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**MARKET ANALYSIS OF THE POWER INDUSTRY OF KAZAKHSTAN**

**SEPTEMBER 2022**

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# **Electricity generation in the UES of Kazakhstan**

According to the System Operator, power plants of the Republic of Kazakhstan in January-September 2022 generated 82,216.8 million kWh of electricity, which is
1,636.1 million kWh or 2% less than the same period in 2021. A decrease in generation was observed in the Northern zone of the UES of Kazakhstan.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Zone** | **Generation type** | **January-September** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **Total** | **83,852.9** | **82 216.8** | ***-1,636.1*** | ***-2.0%*** |
| *TPP* | *66,331.1* | *63,993.7* | *-2,337.4* | *-3.5%* |
| *GTES* | *7,798.8* | *8,144.8* | *346.0* | *4.4%* |
| *HPS* | *7,161.5* | *7,031.5* | *-130.0* | *-1.8%* |
| *WES* | *1,184.7* | *1563.0* | *378.3* | *31.9%* |
| *SES* | *1374.3* | *1483.6* | *109.3* | *8.0%* |
| *BSU* | *2.5* | *0.2* | *-2.3* | *-92.0%* |
| 1 | **Northern** | **Total** | **64,402.6** | **60,649.3** | ***-3,753.3*** | ***-5.8%*** |
| *TPP* | *56,260.8* | *52,692.6* | *-3,568.2* | *-6.3%* |
| *GTES* | *2213* | *2158.1* | *-54.9* | *-2.5%* |
| *HPS* | *4944.9* | *4,519.4* | *-425.5* | *-8.6%* |
| *WES* | *534.5* | *807.4* | *272.9* | *51.1%* |
| *SES* | *446.9* | *471.6* | *24.7* | *5.5%* |
| *BSU* | *2.5* | *0.2* | *-2.3* | *-92.0%* |
| 2 | **South** | **Total** | **8,851.7** | **10,708.1** | ***1,856.4*** | ***21.0%*** |
| *TPP* | *5,092.3* | *6434.2* | *1341.9* | *26.4%* |
| *GTES* | *194.5* | *218.7* | *24.2* | *12.4%* |
| *HPS* | *2216.6* | *2512.1* | *295.5* | *13.3%* |
| *WES* | *423.5* | *533.8* | *110.3* | *26.0%* |
| *SES* | *924.8* | *1,009.3* | *84.5* | *9.1%* |
| 3 | **Western** | **Total** | **10,598.6** | **10,859.4** | ***260.8*** | ***2.5%*** |
| *TPP* | *4 978* | *4,866.9* | *-111.1* | *-2.2%* |
| *GTES* | *5391.3* | *5,768.0* | *376.7* | *7.0%* |
| *WES* | *226.7* | *221.8* | *-4.9* | *-2.2%* |
| *SES* | *2.6* | *2.7* | *0.1* | *3.8%* |

# *1.1 Electricity generation by regions of the Republic of Kazakhstan*

In January-September 2022, compared to the same period in 2021, electricity generation increased significantly in Atyrau, Zhambyl, West Kazakhstan, Kostanay, Kyzylorda and Turkestan regions. A sharp increase in electricity production in the Zhambyl region by 1,365.2 mln kWh or 70% due to the inclusion of an additional two blocks at the Zhambyl GRES in order to cover the shortage of electricity in the Southern zone.

At the same time, a decrease in electricity generation was observed in Akmola , Aktobe, Almaty , East Kazakhstan, Karaganda, Pavlodar and North Kazakhstan regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-September** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| *1* | *Akmola* | *3,857.40* | *3,743.4* | *-114.0* | *-3.0%* |
| *2* | *Aktobe* | *2,729.70* | *2647.4* | *-82.3* | *-3.0%* |
| *3* | *Almaty* | *5,138.90* | *5,000.6* | *-138.3* | *-2.7%* |
| *4* | *Atyrau* | *5,126.90* | *5371.5* | *244.6* | *4.8%* |
| *5* | *East Kazakhstan* | *6,875.80* | *6296.2* | *-579.6* | *-8.4%* |
| *6* | *Zhambyl* | *1951.40* | *3316.6* | *1365.2* | *70.0%* |
| *7* | *West Kazakhstan* | *1,758.80* | *1,798.9* | *40.1* | *2.3%* |
| *8* | *Karaganda* | *11,530.50* | *7485.4* | *-4,045.1* | *-35.1%* |
| *9* | *Kostanay* | *735.9* | *829* | *93.1* | *12.7%* |
| *10* | *Kyzylorda* | *457.5* | *472.8* | *15.3* | *3.3%* |
| *11* | *Mangistau* | *3,712.90* | *3 689* | *-23.9* | *-0.6%* |
| *12* | *Pavlodar* | *36,613.50* | *35,193.2* | *-1,420.3* | *-3.9%* |
| *13* | *North Kazakhstan* | *2059.80* | *1,088.3* | *-971.5* | *-47.2%* |
| 14 | *Turkestan* | *1303.90* | *1365.8* | *61.9* | *4.7%* |
| *15* | *Abai* | *-* | *263.5* | *-* | *-* |
| *16* | *Zhetysuskaya* | *-* | *552.3* | *-* | *-* |
| 17 | *Ulytauskaya* | *-* | *3102.9* | *-* | *-* |
|  | **Total for Kazakhstan** | **83,852.90** | **82 216.8** | **-1,636.1** | ***-2.0%*** |

# *1.2 Electricity generation by energy producing organizations* *of Samruk-Energy JSC*

The volume of electricity production by energy producing organizations of Samruk-Energy JSC for January-September 2022 amounted to 25,564.6million kWh . The decrease in electricity generation compared to the same period in 2021 amounted to 688.3 million kWh or 2.6 %.

The decrease is observed at Ekibastuzskaya GRES-2 LLP, Shardarinskaya HPP JSC and First Wind Power Plant LLP .

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Name** | **2021** | **2022** | **Δ 2022/2021** |
| **January- September** | **share in Kazakhstan, %** | **January- September** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **"Samruk-Energy" JSC** | **26252.9** | **31.3%** | **25,564.6** | **31.1%** | **-688.3** | **-2.6%** |
| *1* | *AlES JSC* | *3649.3* | *4.4%* | *3812.3* | *4.6%* | *163.0* | *4.5%* |
| *2* | *"Ekibastuz GRES-1" LLP* | *16398.4* | *19.6%* | *16426.3* | *20.0%* | *27.9* | *0.2%* |
| *3* | *"Ekibastuz GRES-2" JSC* | *5071.5* | *6.0%* | *4034.3* | *4.9%* | *-1,037.2* | *-20.5%* |
| *4* | *"Shardara HPP" JSC* | *398.2* | *0.5%* | *389.8* | *0.5%* | *-8.4* | *-2.1%* |
| *5* | *“Moynakskaya HPP” JSC* | *622.9* | *0.7%* | *793.5* | *1.0%* | *170.6* | *27.4%* |
| *6* | *“Samruk-Green Energy” LLP* | *14.9* | *0.0%* | *14.9* | *0.0%* | *0.00* | *0.0%* |
| *7* | *WPP Shelek "Energy Semirechye" LLP* |  |  | *33.1* | *0.0%* |  |  |
| *8* | *"First wind power plant" LLP* | *97.7* | *0.1%* | *93.5* | *0.1%* | *-4.2* | *-4.3%* |

#

# *1.3 Shares of energy holdings and large energy producing organizations*

*in power generation in Kazakhstan*

As can be seen from the graph below, the share of Samruk-Energy JSC in the electricity market of Kazakhstan remains the leader and amounts to 31.1%.





**Kazakhstan**

**82 216,8**

**mln. kWh**

**Others**

# **Electricity consumption in the UES of Kazakhstan**

The industrial production index (hereinafter referred to as IPI) in January-September 2022 compared to January-September 2021, amounted to 102.1%. An increase in production volumes was recorded in 15 regions of the republic, a decrease is observed in Zhetisu, Kostanay, Kyzylorda, Pavlodar and Turkestan regions.

**Change in industrial production indices**

*in % to the corresponding period of the previous year, increase +, decrease -*

In the Zhambyl region, due to the growth in the production of sugar, sausages, diesel fuel, gold in doré alloy, IPI amounted to 112.3%.

In the city of Almaty, due to the growth in the production of vegetable oil, chocolate, soft drinks, cars and trucks, the IPI amounted to 109%.

In the Abay region, the IPI amounted to 108.9% due to the growth in the extraction of copper and gold ores, the production of copper concentrates, and refined copper.

In the Akmola region, due to the increase in the extraction of gold-bearing ores, the production of gold-bearing concentrates, gold in dore alloy, IPI amounted to 108.1%.

In the city of Shymkent, due to the increase in the production of gasoline, kerosene, diesel fuel, heating oil, medicines, the IPI amounted to 106.7%.

In the Almaty region, the IPI amounted to 106.2% due to an increase in the production of beer, soft drinks and cigarettes.

In the Ulytau region, the IPI amounted to 105.3% due to the growth in the extraction of non-agglomerated iron and lead-zinc ores, the production of blister and refined copper, and copper wire.

In the East Kazakhstan region, the IPI amounted to 105% due to the growth in the production of refined gold and silver, refined copper.

In the Aktobe region, the IPI amounted to 101.8% due to an increase in the production of crude oil, copper-zinc and chromium ores, and ferrochromium.

In the city of Astana, the IPI amounted to 101.7% due to the growth in the production of prefabricated structural elements for construction, refined gold.

In the Mangistau region, the IPI amounted to 101.5% due to an increase in the production of mortars, prefabricated structural elements for construction, pumps for pumping liquids, and oilfield equipment.

In the North Kazakhstan region, due to the growth in the extraction of uranium and thorium ores, the production of flour, ready-made animal feed, drinking alcohol, combines, IPI amounted to 101.3%.

In the Karaganda region, the growth of IPI amounted to 101.2% due to an increase in the production of hot-rolled bars and rods from steel, refined gold and silver, blister and refined copper.

In West Kazakhstan IPI amounted to 100.8% due to the growth in the production of ready-mixed concrete, steel pipes.

In the Atyrau region, the IPI amounted to 100.2% due to an increase in the production of gasoline and diesel fuel.

In the Kyzylorda region, the IPI amounted to 98.5% due to a reduction in the production of crude oil and the production of hydrocarbon liquefied gases.

In the Turkestan region, due to a decrease in the extraction of uranium and thorium ores, the IPI amounted to 97.4%.

In the Pavlodar region, the IPI amounted to 97.4% due to a decrease in the extraction of copper ores and concentrates, the production of gasoline, diesel fuel, raw aluminum, ferrochromium, and electricity.

In the Kostanay region, the IPI amounted to 96.5% due to a decrease in the production of non-agglomerated iron ores, iron ore pellets and concentrates.

In the Zhetisu region, the IPI amounted to 95.3% due to a decrease in the production of metal structures, electric batteries.

# *2.1 Electricity consumption by zones and regions*

According to the System Operator, in January- September 2022, there was a decrease in the dynamics of electricity consumption of the republic in comparison with the same indicators in 2021 by 948.9 million kWh or 1.1%. Thus, in the western and southern zones of the republic, consumption increased by 2.1% and 0.6%, respectively.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January- September** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **83193.1** | **82244.2** | **-948.9** | **-1.1** |
| *1* | *Northern zone* | **54057** | **52764.6** | **-1292.4** | **-2.4** |
| *2* | *Western zone* | **10637.6** | **10862.0** | **224.4** | **2.1** |
| *3* | *Southern zone* | **18498.5** | **18617.6** | **119.1** | **0.6** |
|  | ***incl .by regions*** |   |  |  |  |
| *1* | *East Kazakhstan* | *6893.1* | *7058.7* | *165.6* | *2.4* |
| *2* | *Karaganda* | *13906.2* | *7937.3* | *-5968.9* | *-42.9* |
| *3* | *Akmola*  | *7314.6* | *7523.0* | *208.4* | *2.8* |
| *4* | *North Kazakhstan* | *1253.6* | *1145.5* | *-108.1* | *-8.6* |
| *5* | *Kostanay*  | *3510.8* | *3362.3* | *-148.5* | *-4.2* |
| *6* | *Pavlodar* | *16108.2* | *14260.8* | *-1847.4* | *-11.5* |
| *7* | *Atyrau*  | *4867.2* | *4968.7* | *101.5* | *2.1* |
| *8* | *Mangistau*  | *3900.6* | *3931.6* | *31.0* | *0.8* |
| *9* | *Aktobe* | *5070.4* | *5118.7* | *48.3* | *1.0* |
| *10* | *West Kazakhstan* | *1869.8* | *1961.6* | *91.8* | *4.9* |
| *11* | *Almaty*  | *8947.4* | *8213.5* | *-733.9* | *-8.2* |
| *12* | *Turkestan* | *4198.8* | *4379.7* | *180.9* | *4.3* |
| *13* | *Zhambyl*  | *3928.9* | *3631.5* | *-297.4* | *-7.6* |
| *14* | *Kyzylorda* | *1423.5* | *1387.3* | *-36.2* | *-2.5* |
| *15* | *Ulytau* | *-* | *5949.1* | *-* | *-* |
| *16* | *Abai* | *-* | *409.3* | *-* | *-* |
| *17* | *Zhetysusky* | *-* | *1005.6* | *-* | *-* |

# *2.2 Electricity consumption by consumers of energy holdings and large energy producing organizations*

In January-September 2022, there is a decrease in electricity consumption by consumers energy holdings and large energy-producing organizations.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Name** | **January-September** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Total** | **35,879.4** | **31,583.6** | **6414.3** | **-12.0%** |
| *1.* | *ERG* | *11,212.8* | *11,189.1* | *-23.8* | *-0.2%* |
| *2.* | *Kazakhmys Corporation LLP* | *5,745.6* | *2825.1* | *-2,920.5* | *-50.8%* |
| *3.* | *Kazzinc LLP*  | *2217.3* | *1481.1* | *-736.3* | *-33.2%* |
| *4.* | *JSC Arcelor Mittal Temirtau"* | *2,747.1* | *2697.7* | *-49.5* | *-1.8%* |
| *5.* | *KKS LLP* | *4639.9* | *5003.0* | *363.2* | *7.8%* |
| *6.* | *CAEPCO JSC* | *3,941.0* | *3,979.4* | *38.4* | *1.0%* |
| *7.* | *Zhambyl GRES* | *1,594.5* | *701.6* | *-892.9* | *-56.0%* |
| *8.* | *Oil and gas enterprises* | *3,781.2* | *3,706.7* | *-74.5* | *-2.0%* |

In January-September 2022, there is an increase in electricity consumption by the companies of Samruk-Energy JSC by 80.8 million kWh or by 1.4% compared to the same indicators for 2021.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **No.** | **Name** | **January-September** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **"Samruk-Energy" JSC** | **5834.20** | **5915.0** | **80.8** | **1.4%** |
| *1.* | *"Bogatyr-Komir" LLP* | *218.8* | *198.9* | *-19.9* | *-9.1%* |
| *2.* | *“Alatau Zharyk Companies” JSC*  | *685.0* | *721.5* | *36.5* | *5.3%* |
| *3.* | *“AlmatyEnergoSbyt” LLP* | *4930.4* | *4994.5* | *64.2* | *1.3%* |

*2.3 Electricity consumption by large consumers in Kazakhstan*

In January-September 2022, compared to the same period in 2021, electricity consumption by large consumers decreased by 552 million kWh or 2.2%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Consumer** | **January-September** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| *1* | Arcelor Mittal Temirtau" JSC | *2804.8* | 2,753.6 | *-51.2* | *-1.8* |
| *2* | AZF ( Aksuysky ) "TNK Kazchrome " JSC | *3903.6* | 3,855.7 | *-47.8* | *-1.2* |
| *3* | Kazakhmys Smelting LLP | *810.9* | *885.8* | *74.9* | *9.2* |
| *4* | Kazzinc LLP | *2060.8* | *2015.3* | *-45.5* | *-2.2* |
| *5* | "Sokolovsko-Sarbayskoye GPO" JSC | *1,197.8* | *1,041.5* | *-156.3* | *-13.0* |
| *6* | Kazakhmys Corporation LLP | *964.0* | *984.8* | *20.9* | *2.2* |
| *7* | AZF (Aktobe) "TNK Kazchrome" JSC | *2416.2* | *2452.5* | *36.3* | *1.5* |
| *8* | “Channel them. Satpaev" RSE | *265.1* | *281.5* | *16.4* | *6.2* |
| *9* | Kazphosphate LLP | *1491.5* | *1532.1* | *40.6* | *2.7* |
| *10* | NDFZ(part of the structure of Kazphosphate LLP) JSC | *1264.5* | *1295.6* | *31.1* | *2.5* |
| *11* | "Taraz Metallurgical Plant" LLP | *223.6* | *30.3* | *-193.3* | *-86.5* |
| *12* | "Ust-Kamenogorsk titanium -magnesium plant" JSC | *501.0* | *533.4* | *32.4* | *6.5* |
| *13* | Tengizchevroil LLP  | *1354.5* | *1406.3* | *51.8* | *3.8* |
| *14* | PAS (Pavlodar Aluminum Smelter) JSC | *712.1* | *726.1* | *13.9* | *2.0* |
| *15* | "KEZ" (Kazakhstan electrolysis plant) JSC | *2823.3* | *2681.0* | *-142.3* | *-5.0* |
| *16* | "KEGOC" JSC | *4,076.0* | *3600.8* | *-475.2* | *-11.7* |
| **Total** | ***25,053.0*** | ***25,605.0*** | ***-552.0*** | ***-2.2*** |

# *Export-import of electrical energy*

In order to balance the production and consumption of electricity in January-September 2022, exports to the Russian Federation amounted to 902.2 million kWh, imports from the Russian Federation 767.8 million kWh.

Including export of JSC "KEGOC" to the Russian Federation 870.7 million kWh, import of electricity for the reporting period in the amount of 639.2 million kWh.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **January - September** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| **Export of Kazakhstan** | ***-1961.3*** | ***-1325.9*** | ***635.5*** | ***-32.4%*** |
| *in Russia* | *-857.5* | *-902.2* | *-44.8* | *5.2%* |
| *in the IPS of Central Asia* | *-1103.9* | *-423.6* | *680.2* | *-61.6%* |
| **Import of Kazakhstan** | ***1262.5*** | ***1072.2*** | ***-190.3*** | ***-15.1%*** |
| *From Russia* | ***305.2*** | ***304.4*** | ***-0.8*** | ***0%*** |
| **Balance- flow "+" deficit, "-" excess** | ***-698.8*** | ***-253.7*** | ***445.2*** | ***-63.7%*** |

# **Coal**

According to the Bureau of National Statistics, in January-September 2022, 83,583.5 thousand tons of coal were mined in Kazakhstan, which is 5.7% more than in the same period in 2021 (79,097.6 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Region** | **January- September** | **Δ, thousand tons** | **Δ, %** |
| **2021** | **2022** |
| 1 | *Pavlodar* | *47,941.7* | *50,269.7* | *2328* | *4.9%* |
| 2 | *Karaganda* | *25,138.1* | *24,736.1* | *402* | *1.6%* |
| 3 | *East Kazakhstan* | *6310.6* | *6,004.8* | *305.8* | *5.1%* |
|  | **Total for the Republic of Kazakhstan** | **83,583.5** | **79,097.6** | **4485.9** | **5.7%** |

In January - September 2022, Bogatyr Komir LLP produced 31,836.7 thousand tons, which is 3.5% less than in the corresponding period of 2021 (32,991.5 thousand tons) .

The volume of coal sold in January-September 2022 amounted to 31,653.2 thousand tons, of which 23,811.2 thousand tons went to the domestic market of the Republic of Kazakhstan, which is 8.1% less than in the same period in 2021 (25,917, 5 thousand tons) and for export (Russia) - 7,842 thousand tons, which is 10% more than in the corresponding period of 2021 (7,128.5 thousand tons).

According to the indicators for January-September 2022, compared to the same indicators in 2021, Bogatyr Komir LLP has a decrease in coal sales by 1,392.7 thousand tons or 4.2%.

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-September** | **Δ,** **thousand tons** | **Δ, %****2022/2021** |
| **2021** | **2022** |
| **Total to the domestic market of the Republic of Kazakhstan** | **25,917.5** | **23,811.2** | **-2,106.3** | **-8.1%** |
| **Total for export to Russia** | **7,128.5** | **7 842** | **713.6** | **10%** |

#

# **Renewable energy sources**

# *RES indicators in Kazakhstan*

According to Ministry of Energy of the Republic of Kazakhstan as of September 2022, totally there are 14 4 renewable energy facilities in Kazakhstan 2,333.2 MW (wind farm - 893.9 MW; SES - 1,149.78; Small HPPs - 280.2 ; BioPP - 9.29 MW).

10 facilities have been put into operation :

- SES 4.95 MW by "AlmatyEnergoProject" LLP;

- SPP "Aisha" 50 MW by "AEC Asa" LLP;

- SPP "Makpal" 4.95 MW by "Engineering Arena" LLP;

- WPP Shelek 50MW “Zheruyik Energy” LLP;

- WPP Shelek 60 MW by "Energy Semirechye" LLP;

- VES Abai-1 100 MW LLP;

- SPP Balkhash 50 MW "KAZ GREEN ENERGY" (as part of PMC) LLP;

- Net consumer;

- SES Otrar by "Cascade NRG" LLP;

- SES Zhalagash by "Nomad Solar" LLP.

According to the System Operator, the volume of electricity supply in the EU of the Republic of Kazakhstan by renewable energy facilities (SPP, WPP, BGS, small hydropower plants) of the Republic of Kazakhstan for January- September 2022 amounted to 3,814.9 million kWh. Compared to January -September 2021 (3,200.4 million kWh ), the increase was 614.5 million kWh or 18.6 %. An increase in electricity generation is observed at wind farms, solar power plants and small hydropower plants compared to the same period in 2021, while biogas generation decreased compared to last year.

million kWh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ, million kWh** | **Δ, %** |
| **January September** | **share in Kazakhstan, %** | **January September** | **share in Kazakhstan, %** |
| **1** | **Production in the Republic of Kazakhstan** | **83852.9** | **100%** | **82216.8** | **100%** | **-1636.1** | **-2.0%** |
| **2** | **RES generation in Kazakhstan** | **3200.4** | **3.8%** | **3814.9** | **4.6%** | **614.5** | **19.2%** |
| **3** | **RES generation, incl . by zones** | **share in the respective zone** |
|  | *Northern zone* | *1105.4* | *1.7%* | *1429.2* | *2.4%* | *323.8* | *29.3%* |
|  | *Southern zone* | *1865.7* | *21.1%* | *2161.2* | *20.2%* | *295.5* | *15.8%* |
|  | *Western zone* | *229.3* | *2.2%* | *224.5* | *2.1%* | *-4.8* | *-2.1%* |
| **4** | **RES generation, incl . by zones** | **share in RES of the Republic of Kazakhstan, %** |
|  | *Northern zone* | *1105.4* | *34.5%* | *1429.2* | *37.5%* | *323.8* | *29.3%* |
|  | *Southern zone* | *1865.7* | *58.3%* | *2161.2* | *56.7%* | *295.5* | *15.8%* |
|  | *Western zone* | *229.3* | *7.2%* | *224.5* | *5.9%* | *-4.8* | *-2.1%* |
| **5** | **RES generation, incl . by type** | **share in RES of the Republic of Kazakhstan, %** |
|  | *SES* | *1374.3* | *42.9%* | *1483.6* | *38.9%* | *109.3* | *8.0%* |
|  | *WES* | *1184.7* | *37.0%* | *1563.0* | *41.0%* | *378.3* | *31.9%* |
|  | *Small HPPs* | *638.9* | *20.0%* | *768.1* | *20.1%* | *129.2* | *20.2%* |
|  | *BSU* | *2.5* | *0.1%* | *0.2* | *0.0%* | *-2.3* | *-92.0%* |

# *The role of Samruk-Energy JSC in the production of clean electricity*

Electricity generation by renewable energy facilities of Samruk-Energy JSC (SPP, WPP and small HPPs) for January-September 2022 amounted to 282.9 million kWh , which is 16.8% higher compared to the same period in 2021 (242.2 million kWh ).

The share of renewable energy electricity of Samruk-Energy JSC in January-September 2022 amounted to 7.4% of the volume of electricity generated by renewable energy facilities in the Republic of Kazakhstan, while in January-September 2021 this figure was 7.6%. The decrease in the share of renewable energy sources of Samruk-Energy JSC in the generation of renewable energy sources in the Republic of Kazakhstan in 2022 is associated with an increase in the generation of electricity from renewable energy sources in the Republic of Kazakhstan.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ, million kWh** | **Δ, %** |
| **January September** | **share in Kazakhstan, %** | **January September** | **share in Kazakhstan,%** |
|  | **RES S-E, including:** | **242.2** | **7.6%** | **282.9** | **7.4%** | **40.7** | **16.8%** |
| 1 | *Cascade of small HPPs of AlES JSC 43.7 MW* | *129.6* | *4.0%* | *141.4* | *3.7%* | ***11.8*** | ***9.1%*** |
| 2 | *Samruk - Green LLP Energy » SPP 2MW + SPP 1MW + SPP 0.4MW* | *4.3* | *0.1%* | *4.4* | *0.1%* | ***0.1*** | ***2.3%*** |
| 3 | *Samruk - Green Energy LLP WPP Shelek 5 MW* | *10.6* | *0.3%* | *10.5* | *0.3%* | ***-0.1*** | ***-0.9%*** |
| 4 | *First Wind Power Plant LLP WPP 45 MW* | *97.7* | *3.1%* | *93.5* | *2.5%* | ***-4.2*** | ***-4.3%*** |
| 5 | *Energy Semirechye LLP WPP Shelek 60 MW* | *-* | *-* | *33.1* | *-* | ***-*** | ***-*** |

# **International Relations**

# *5.1 Status of formation* *of the Common Electricity Market of the Eurasian Economic Union*

The common electricity market of the Eurasian Economic Union is planned to be formed by integrating the national electricity markets of Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia. The EAEU Member States are gradually forming a common electric power market of the Union on the basis of parallel operating electric power systems, taking into account the priority provision of electric energy to domestic consumers of the Member States.

At the same time, the balance of economic interests of producers and consumers of electric energy, as well as other subjects of the EAEU OER, will be observed.

On May 29, 2019, as part of the celebration of the fifth anniversary of the signing of the Treaty, the Supreme Council signed an international agreement on the formation of a common electric power market of the Union in the form of a Protocol on amendments to the Treaty on the Eurasian Economic Union dated May 29, 2014 (in terms of the formation of a common electric power market of the Eurasian Economic Union).

In addition, in accordance with paragraph 42 of the above international agreement, on December 20, 2019, the Supreme Council adopted Decision No. 31 “On the plan of measures aimed at the formation of a common electric power market of the Eurasian Economic Union”, which establishes, among other things, the terms for approval and entry into force of the rules for the functioning of a common electric power market of the Union, as well as other acts provided for by the said Protocol.

Reference :

*The Protocol defines the legal framework and principles for the formation, functioning and development of the OER, establishes the areas that will be regulated by the rules for the functioning of the OER, and also empowers the Intergovernmental Council and the Council of the Commission to approve acts regulating the OER.*

In 2022, two meetings of the Advisory Committee on the Electricity Industry under the EEC Board were held ( 17th meeting on January 19, 18th meeting on
August 24-25 ), 16 meetings of the Subcommittee on the formation of the EAEU ERA of the Advisory Committee on the Electricity Industry under the EEC Board
(79th meeting 13-14 January, 80th meeting 26-27 January, 81st meeting 11 February, 82nd meeting 25 February, 83rd meeting 17-18 March, 84th meeting 31 March, 85th meeting 8
April 86th meeting 15 April 87th meeting 26 April 88th meeting
17-18 May 89th meeting 90th meeting 30 June 91st meeting 92nd meeting
22 July 93rd meeting on 29 July, 94th meeting on 10 August), and also on
4 March

2022, the Kazakhstani and Russian parties took part in a working meeting on the procedure for registering free bilateral agreements for mutual trade in electricity on the common electricity market of the Eurasian Economic Union.

During the meetings discussed:

- timing of processes at the Union's OER;

- the possibility of setting prices (tariffs) for services for trade and non-trade interstate transmission of electric energy (capacity) for the planned year, the terms for publishing these prices (tariffs) and the terms for informing about adjusted prices (tariffs) during the year;

- reduction (zeroing) of hourly volumes of deliveries under fixed-term contracts in case of revealing the technical unfeasibility of electric energy balance flows through interstate sections (internal sections).

At the 17th meeting, the following issues were considered:

1. On the uncoordinated provisions of the draft rules for mutual trade in electric energy on the common electric power market of the Union (hereinafter referred to as the rules for mutual trade), including:

definition of the concept of "commercial accounting of electric energy";

exclusion (preservation) from the draft rules of mutual trade of the provision on the need for compensation by suppliers and buyers in the domestic wholesale electricity market in accordance with the legislation of the relevant Member State for deviations in the actual hourly volumes of production and consumption (supply) of the subjects of the internal wholesale electricity markets from the planned values determined in including taking into account transactions in the common electricity market of the Eurasian Economic Union (clause 8 of the draft rules for mutual trade);

procedure for registration of free bilateral agreements (proposal of the Russian Federation) (paragraphs 38, 40, 41 of the draft rules for mutual trade);

exclusion (preservation) from the draft rules of mutual trade of the provision on external balancing as one of the components of the magnitude of hourly deviations in the balance of electricity flows in the interstate section for each hour of the billing period (paragraphs 89, 90 of the draft rules of mutual trade);

the exclusion of paragraph 93, which contains the principle of equal prices for both the purchase and sale of electricity within the allowable range established in the agreements on parallel operation, if there is paragraph 94 of the draft rules for mutual trade (the proposal of the Russian side).

1. On the inconsistent provisions of the draft rules for access to services for the interstate transmission of electric energy (capacity) within the framework of the Eurasian Economic Union (hereinafter referred to as the access rules), including:

clarification of the condition “the person who applied for the conclusion of such an agreement has unfulfilled obligations to pay for the service of non-trade interstate transmission of electric energy (capacity)”, under which an organization authorized for non-trade interstate transmission has the right to refuse to conclude an non-trade interstate transmission agreement with the phrase “in with regard to volumes that do not cause disagreement between the parties under previously concluded agreements” (paragraph 17 of the draft access rules);

exclusion (preservation) from the draft access rules of the provision that the interstate transmission of electric energy (capacity) in the interests of electric power industry entities of third states (deliveries to third states and between third states, transfer from one part of a third state to another part of it) is regulated in accordance with paragraph 2 of the Protocol on the Common Electricity Market of the Union (paragraph 34 of the draft access rules).

Work on the formation of a common electricity market of the Eurasian Economic Union continues.

# *5.2 Overview of the media in the CIS countries*

*(according to information from the website of the CIS EES Executive Committee)*

**Kazakhstan**

**KEGOC issued the first green bonds.** On September 8, 2022, the Agency of the Republic of Kazakhstan for Regulation and Development of the Financial Market registered changes and additions to the prospectus for the second issue of KEGOC's non-government bonds issued as part of the company's second bond program.

The type of bonds of KEGOC was changed to green. This is the first issue of "green" bonds of JSC "KEGOC". The proceeds from their placement will be used to implement the company's projects related to the construction of the necessary grid infrastructure for the large-scale involvement of renewable energy sources in the energy balance, ensuring the country's energy security, as well as increasing the efficiency of electricity transmission.”

The volume of the issue is 35 billion tenge at the rate of 35 million coupon bonds without collateral, with a nominal value of 1,000 tenge per piece. The placement of bonds is scheduled for November of this year at the Kazakhstan Stock Exchange (KASE).

**The Ministry of Energy of Kazakhstan has drawn up the balance of electricity until 2035.** Taking into account the growth of the population of the republic, the industrial programs of the government and the construction of new enterprises, the ministry expects a consumption level of 153 billion kWh by 2035.

“We will sum up these figures later. And now we understand that we live in countries where electricity is a sensitive commodity and we are afraid to raise the cost. And if we assume that we did not build anything and would work on the fleet of equipment that we have, then we see that with the existing stations, taking into account the planned decommissioning, closing of these stations, they are old enough, our output will be only 89 billion kW h . That is, this " gap " ( gap - English gap, gap) is almost 60-70 billion kWh , which we need to close," the Vice Minister said.

The speaker added that according to the adopted concept of green development, Kazakhstan will need to build a large number of "green" sources of electricity.

**Heating season 2022-2023: on the preparation of energy enterprises of the regions of Kazakhstan for the autumn-winter period.** As of September 2, at KEGOC power plants, according to the schedule, repair work was completed at 4 power units, 25 boilers, 23 turbines, and at various stages, repair work is being carried out at 4 power units, 27 boilers and 16 turbines.

According to the data of local executive bodies, 1073 boilers were repaired and prepared for the new heating period at 487 central heating boiler houses, which is 90% of the total plan.

The readiness of electrical networks is estimated at 70% - for lines, and 46% - for substations. The total length of the planned repairs of transmission lines was 20,201 km, as well as 712 units of high-voltage substations. To date, repairs have been completed at 14,047 km of power lines and 331 substations. Repair work of electrical networks is proceeding in accordance with the approved schedules and will be completed on time.

There is a failure to meet the deadlines for repairs of the main equipment of power plants in the Karaganda, East Kazakhstan regions.

In addition, there are regions where major repairs were postponed by energy enterprises to 2023: Karaganda region, Mangystau region and Shymkent.

Currently, work continues on the accumulation of fuel at power plants, in the warehouses of energy sources , the stock of coal is 3.9 million tons and 83 thousand tons of fuel oil, which generally complies with the approved standards. In 5 stations, the stock of coal does not meet the existing standards: at the Semey CHPP-1; at the Ridder CHPP; at Shakhtinskaya CHPP-2; at the Zhezkazgan CHPP; at the Petropavlovsk TPP.

According to the analysis of readiness for the autumn-winter period, the North Kazakhstan region, Turkestan region, Mangystau region, Akmola region, Pavlodar region, Abay region and Nur -Sultan, taking into account various reasons, are identified as regions that require special attention to the passage of the current heating season.

At the meeting of the Government, it also became known that in August 2022 the Ministry of Energy of the Republic of Kazakhstan approved the “Schedule for assigning the regions and the cities of Nur -Sultan, Almaty and Shymkent to the main resource holders of oil and oil products for the supply of fuel oil to social production facilities and institutions in autumn-winter period 2022-2023" in accordance with the applications of local executive bodies in the amount of 218.6 thousand tons at a price of 115,000 tenge per ton.

**Kazakhstan will apply the new "Tariff in exchange for investment". This was stated in his address by the President of the Republic of Kazakhstan Kassym-Jomart Tokayev.** According to the head of state, ⅔ of power supply networks, 57% of thermal communications and almost half of water supply networks are worn out in the country.

“These numbers speak for themselves. Artificial containment of tariffs is fraught with rolling blackouts, accidents, and, as a result, a threat to the health and life of citizens,” the President stressed.

The President believes that in monopoly markets it is necessary to switch to a new tariff policy “Tariff in exchange for investments”.

“The depreciation of networks and capacities should be reduced by at least 15%,” he said.

According to Tokayev , the tariff will be provided in exchange for investments in infrastructure and participation in the state monitoring system to ensure transparency.

“The owner must make a significant part of the investment from his own funds, and not at the expense of the tariff,” the president shared.

**Kyrgyzstan**

**The World Bank will provide Kyrgyzstan with $50 million to modernize the electricity sector.** On September 19, the Jogorku Kenesh Committee on Budget and Fiscal Policy considered and approved the draft financing agreement between the Kyrgyz Republic and the International Development Association (World Bank) on the project “Modernization and Sustainable Development of the Electricity Sector”.

The agreement provides for financing in the amount of $50 million, of which $25 million is a loan, $25 million is a grant. Measures for the modernization of distribution networks and the purchase of transformers are planned for $10 million . It is also planned to purchase 600,000 smart meters under this project.

**Uzbekistan**

**Electricity generation has increased in Uzbekistan.** In January-August of the current year, electricity generation in the republic amounted to 49.4 billion kWh . This is 2.5 billion kWh or 5.4% more than in the same period last year.

In January-August of the current year, 42.0 billion kWh of electricity was supplied to consumers of the republic. This is 2.3 billion kWh or 5.8% more than in the same period last year, the press service of the Ministry of Energy of Uzbekistan reports.

**Tajikistan**

**Tajikistan in January-August this year exported electricity in the amount of about $83 million, which is 13.9% more than in the corresponding period of 2021.** Electricity supplies to neighboring countries increased by almost 14% in January-August.

In January-August 2021, the export of these products was made in the amount of about $73 million.

Tajikistan supplies electricity to Afghanistan and, in relatively smaller volumes, to Uzbekistan.

Afghanistan pays 4.67 cents for each kilowatt-hour of Tajik electricity, while Uzbekistan pays 2 cents.

The relatively low tariff for Uzbekistan is due to the fact that Tajikistan, in turn, receives Uzbek natural gas at a reduced price.

In early August of this year, the head of the OAHK "Barki Tojik " Mahmadumar Asozoda told reporters that Afghan energy company Da Afghanistan Breshna Sherkat (DABS) owes $28 million to OAHK Barki Tojik due to unpaid electricity.

The head of OAHK Barki Tojik explained the resulting debt by the difficulties of transferring money from DABS accounts in Afghan banks.

He added that the leadership of the Afghan company is working to eliminate these problems.

Meanwhile, from October 1 this year, electricity tariffs are being raised for all categories of consumers, except for the Tajik Aluminum Company.

In accordance with the new tariffs approved by the government, the cost of electricity for household consumers (population) will increase by 16.9% from 22.66 dirams to 26.51 dirams from October 1 .

According to the statistical agency, electricity production in Tajikistan for eight months of this year amounted to over 14.5 billion kWh .

Compared to the same period in 2021, output increased by 3%.

**The Government of Tajikistan has approved tariffs for the production, transmission and distribution of electricity.**

The new practice is related to the division of the national energy holding into three independent companies.

The document says that the tariff for the electricity generated by the facilities of the Barki Tojik OJSC will be 11.70 dirams (1.1 cents) for each kilowatt (excluding VAT) from October 1 this year .

The tariff for electricity transmission, which is now handled by the company created on the basis of the energy holding - Transmission Electric Networks OJSC, from the beginning of the coming month will be 2.56 somoni (excluding VAT) per 1 kilowatt.

The document says that the cost of electricity distribution, which is currently carried out by the Distribution Electric Networks company, is determined in accordance with the established tariffs for each category of consumers.

Tariffs for all categories of consumers, except for OJSC "Tajik Aluminum Company", are increased by a government decree from October 1 this year.

The cost of electricity for the population increases by 16.9% - from 22.66 dirams to 26.51 dirams per kilowatt.

At the same time, the document says that if the monthly consumption of electricity for domestic purposes exceeds 10 thousand kWh , the consumer will pay for each extra kilowatt at the rate for an industrial consumer.

dirams to 60.65 dirams from 1 October .

**Compared to last year, electricity generation in Tajikistan has grown.** The total volume of electricity generation in Tajikistan following the results of seven months of this year amounted to 12 billion 502.7 million kWh . This is 360.9 million kWh , or 3% more than the same period in 2021.

The energy department of the country also reported that more than 93.5% of electricity is generated by hydroelectric power plants, they generated 11 billion 697.5 million kWh during the specified period . This figure is more than 93.5% of the total electricity generated throughout the country.

More than 1.1 billion kWh have been generated at combined heat and power plants . Solar power plants produced only 2,000 kWh of electricity.

The ministry emphasized that in six months Tajikistan received over $64 million for the sale of electricity to other countries. Thus, export indicators in the same period of 2021 were exceeded by 17%.

**Russia**

**Electricity consumption in Russia has increased by 2% since the beginning of 2022.** Electricity consumption for the eight months of 2022 in Russia as a whole amounted to 734.0 billion kWh , which is 2.0% more than for the same period in 2021. In the UES of Russia, electricity consumption since the beginning of the year amounted to 722.9 billion kWh , which is also 2.0% more than in January-August 2021.

Since the beginning of 2022, electricity generation in Russia as a whole amounted to 745.2 billion kWh , which is 1.4% more than the generation in January-August 2021. Electricity generation in the UES of Russia for eight months of 2022 amounted to 734.1 billion kWh , which is also 1.4% more than the same period last year.

During eight months of 2022, thermal power plants carried the main load on meeting the demand for electricity in the UES of Russia, the generation of which amounted to 403.4 billion kWh , which is 3.0% more than in January-August 2021. The generation of HPPs over the same period amounted to 134.2 billion kWh (5.4% less than in the eight months of 2021), the generation of nuclear power plants - 145.7 billion kWh (2.0% more than in the same period in 2021), the output of power plants of industrial enterprises is 45.3 billion kWh (3.2% more than in January-August 2021).

The total volumes of electricity consumption and generation in Russia as a whole are made up of indicators of electricity consumption and generation of facilities located in the Unified Energy System of Russia and facilities operating in technologically isolated territorial energy systems (Taimyr Autonomous Okrug, Kamchatka Territory, Sakhalin Region, Magadan Region, Chukotka Autonomous county). The actual performance indicators of the energy systems of technologically isolated territories are presented by the subjects of the operational dispatch control of these energy systems.

**Belarus**

**Organizations of the Ministry of Energy of the Republic of Belarus have completed the main activities to prepare for the heating season.** The results of the work carried out in each region of the Republic of Belarus were discussed on
September 15, 2022 at a meeting of the industry headquarters for preparations for the autumn-winter period, which was held by Deputy Minister of Energy Denis Moroz.

According to the data of energy supplying organizations, major and medium repairs of 19 power boilers, 6 turbines, 13 water-heating and 10 steam boilers were completed throughout the country . To improve the reliability of the operation of electrical equipment, complex repairs of 50 substations of various voltage classes were carried out.

136 km of heating networks were replaced, which is 132% of the plan for September 20, approved by the Resolution of the Council of Ministers of the Republic of Belarus dated June 8, 2022 No. 368.

Work is nearing completion to create a stock of heating oil in the amount of 300 thousand tons for the uninterrupted and stable operation of energy sources during the heating season.

Gas supply organizations carried out a comprehensive instrumental inspection of 8.4 thousand km of underground gas pipelines, replaced 376 pieces of equipment for gas control and cabinet control points that have been in operation for over 20 years, and assessed the technical condition of 767 km of underground gas pipelines with a service life of 40 years or more.

As of September 15, more than 27 thousand thermal energy consumer readiness certificates, or 92% of their total number, as well as 9.5 thousand heat source readiness certificates - 92% of their total number have been registered in the country. The inspection staff of the State Energy and Gas Supervision Authority conducted more than 28,000 surveys of electrical and thermal installations of thermal energy consumers and heat sources, and more than 40,000 gasified multi-apartment residential buildings were inspected.

**Azerbaijan**

**In January-August 2022, electricity production in Azerbaijan increased by 2.6%. During this period, over 19.115 billion** kWh of electricity was produced in the country . Export accounted for 14.06 billion kWh , import - 94.3 million kWh of electricity.

In January-August 2022, the production of electricity from renewable energy sources (RES), including hydroelectric power plants, exceeded 1.555 billion kWh . This indicator increased by 352.6 million kWh compared to the same period in 2021.