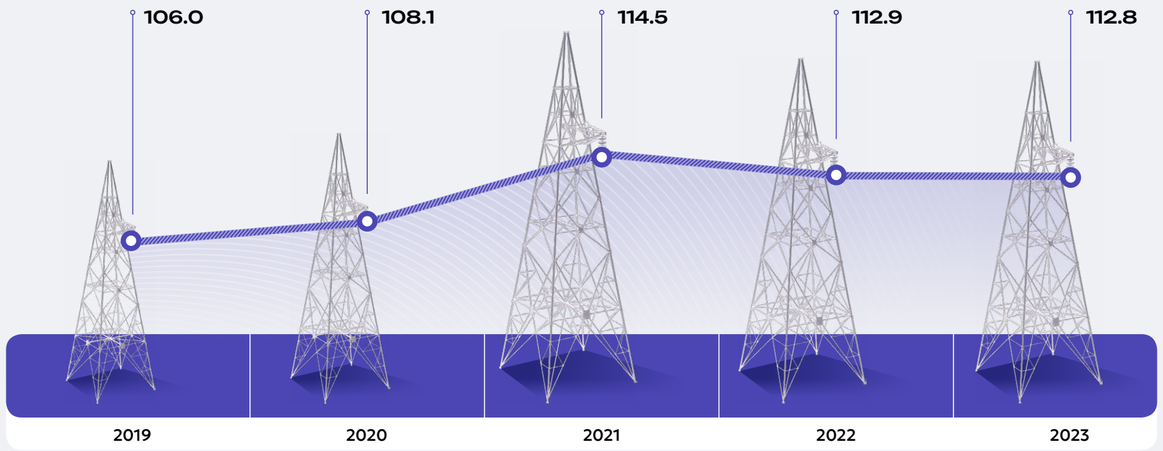
Electricity balance

Dynamics of electricity generation, billion kWh

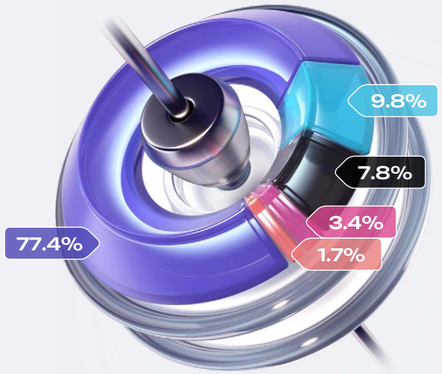


At the same time, an increase/decrease in output occurred at the following large power plants:

Changes in the amount of electricity generation

Power plants	The volume of increase/decrease in electricity generation	
	million kWh	%
SevKazEnergoPetropavlivsk JSC	▲ 703.6	43.8
GRES 'Topar' LLP	▲ 204.9	5.5
Balkhash CHPP Kazakhmys Energy LLP	▲ 100.9	117
CHPP-1 'Aluminum of Kazakhstan' JSC	▲ 32.1	1.7
Almaty CHPP-1 AIES JSC	▲ 22.3	5.5
Almaty CHPP-2 AIES JSC	▲ 8.8	0.3
'Zhambylskaya GRES' JSC	▼ 580.0	15.9
'Ekibastuz GRES-2 Station' JSC	▼ 343.6	5.7
Zhezkazgan TPP Kazakhmys Energy LLP	▼ 268.9	22.8
CHPP-3 Pavlodarenergo JSC	▼ 189.7	6.5
Ekibastuz GRES-1	▼ 178.4	0.8
Almaty CHPP-3 AIES JSC	▼ 115.3	10.8
CHPP-2 Arcelor Mittal Temirtau JSC	▼ 101.7	5.8
'EEC' JSC	▼ 71.0	0.5
PP AZF TNC Kazchrome (GTP)	▼ 4.9	0.6
'3-Energoortalyk' JSC	▼ 3.1	0.4

Structure of electricity production by UPS power plants of the Republic of Kazakhstan in 2023



Electricity generation in 2023 in the Republic of Kazakhstan amounted to

112,823.1

million kWh,

which corresponds to the output for the same period in 2022

The largest share of generation is TPP

77.4%

Electricity generation at thermal power plants decreased by 1,260.9 million kWh (1.4%). Production at GTPP increased by 83.2 million kWh (0.8%), and at RES (SPP, WPP, BSU) by 1,571.8 million kWh (38.2%).

Today, the renewable energy sector is a dynamically developing sector in the production of electricity in the Republic of Kazakhstan. Electricity generation from renewable energy facilities is increasing every year due to a set of measures for the implementation of renewable energy development programs in the Republic of Kazakhstan.

Following international trends in low-carbon development, in May 2013, the Republic of Kazakhstan adopted a Concept for the country's transition to a 'green economy' and approved a large-scale goal — by 2050, the share of alternative and renewable energy sources in the total energy balance should be 50%. Thus, according to the Concept of Transition to a 'green economy' and the Strategic Development Plan of the Republic of Kazakhstan until 2025, the share of renewable energy in total electricity production should be 3% by 2020, 6% by 2025, 10% by 2030 and 50% (alternative and renewable energy sources) in 2050.

According to the results of 2023 (according to the NDC SO), 148 renewable energy facilities with a total installed capacity of 2,883.9 MW operated in the Republic of Kazakhstan:

- 54 WPP facilities with a capacity of 1,411.3 MW;
- 42 SPP facilities with a capacity of 1,196.2 MW;
- 51 HPP facilities with a capacity of 275.3 MW;
- 1 bioelectric power plant with a capacity of 1.1 MW.

In 2023, 15 renewable energy facilities with a total capacity of 356.1 MW were put into operation.

By the end of 2023, the volume of electricity (according to the NDC SO) generated by renewable energy facilities amounted to 6.7 billion kWh (WPP — 3,805.6 million kWh; SPP — 1,881.7 million kWh; HPP — 1,028.2 million kWh; BioPP — 1.4 million kWh) or 6.0% of the total electricity production, which is a 25.3% increase compared to 2022.

In 2023, 15 RES facilities were commissioned with a total capacity of

356.1 MW

Information on the production of electric energy by renewable energy facilities for 2023

Indicators	Units of measurement	For the year 2023
Installed capacity including:	**MW**	**2,883.9**
- wind power plants	MW	1,411.3
- small HPP	MW	275.3
- solar power plants	MW	1,196.2
- bioelectric power plants	MW	1.1
Electricity generation including:	**million kWh**	**6,716.9**
- wind power plants	million kWh	3,805.6
- small HPP	million kWh	1,028.2
- solar power plants	million kWh	1,881.7
- bioelectric power plants	million kWh	1.4
The share of renewable energy generated in the total volume of electric energy production	**%**	**6.0**

Electricity consumption by the Republic of Kazakhstan in the reporting period of 2023 increased by 2,123.0 million kWh (1.9%) compared to the same period of 2022 and amounted to 115,067.6 million kWh. In the Northern Zone, electricity consumption increased by 896.7 million kWh (1.2%), in the Southern Zone by 1,090.6 million kWh (4.2%), in the Western Zone by 135.7 million kWh (0.9%).

In comparison with 2022, the changes in electricity consumption were as follows:

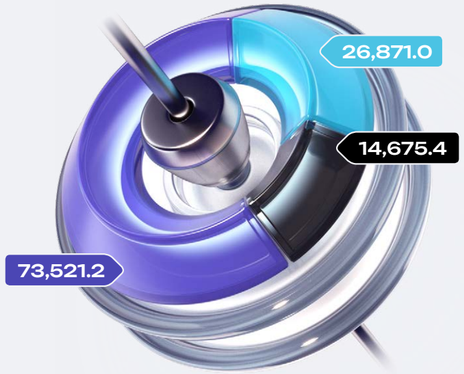
The increase in electricity generation by renewable energy facilities in 2023 compared to 2022 is

25.3%

The volume of electricity consumption in 2023 compared to 2022

Consumers	The volume of increase/decrease in electricity consumption	
	million kWh	%
Kaz. Electrolysis Plant JSC	▲ 179.3	5.0
Kazzinc LLP	▲ 35.6	1.3
AMOZ LLP	▲ 31.1	4.3
Kazakhmys Corporation LLP	▲ 4.3	0.3
JSC Aluminum of Kazakhstan JSC	▲ 2.6	0.3
Arcelor MittalTemirtau	▼ 443.2	12.1
TNK Kazchrome (AZF) JSC	▼ 109.7	3.3
Sokolovsko-Sarbayskoye GPO JSC	▼ 78.0	5.7
Kazakhmys Smelting LLP	▼ 27.8	2.4
AKSU FERROALLOYS PLANT	▼ 23.6	0.5
UKTMP JSC	▼ 19.9	2.8

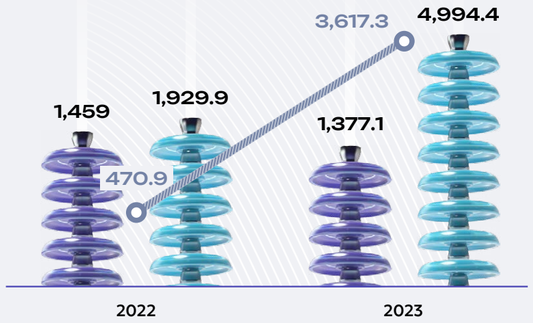
Structure of electricity consumption by zones, million kWh



Northern zone Southern zone Western zone

In 2023, in comparison with 2022, the maximum increase in electricity consumption is noted in the Almaty region by 513.3 million kWh (4.5%), the Turkestan region by 429.9 million kWh (7.2%), the Akmola region by 417.1 million kWh (3.9%), the Atyrau region by 383.7 million kWh (5.7%).

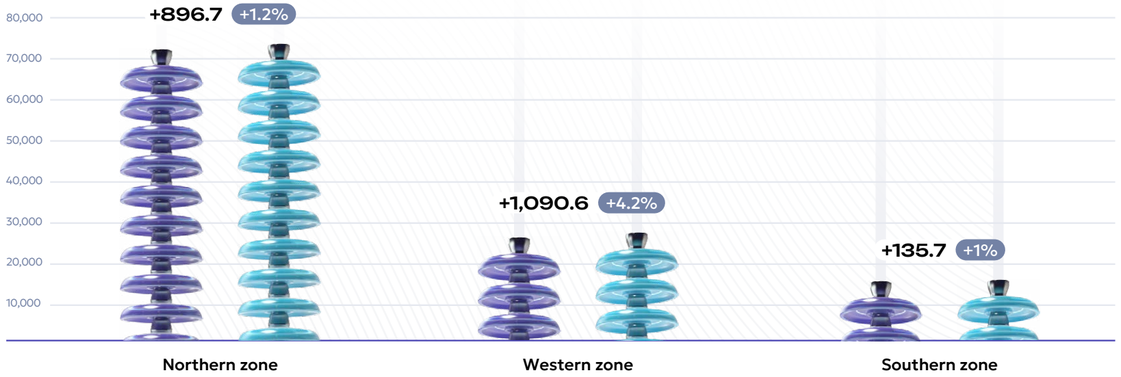
Balance-flow of electricity with the Russian Federation, million kWh



Export of electricity Import of electricity
Balance-flow of electricity

The flow balance with Central Asia is 1,372.8 million kWh (in 2022 from CA 392.2 million kWh). At the same time, exports to Central Asia amounted to 1,441.0 million kWh (in 2022 — 696.6 million kWh), imports from Central Asia — 68.2 million kWh (in 2022 — 304.4 million kWh).

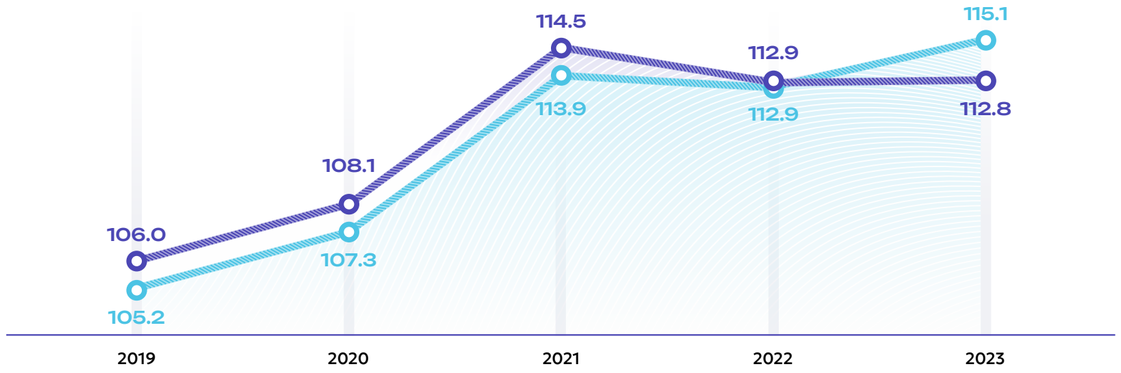
Dynamics of electricity consumption by zones for 2022-2023, million kWh



2022 2023

In 2023, electricity consumption exceeded production by 2,244.5 million kWh.

Dynamics of electricity production/consumption in the period 2019-2023, billion kWh



Production Consumption

During the reporting period, the balance of electricity flows with the Russian Federation amounted to 3,617.3 million kWh (in 2022 with the Russian Federation — 470.9 million kWh). At the same time, the export of electricity to the Russian Federation is 1,377.1 million kWh (in 2022 — 1,459.0 million kWh). Electricity imports from the Russian Federation — 4,994.4 million kWh (in 2022 — 1,929.9 million kWh). Exports and imports are given taking into account the volumes of balancing electricity with the Russian Federation.