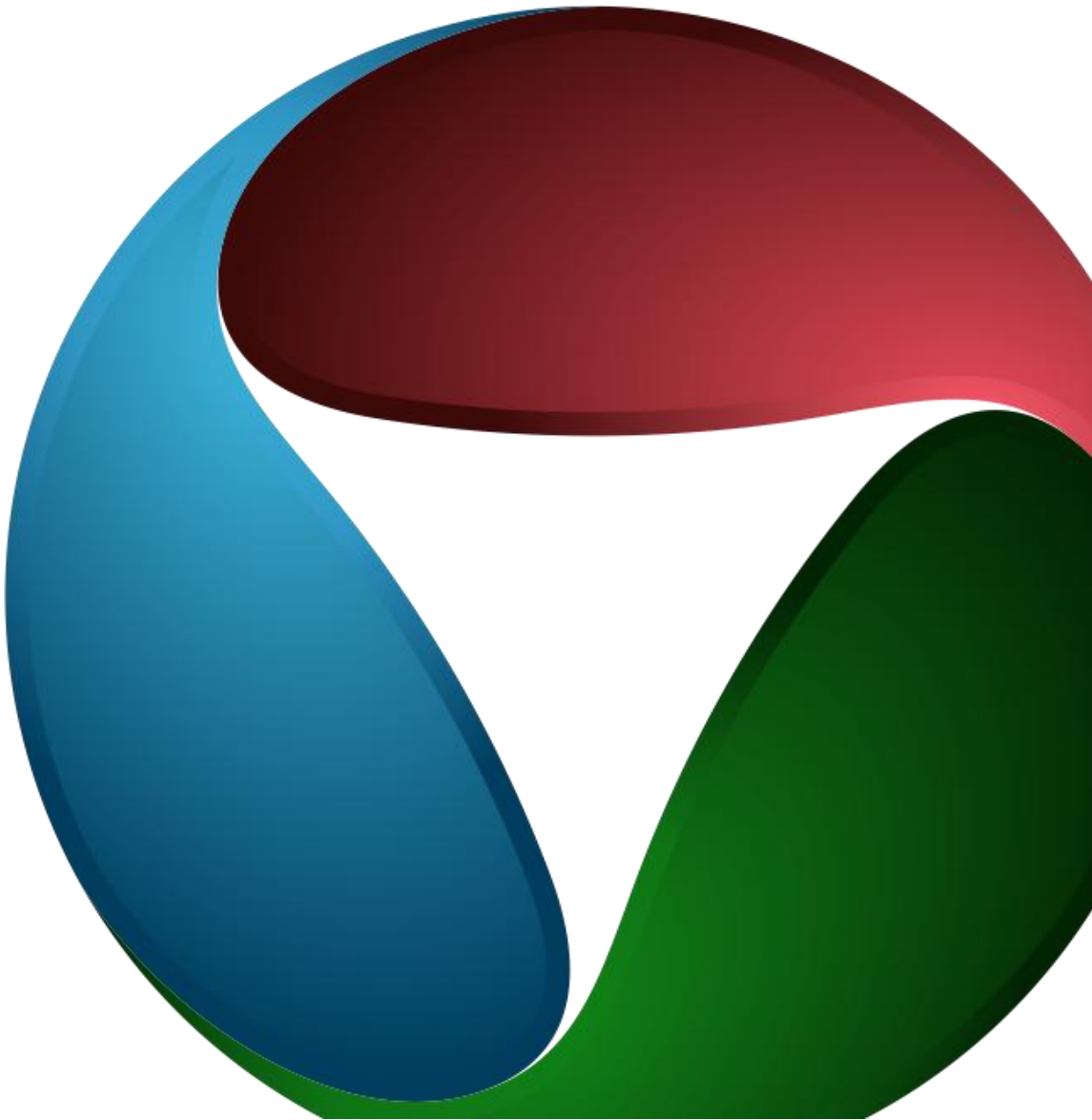
OMNIA

THE PLURAL OF ENERGY

POWER MARKET ANNUAL REPORT
Georgia

January - December 2024



Summary

Generation

In 2024, Georgia's total resources needed to meet gross consumption amounted to 14,414.0 GWh, sourced from hydro, thermal, wind, and imported power.

Over the past 12 months, Georgia generated a total of 11,421.9 GWh from hydro and wind sources, complemented by 2,812.2 GWh from thermal power.

Georgia's power generation continued to be largely dominated by renewable energy sources, with a month-to-month variability that remained consistently high throughout the year. This resulted in renewable energy accounting for 80.2% of the country's total power generation.

In 2024, domestic generation was 8.6% higher than the average of the previous four years, although it was 1.1% lower compared to 2023. Domestic renewable energy sources, however, produced 4.3% more than in 2023 and 13.3% more than the average for the period from 2020 to 2023.

Demand

The total net consumption in 2024 reached 13,038.2 GWh. This includes 7,325.1 GWh supplied to retail consumers. 2,552.7 GWh consumed in the territory of occupied Abkhazia, 3,142.1 GWh consumed by large industrial users, and 1,103.8 GWh purchased by the TSO and DSOs to compensate network losses.

Additionally, 18.4 GWh was used by generation companies for self-consumption during periods of non-operation.

The 7,325.1 GWh of energy supplied to retail consumers was distributed as follows: 4,371.3 GWh to universal service suppliers, 2,939.2 GWh to public service suppliers, and 14.6 GWh to other suppliers.

Power consumed by wholesale consumers in 2024 increased by 6.0% compared to 2023 and by 4.2% compared to the average for the period from 2020 to 2023.

Cross-border

In 2024, Georgia imported 1,227.5 GWh of energy to meet its demand. During the same period, the country exported 1,047.4 GWh of electricity. As a result, the net cross-border exchange showed an import of 180.2 GWh.

In 2024, cross-border exchange saw a higher number of imports than exports, although it decreased compared to the average of the previous four years. Compared to 2023, Georgia shifted from being a net exporter to a net importer in 2024, reflecting a 126.5% negative change.

Additionally, 1,074.3 GWh of power transited through the Georgian power system.

Power trade

From January to December 2024, a total of 15,014.3 GWh of electricity was traded. Of this, 10,090.9 GWh was traded bilaterally, while 4,139.9 GWh, or 27.6% of the total, was balancing energy. Additionally, 17.5 GWh of power was traded through the GENEX platform.

During the same period, 2,985.6 GWh of balancing energy was traded under PPA agreements. Of this, 1,906.6 GWh (72.1%) was generated by renewable energy sources (RES), with the remaining energy produced by the CCGT 2 thermal power plant, with Renewable Energy Source PPAs contributing 46.1% and thermal PPAs making up 26.1%.

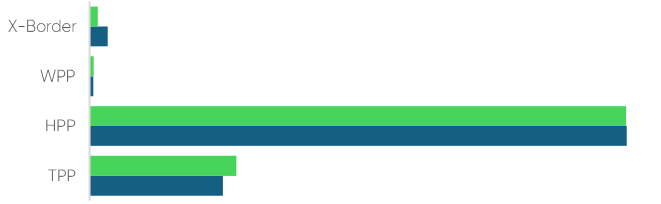
The average weighted price for balancing energy throughout 2024 was 152.31 GEL/MWh.

The average weighted price for balancing energy during the year was 152.31 GEL/MWh, with the highest price recorded in December 2024 at 164.05 GEL/MWh, and the lowest at 121.41 GEL/MWh in May 2024.

Annual plans and facts

Annual balance

The 2024 Annual Energy (Capacity) Forecast Balance was approved in December 2023 and updated in June 2024. This balance is developed by the TSO based on generation and consumption forecasts provided by wholesale market participants. The TSO, considering demand and supply forecasts, system operation modes, and scheduled maintenance works, makes necessary adjustments, including the operation of thermal power plants, cross-border exchanges, and monthly generation volumes of reservoir power plants. The "Annual power (capacity) forecast balance" is approved by the MoESD.



	TPP	HPP	WPP	X-Border
Plan	3099.5	11326.0	85.8	174.0
Fact	2812.2	11344.4	77.6	386.4

Fig. 6 Annual Plan/Fact comparison, January – December 2024, (GWh)

The annual forecast balance sets indicative parameters for market participants' monthly generation and supply, as well as cross-border exchange volumes and periods. It also forecasts the average daily consumption volumes for each month, including monthly peak and off-peak consumption and generation volumes.
System operation hourly schedules are approved by the TSO separately on a daily basis using updated information.

In 2024, Georgia generated 277.1 GWh of power, which is 1.9% of the total planned domestic generation while net consumption was 235.8 GWh or 1.7% higher than forecasted for the same period. The country produced 287.3 GWh (9.3%) less thermal energy and 18.7 GWh (0.2%) more hydro energy than planned. Additionally, Georgia imported 212.4 GWh (22.0%) more and exported 206.2 GWh (26.1%) more than anticipated. The net cross-border annual exchange was 2124 GWh, which is 122% more than planned, making Georgia a net-import country in 2024.

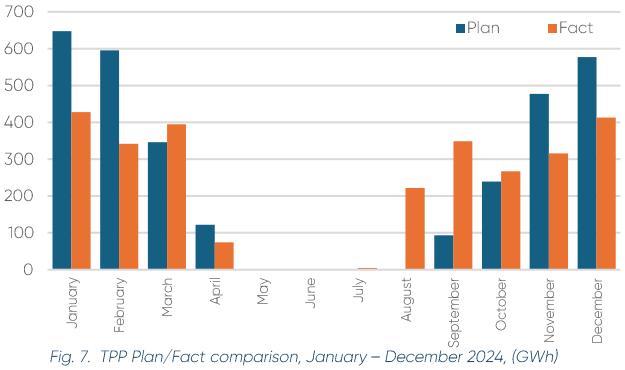


Fig. 7. TPP Plan/Fact comparison, January – December 2024, (GWh)

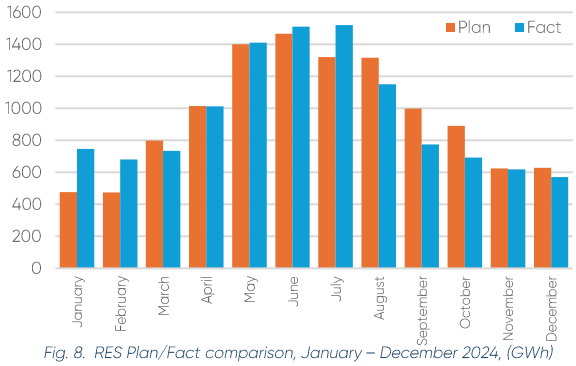


Fig. 8. RES Plan/Fact comparison, January – December 2024, (GWh)

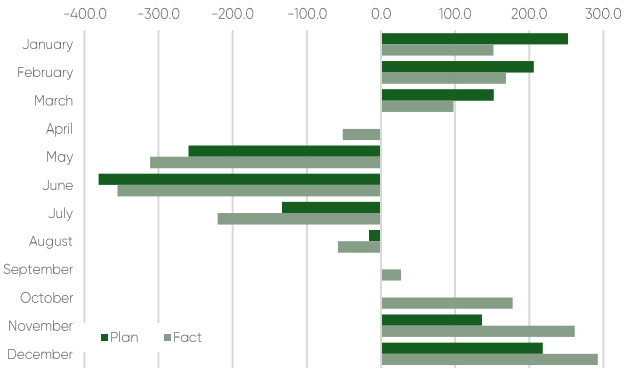


Fig. 9. Net X-Border exchange Plan/Fact comparison, January – December 2024, (GWh)

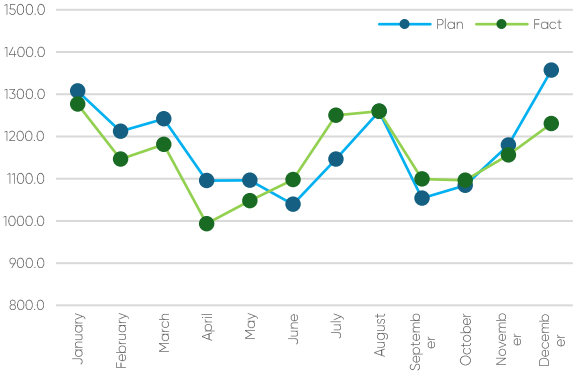


Fig. 10. Net consumption Plan/Fact comparison, January – December 2024, (GWh)

Power generation

Hydro and wind power plants

RES power generation continues to be the dominant source of electricity in Georgia. It fluctuated monthly, not only in terms of the total generation but also in its generation mix. Moreover, there was a consistent upward trend throughout 2024, with RES eventually accounting for 100% of domestic power generation by the end of the reporting period.

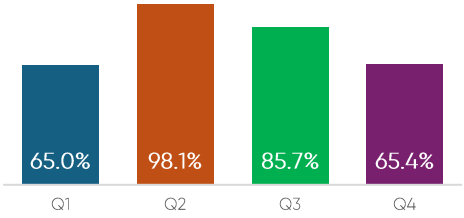


Fig 11. Quarterly share of RES generation, 2024, (%)

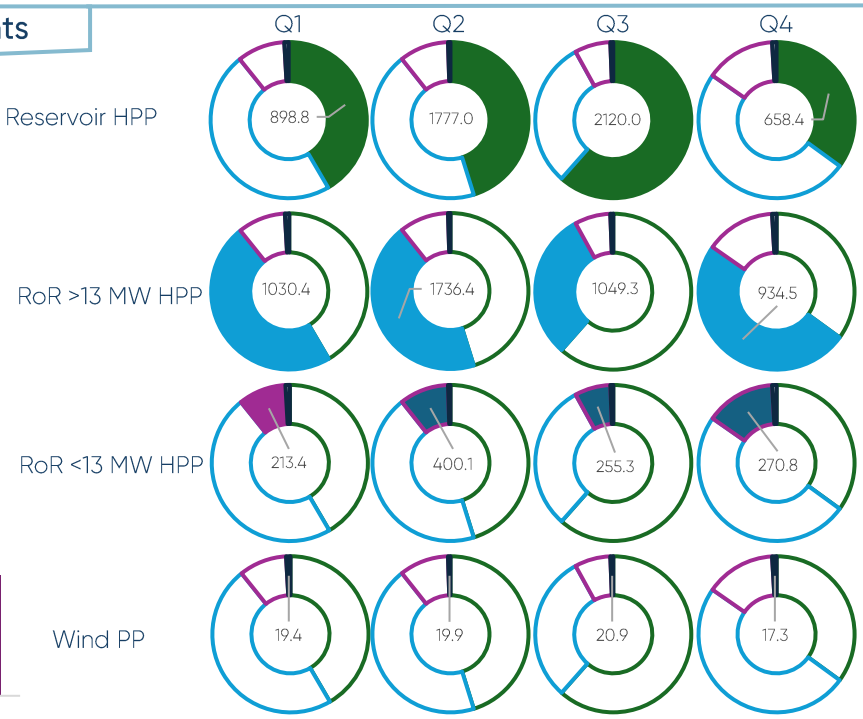


Fig 12. Quarterly volumes of RES generation by sources and share in total RES, 2024, (GWh)

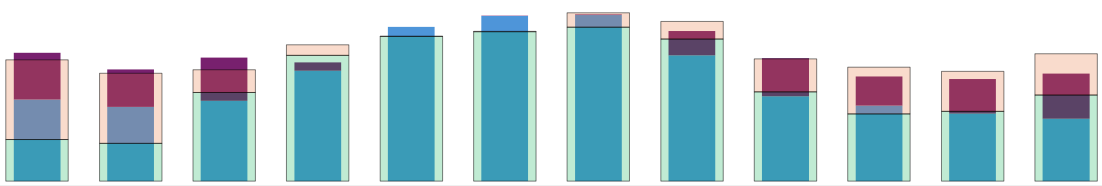
Thermal power plants

Thermal power plants were out of operation for only a few months in 2024. They were dispatched according to system requirements, considering factors such as domestic consumption, renewable energy generation, and imported energy.

	January	February	March	April	May	June	July	August	September	October	November	December
G-Power	8.88	5.79	0	3.51	0	0	0.39	23.74	21.23	8.04	4.83	0.23
CCGT 2	170.51	95.46	163.67	13.45	0	0	0	139.1	163.55	122.47	149.3	169.03
CCGT 1	156.63	135.97	159.79	48.74	0	0.23	0	53.51	160.99	137.01	132.98	159.06
Units 3 and 4	25.92	54	33.8	8.25	0	0	4.67	0	3.17	0	26.8	63.25
Unit 9	65.82	50.75	37.92	0	0	0	0	5.58	0	0	2.24	21.9

Fig 13. Monthly generation of TPPs, Jan- Apr 2024, (GWh)

In 2024, Georgia generated 161.7 GWh less energy than in 2023. However, the monthly generation differences and their structure fluctuated, showing variations in both directions.



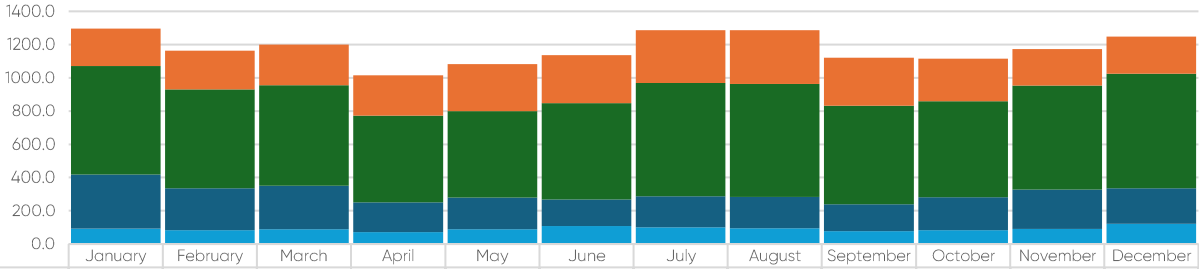
	January	February	March	April	May	June	July	August	September	October	November	December
TPP 2024	427.77	341.98	395.17	73.96	0	0.23	5.06	221.93	348.95	267.53	316.16	413.46
RES 2024	747.13	679.98	734.88	1011.53	1410.82	1511.06	1519.5	1150.59	775.39	691.57	619.43	570.06
TPP 2023	728.39	642.78	208.26	98.27	0.89	1.83	131.53	162.08	301.95	428.7	363.56	378.22
RES 2023	382.33	344.63	811.19	1150.67	1324.48	1366.77	1409.84	1300.73	815.95	614.69	639.79	788.23

Fig 14. Domestic generation in January – December 2023-24, (GWh)

Power Consumption

Net consumption and losses

Net[1] power consumption from January to December 2024 totaled 13,834.4 GWh. During this period, the TSO and DSOs procured 1,103.8 GWh to offset transmission and distribution losses. Transmission losses amounted to 289.4 GWh, while distribution losses were 216.0 GWh for Telasi and 590.6 GWh for Energo-Pro.

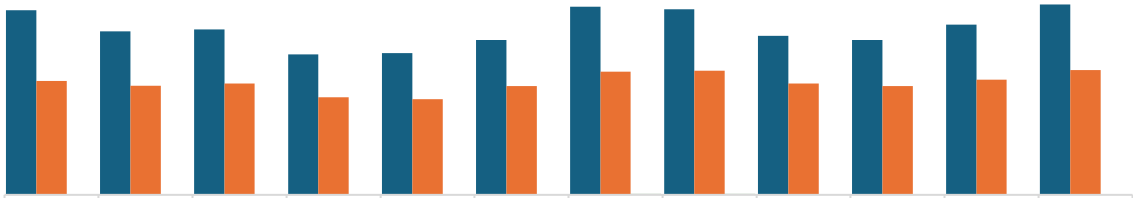


	January	February	March	April	May	June	July	August	September	October	November	December
Direct consumers	225.1	232.9	243.6	242.6	282.3	290.3	317.5	322.3	288.1	256.1	219.3	222.0
Suppliers	653.3	595.7	605.4	521.4	520.5	577.8	682.9	679.8	593.3	578.2	626.2	690.5
Abkhazia	325.7	250.9	260.8	179.1	191.1	160.3	185.5	189.4	163.1	197.4	235.3	214.1
Losses	92.5	83.9	89.3	72.1	88.5	108.7	101.2	94.3	76.6	83.6	91.9	121.1

Fig 15. Consumption January – December 2024, (GWh)

Power supply services

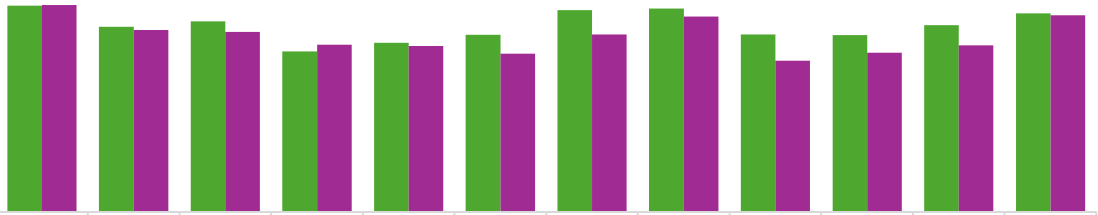
The amount of the power supplied to the retail customers was equal to 7,325.1 GWh or 56.3% of total purchased by consumers. The breakdown of supplied power by months and supplies are shown below.



	January	February	March	April	May	June	July	August	September	October	November	December
Universal suppliers	403.9	357.3	361.6	307.0	309.7	338.6	411.5	406.2	348.1	338.8	372.4	416.1
Public supplier	249.4	238.4	243.2	213.8	209.5	237.6	269.4	271.7	243.5	237.8	252.2	272.8
Other Suppliers	0.0	0.0	0.6	0.6	1.3	1.6	2.0	2.0	1.7	1.6	1.6	1.6

Fig 16.. Supply January – December 2024, (GWh)

Total power consumption in the country during the period from January to December 2024 was 6.0% higher than during the same period in 2023. Breaking down the consumption structure, direct consumers in 2024 used 363.5 GWh, representing a 4.5% increase, while suppliers delivered 510 GWh, an increase of 14.1%. DSO losses rose by 5.5%, or 43.5 GWh, compared to 2023. In contrast, Abkhazia's consumption decreased by 5.6%, amounting to 150.1 GWh less in 2024. TSO losses also saw a significant decline, decreasing by 23.6%, or 89.2 GWh, in 2024 compared to the previous year.



	January	February	March	April	May	June	July	August	September	October	November	December
Consumption 2024	1276.7	1145.9	1180.7	993.3	1048.0	1097.5	1250.2	1260.0	1099.5	1096.1	1156.0	1230.6
Consumption 2023	1282.1	1126.9	1115.2	1036.0	1028.5	979.8	1100.0	1210.8	937.1	987.0	1032.2	1217.9

Fig 19. Power consumption January – December 2023-24, (GWh)

[1] Net consumption is equal to the amount of power off-taken form the transmission and distribution networks.

Cross-border Exchanges

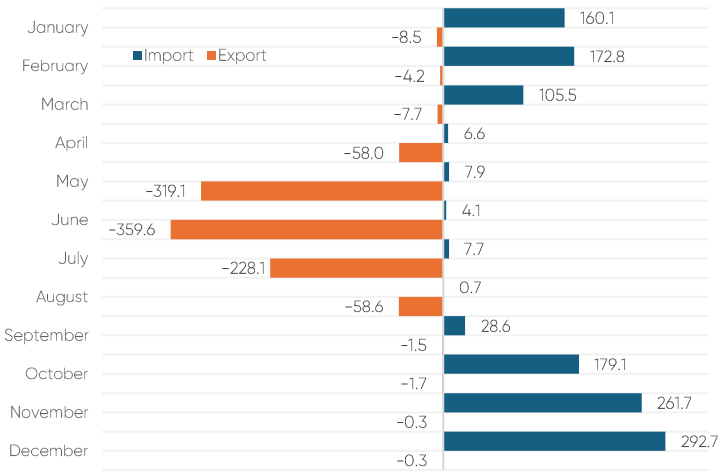


Fig 20. Power import and export in January – December 2024, (GWh)

Import and export

Georgia engaged in power exchanges with neighbouring countries to balance domestic demand, export surplus electricity, and maintain synchronous parallel operations. As a result, both imports and exports occurred within the same month. However, the net direction of power exchange varying from imports at the beginning and end of January-December 2024 to exports in the middle of the year. This shift was driven by hydrological conditions, the operational mode of hydro and thermal power plants, and fluctuations in demand levels.

Exchange by countries

Georgia has the technical capability to exchange power with all countries in the region. However, the mode of operation and the direction of power flow may vary from month to month and from one country to another. Along with import and export, Georgia is also transiting power through its system. The main market for transited power is Türkiye.

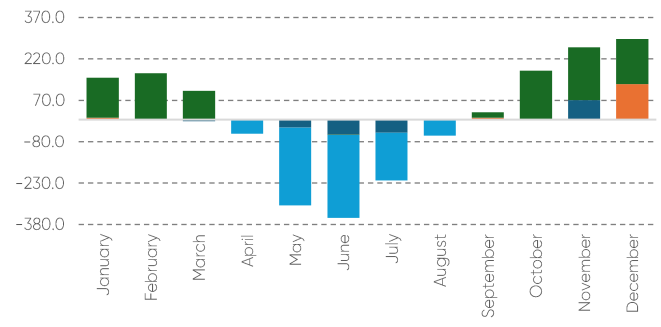


Fig 21. Power exchange by countries in January – December 2024, (GWh)

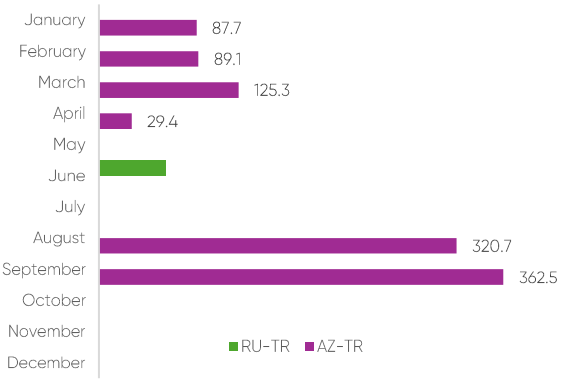


Fig 22. Power transit by directions in January – December 2024, (GWh)

From January to December 2024, Georgia's power imports increased by 437.7 GWh, a 55.4% rise compared to the same period in 2023. During the same period, exports fell by 421.0 GWh, or 28.7%, compared to 2023. Additionally, the volume of transited power experienced a significant decline. In 2023, the Georgian system transited 3,444.5 GWh, but this figure dropped to just 1,074.3 GWh in 2024, representing a decrease of more than three times.

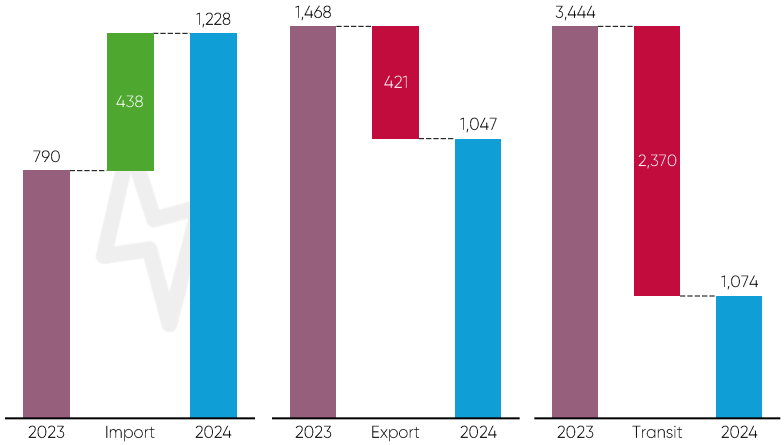
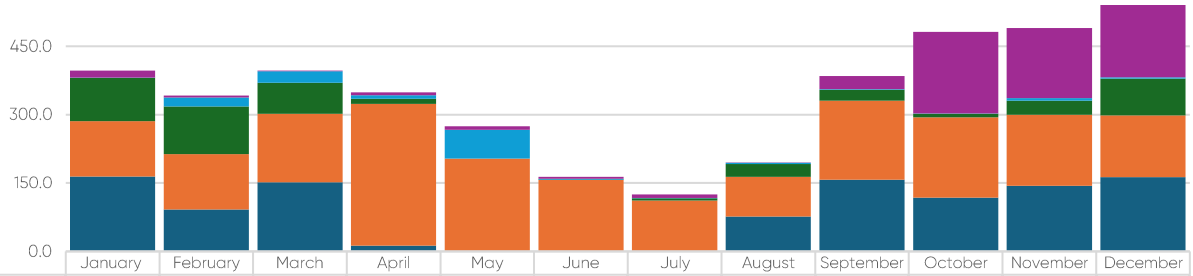


Fig 23. Comparison of Import, export, and transit annual volumes in 2023-24, (GWh)

Power trade

Balancing energy

The amount of balancing energy during the period from January to December 2024 varied from month to month. By the end of the year the amount of balancing energy increased. The primary reasons for this variation are the amounts of power generated under PPA agreements, both RES and thermal. Another reason is increase of imported volumes, which is mainly traded as balancing. and the volumes of imports, both of which are predominantly traded as balancing energy.

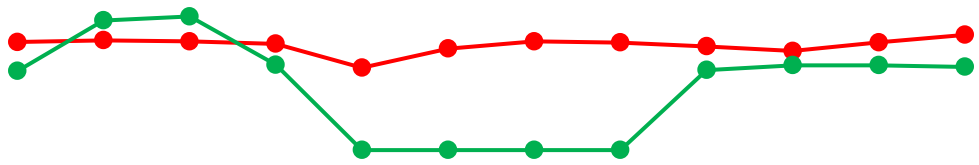


	January	February	March	April	May	June	July	August	September	October	November	December
Import	15.0	4.2	1.6	6.6	7.9	4.1	7.6	0.7	28.6	179.1	154.2	158.6
Hydro	0.6	19.8	25.1	7.4	62.6	1.6	0.9	2.7	1.7	0.8	5.3	2.9
Thermal	95.0	104.3	67.8	11.2	0.0	0.2	4.8	28.1	23.5	7.8	31.3	80.8
PPA RES	121.3	121.8	150.7	311.1	203.9	157.4	111.6	87.4	173.4	176.5	156.0	135.6
PPA Thermal	164.4	91.8	151.5	12.9	0.0	0.0	0.0	76.5	157.6	117.7	143.6	162.9

Fig 24. Balancing structure in January – December 24, (% and GWh)

Electricity prices

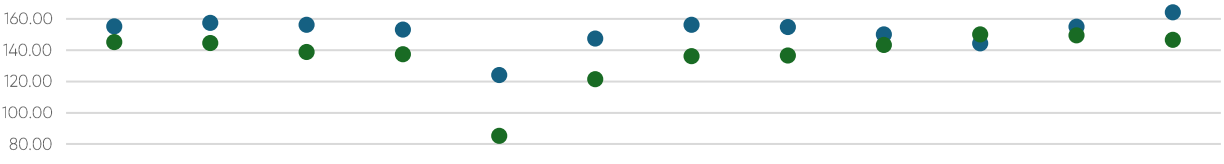
The balancing electricity price is influenced by its structure and the exchange rate, as the prices for electricity generated by PPA power plants, as well as imported power, are set in foreign currencies. The purchase price of balancing energy for deregulated power plants also fluctuated from January to December 2024, along with the prices of electricity from thermal power plants.



	January	February	March	April	May	June	July	August	September	October	November	December
Balancing price	155.22	157.37	156.12	153.11	124.13	147.40	156.16	154.74	149.98	144.34	154.97	164.05
Deregulated price	120.17	181.56	186.43	127.78	24.12	24.12	24.12	24.12	121.26	127.13	127.13	125.2

Fig 25 Balancing and deregulated PPs' prices January – December 2024 (GEL/MWh)

During the year of 2024, balancing energy prices were higher compared to the same period in 2023. Except October, when the balancing energy price of 2024 was lower than in 2023.



	January	February	March	April	May	June	July	August	September	October	November	December
2024	155.22	157.37	156.12	153.11	124.13	147.40	156.16	154.74	149.98	144.34	154.97	164.05
2023	145.16	144.50	138.84	137.40	85.20	121.41	136.04	136.44	143.37	150.02	149.32	146.56

Fig 26. Balancing energy prices January – December 20223-24 (GEL/MWh)

Power Exchange

DAM operation

The Georgian Energy Exchange (GENEX) officially launched on 1 July 2024, marking a significant development in the country's energy market. However, trading activity has been limited, with few active trading days.

From July to November 2024, a total of 17.5 GWh was traded through the platform, representing just 0.23% of the total electricity traded nationwide during this period. The key challenge has been low market liquidity, resulting in infrequent trading days and restricted activity. On days when trading occurred, both volumes and prices showed minimal fluctuations.

The highest trading volume occurred at 16:00 on 25 July 2024, with 123.4 MWh of electricity traded at a price of 126.43 GEL/MWh. The highest recorded price was 148.52 GEL/MWh on 6 September 2024. On that day, trading activity was consistent across all Market Time Units (MTUs), with each MTU trading 9.7 MWh.

DAM Data

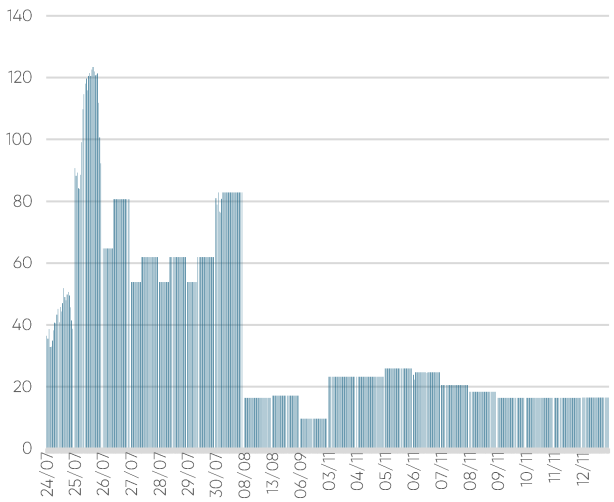


Fig 27[1]. DAM Volumes July-November 2024. (MWh)
On the diagram are shown only trading days.

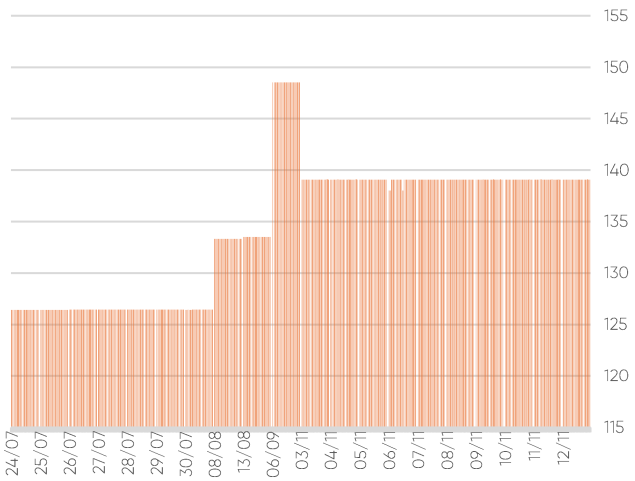
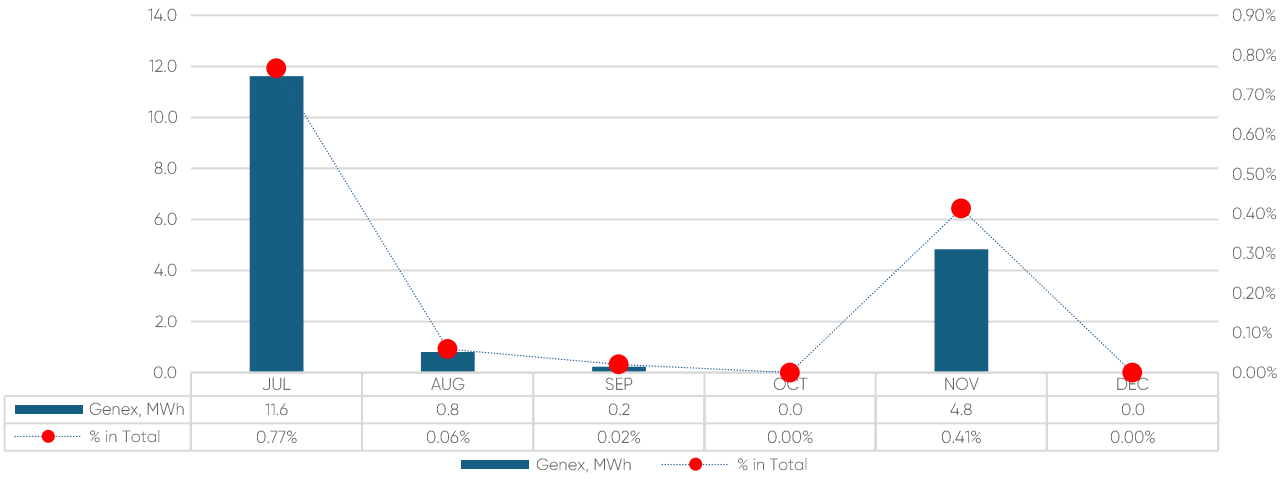


Fig 27[2]. DAM Prices July-November 2024, GEL/MWh
On the diagram are shown only trading days.



	JUL	AUG	SEP	OCT	NOV	DEC
Genex, MWh	11.6	0.8	0.2	0.0	4.8	0.0
% in Total	0.77%	0.06%	0.02%	0.00%	0.41%	0.00%

Fig 28. DAM monthly traded energy (GWh) and its share in total traded energy, July-December 2024..

Other indicators

Guaranteed capacity

All guaranteed capacity sources were operational in 2024, providing both guaranteed capacity and energy to meet domestic demand. A total of 156.4 million GEL was paid to these sources from January to December 2024. As their actual annual availability exceeded the required levels, they received reduced payments in December to align with their annual revenue target.

A detailed monthly breakdown of the guaranteed capacity payments is provided in Table 1.

	January	February	March	April	May	June	July	August	September	October	November	December
Unit 3	821	768	821	794	0	0	768	821	794	821	794	106
Unit 4	895	838	895	867	895	58	58	895	867	895	751	58
Unit 9	2 052	1 854	2 052	1 986	2 052	1 589	0	66	1 986	2 052	1 986	596
G-Power	1 412	1 321	1 412	1 366	1 412	1 366	1 412	1 275	1 366	1 412	1 366	182
CCGT 1	10 754	10 383	11 495	11 124	11 495	11 124	2 596	3 337	11 124	11 495	11 124	1 483
Total	15 934	15 163	16 676	16 138	15 855	14 137	4 833	6 395	16 138	16 676	16 022	2 425

Tab 1. Guaranteed capacity payments January – December 2024, (1000 GEL)

RES share

From January to December 2024, renewable energy sources in Georgia produced a total of 11,421.9 GWh, representing 80.2% of the country's total domestic generation. The share of RES varied each month, ranging from 58.0% in December to 100% in May and June. Reservoir hydropower plants (HPPs) accounted for 55.7% of the total hydroelectric energy, while solar energy contributed 0.6% to the overall RES generation.

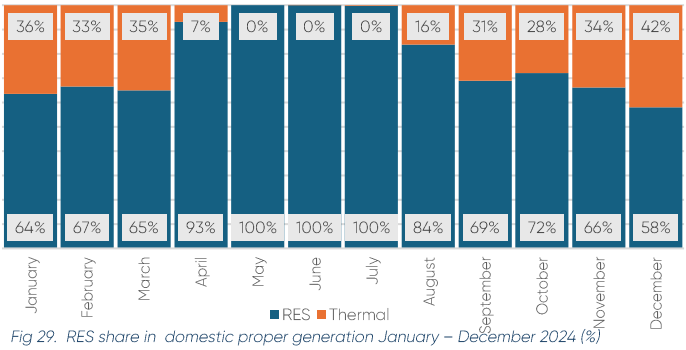


Fig 29. RES share in domestic proper generation January – December 2024 (%)

System peak loads

The generation and cross-border exchange within the Georgian power system are shaped by local consumption and generation patterns. The diagram below shows how the system met peak demand during the winter months and managed surplus domestic generation during the spring and summer months from January to December 2024. The highest peak demands occurred in the summer (July and August), driven by hot weather and the increased use of air-conditioning systems.

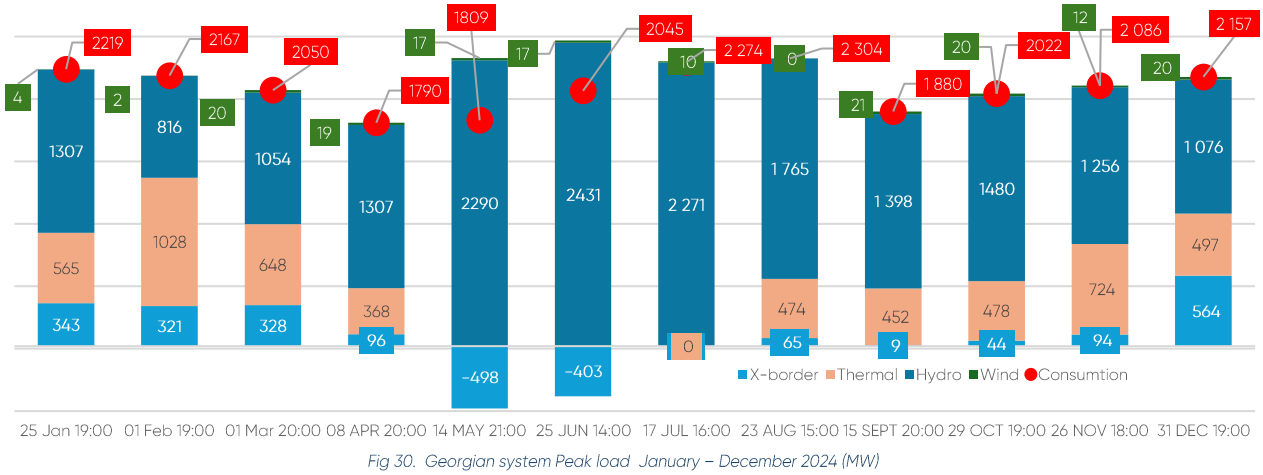


Fig 30. Georgian system Peak load January – December 2024 (MW)

2024 vs past five years trends

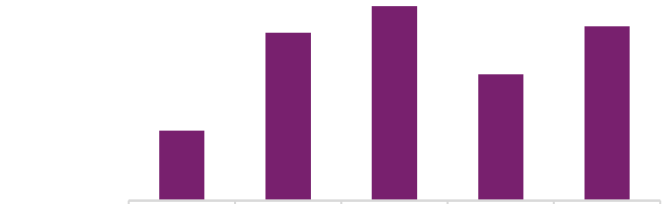
Domestic generation

Domestic power generation in Georgia in 2024 decreased compared to 2023 and 2022. However, it is still higher that in 2020 and 2021. Main part of power generated in the country is produced by RES sources, which are characterized by the high volatility both from year to year and month to month. Hydro power generation over last five years varied from 8,248.2 GWh in 2020 to 11,344.4 GWh in 2024. Thermal power plant generation also varied. However, their generation depend mainly on the level of domestic consumption and import volumes and availability.

	2020	2021	2022	2023	2024
TPP	2,820.8	2,379.6	3,387.7	3,446.5	2,812.2
WPP	90.8	83.4	87.5	86.1	77.6
HPP	8,248.2	10,182.1	10,771.4	10,863.2	11,344.4

Fig 31. Annual Domestic generation structure 2020-2024 (MWh)

Net domestic consumption is also characterized by volatility from year to year. In last two years consumption level decreased compared to 2022, but in 2024 the consumption increased again, but did not reach the level of 2022.



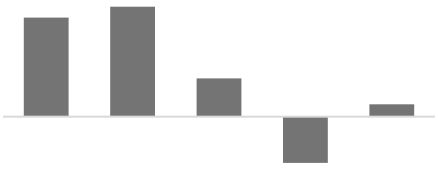
	2020	2021	2022	2023	2024
Consumption	12,136.4	13,729.9	14,165.4	13,053.4	13,834.4

Fig 33. Net power consumption (supply with DSO losses) ,2020-2024 (MWh)

The Enguri HPP, Georgia's largest power plant, generally exhibits stable annual generation trends. However, it is susceptible to hydrological variations, as demonstrated by a slight decrease in 2024 compared to the previous three years.

As an annual regulation dam power plant, Enguri HPP's monthly generation is influenced by the filling and emptying cycles of its reservoir. In 2024, a decrease in generation was observed towards the end of the year, which can likely be attributed to hydrological conditions as well as changes in the plant's operational regimes.

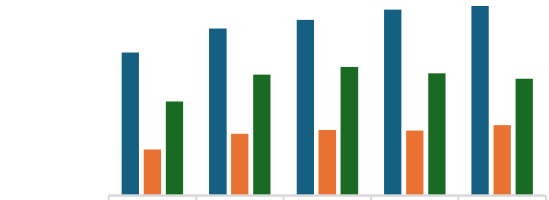
Net cross border exchanges during last five years was tending to import except in 2023, when Georgia was net-exporting country.
This trend has changed again in 2024, when Georgia imported more power than exported in annual timeframe.



	2020	2021	2022	2023	2024
X-B	1,456.3	1,615.3	562.1	-678.5	180.1

Fig 32. Net x-border exchanges 2020-2024 (MWh)

As mentioned Georgia is mainly hydro generation country. Bothe generation of Reservoir and RoR Hydro power plants have shown stable annual trends. RoR generated in 2024 the highest volume of the last five years, while dam HPPs generated their highest volume in 2022.



	2020	2021	2022	2023	2024
RoR	4,169.4	4,863.9	5,113.1	5,416.1	5,890.2
Other DAM	1,343.2	1,799.4	1,911.0	1,891.1	2,052.6
Enguri	2,735.7	3,518.7	3,747.3	3,556.0	3,401.6

Fig 34. Hydro power plants generation,2020-2024 (MWh)

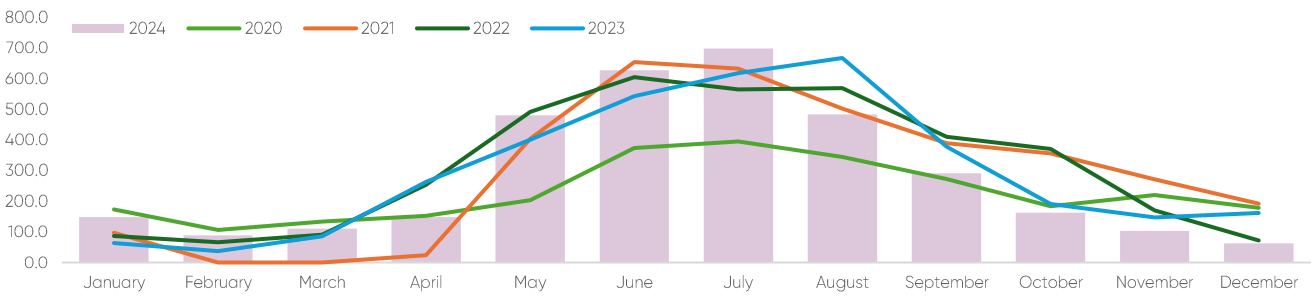


Fig 35. Enguri HPP monthly generation,2020-2024 (MWh)

POWER MARKET REPORT
Georgia

January – December 2024

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