBG	National Bank of Georgia
PPA	Power Purchase Agreement
SARAS	Service for Accounting, Reporting and Auditing Supervision
TPP	Thermal Power Plant
TSO	Transmission System Operator
TWh	Terawatt hours
VAT	Value Added Tax
WPP	Wind Power Plant

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