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

**NOVEMBER 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-November 2022, 101,897.1 million kWh of electricity were generated, which is
1,760 million kWh or 1.7% 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- November** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **Total** | **103,657.1** | **101 897.1** | ***-1 760.0*** | ***-1.7%*** |
| *TPP* | 82,355.8 | 79 804.8 | *-2 551.0* | *-3.1* ***%*** |
| *GTES* | 9652.0 | 9 899.4 | *247.4* | *2.6* ***%*** |
| *HPS* | 8495.5 | 8 410.2 | *-85.3* | *-1.0* ***%*** |
| *WES* | 1565.6 | 2 098.5 | *532.9* | *34.0* ***%*** |
| *SES* | 1,585.7 | 1 683.8 | *98.1* | *6.2* ***%*** |
| *BSU* | 2.5 | 0.4 | *-2.1* | *-84.0* ***%*** |
| 1 | **Northern** | **Total** | **79,637.5** | **75 694.9** | ***-3 942.6*** | ***-5.0%*** |
| *TPP* | 69,720.4 | 65 855.2 | *-3 865.2* | *-5.5* ***%*** |
| *GTES* | 2666.5 | 2 624.2 | *-42.3* | *-1.6* ***%*** |
| *HPS* | 6,021.9 | 5 570.5 | *-451.4* | *-7.5* ***%*** |
| *WES* | 728.4 | 1 108.3 | *379.9* | *52.2* ***%*** |
| *SES* | 506.8 | 536.3 | *29.5* | *5.8* ***%*** |
| *BSU* | 2.5 | 0.4 | *-2.1* | *-84.0* ***%*** |
| 2 | **South** | **Total** | **10,920.1** | **13 031.5** | ***2 111.4*** | ***19.3%*** |
| *TPP* | 6,567.5 | 8 061.7 | *1 494.2* | *22.8* ***%*** |
| *GTES* | 2482.6 | 2 839.7 | *357.1* | *14.4* ***%*** |
| *HPS* | 240.5 | 268.2 | *27.7* | *11.5* ***%*** |
| *WES* | 553.6 | 717.4 | *163.8* | *29.6* ***%*** |
| *SES* | 1075.9 | 1 144.5 | *68.6* | *6.4* ***%*** |
| 3 | **Western** | **Total** | **13,099.5** | **13 170.7** | ***71.2*** | ***0.5%*** |
| *TPP* | 6,067.9 | 5 887.9 | *-180.0* | *-3.0* ***%*** |
| *GTES* | 6,745.0 | 7 007.0 | *262.0* | *3.9* ***%*** |
| *WES* | 283.6 | 272.8 | *-10.8* | *-3.8* ***%*** |
| *SES* | 3 | 3.0 | *0.0* | *0.0* ***%*** |

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

In January - November 2022, compared to the same period in 2021, electricity generation increased significantly in Atyrau, Zhambyl, Kostanay, Kyzylorda and Turkestan regions. A sharp increase in electricity production in the Zhambyl region by 1600.2 million kWh . or 61.3% 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, West Kazakhstan , Karaganda, Mangistau, Pavlodar and North Kazakhstan regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January- November** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| *1* | *Akmola* | 4,876.7 | 4,813.2 | *-63.5* | *-1.3%* |
| *2* | *Aktobe* | 3367.6 | 3304.7 | *-62.9* | *-1.9%* |
| *3* | *Almaty* | 6,194.4 | 6003.3 | *-191.1* | *-3.1%* |
| *4* | *Atyrau* | 6352.4 | 6,533.2 | *180.8* | *2.8%* |
| *5* | *East Kazakhstan* | 8488.0 | 7484 | *-1,004.0* | *-11.8%* |
| *6* | *Zhambyl* | 2610.3 | 4210.5 | *1600.2* | *61.3%* |
| *7* | *West Kazakhstan* | 2170.9 | 2120.5 | *-50.4* | *-2.3%* |
| *8* | *Karaganda* | 14,333.0 | 8,718.1 | *-5,614.9* | *-39.2%* |
| *9* | *Kostanay* | 881.8 | 974.4 | *92.6* | *10.5%* |
| *10* | *Kyzylorda* | 568.1 | 573.1 | *5.0* | *0.9%* |
| *11* | *Mangistau* | 4,576.2 | 4 517 | *-59.2* | *-1.3%* |
| *12* | *Pavlodar* | 45,210.8 | 44,138.1 | *-1,072.7* | *-2.4%* |
| *13* | *North Kazakhstan* | 2479.6 | 1423.3 | *-1,056.3* | *-42.6%* |
| 14 | *Turkestan* | 1547.3 | 1634.1 | *86.8* | *5.6%* |
| *15* | *Abai* |  | 601.3 | *601.3* |  |
| *16* | *Zhetysuskaya* |  | 610.5 | *610.5* |  |
| 17 | *Ulytauskaya* |  | 4237.8 | *4237.8* |  |
|  | **Total for Kazakhstan** | **103,657.1** | **101,897.1** | ***-1,760.0*** | ***-1.7%*** |

# *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- November 2022 amounted to 32,002million kWh . The decrease in electricity generation compared to the same period in 2021 amounted to 225.9 million kWh or 0.7 %. The decrease is observed at Ekibastuzskaya GRES-1 LLP, Ekibastuzskaya GRES-2 LLP, Samruk-Green Energy LLP and First Wind Power Plant LLP .

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ 2022/2021** |
| **January- November** | **share in Kazakhstan, %** | **January- November** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **"Samruk-Energy" JSC** | **32227.9** | **31.1%** | **32,002.0** | **31.4%** | **-225.9** | **-0.7%** |
| *1* | *AlES JSC* | *4501.8* | *4.3%* | 4605.4 | *4.5%* | *103.6* | *2.3%* |
| *2* | *"Ekibastuz GRES-1" LLP* | *20634.6* | *19.9%* | 20595.6 | *20.2%* | *-39.0* | *-0.2%* |
| *3* | *"Ekibastuz GRES-2" JSC* | *5830.5* | *5.6%* | 5341.1 | *5.2%* | *-489.4* | *-8.4%* |
| *4* | *"Shardara HPP" JSC* | *428.6* | *0.4%* | 444.8 | *0.4%* | *16.2* | *3.8%* |
| *5* | *"Moinak HPP" JSC* | *683.6* | *0.7%* | 875.3 | *0.9%* | *191.7* | *28.0%* |
| *6* | *Samruk-Green Energy LLP* | *18.8* | *0.0%* | 18.5 | *0.0%* | *-0.30* | *-1.6%* |
| *7* | *WPP Shelek "Energy Semirechye" LLP* |  |  | 70.7 | *0.1%* |  |  |
| *8* | *"First wind power plant" LLP* | *130.0* | *0.1%* | 121.3 | *0.1%* | *-8.7* | *-6.7%* |

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

*in power generation in Kazakhstan*

Samruk-Energy JSC in the electricity market of Kazakhstan remains the leader and amounts to 31.4%.

**Others**


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

The industrial production index (hereinafter referred to as IPI) in January-November 2022 compared to January-November 2021, amounted to 101.4%. An increase in production volumes was recorded in 13 regions of the republic, a decrease is observed in Atyrau, West Kazakhstan, 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 110.6%.

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 110.6%.

In the city of Almaty, due to the growth in the production of chocolate, soft drinks, cars, the IPI amounted to 110.3%.

In the Abay region, the IPI amounted to 109.8% due to the growth in the extraction of copper and gold ores, the production of copper concentrates, and refined copper.

In the Almaty region, the IPI amounted to 106.5% due to an increase in the production of beer, soft drinks and cigarettes.

In the city of Shymkent, due to the increase in the production of gasoline, kerosene, diesel fuel, fuel oil, medicines, the IPI amounted to 106%.

In the Ulytau region, the IPI amounted to 104.7% 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 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 103.4%.

In the East Kazakhstan region, the IPI amounted to 103.3% due to the growth in the production of refined gold and silver, refined copper.

In the Mangistau region, the IPI amounted to 102.5% due to an increase in the production of mortars, prefabricated structural elements for construction, pumps for pumping liquids, and oilfield equipment.

In the Aktobe region, the IPI amounted to 101.7% due to an increase in the extraction of copper-zinc ores, the production of ferrochrome.

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 the city of Astana, the IPI amounted to 101% due to the growth in the production of prefabricated structural elements for construction, refined gold.

In the Pavlodar region, the IPI amounted to 99.3% due to a decrease in the extraction of copper ores and concentrates, the production of raw aluminum, ferrochrome, and electricity.

In the Kyzylorda region, the IPI amounted to 98.9% due to a reduction in the production of crude oil, the production of hydrocarbon liquefied gases.

In West Kazakhstan IPI amounted to 98.7% due to a decrease in gas condensate production.

In the Zhetisu region, the IPI amounted to 97.9% due to a decrease in the production of metal structures, malt, and electric batteries.

In Atyrau Oblast, the IPI was 97.7% due to a reduction in crude oil production.

In the Turkestan region, due to a decrease in the extraction of uranium and thorium ores, the IPI amounted to 95.5%.

In the Kostanay region, the IPI amounted to 94.9% due to a decrease in the production of non-agglomerated iron ores, iron ore pellets and concentrates.

# *2.1 Electricity consumption by zones and regions*

According to the System Operator, in January-November 2022, there was a decrease in the dynamics of electricity consumption in the republic compared to the same indicators in 2021 by 1,279.8 million kWh or 1.2 %. Thus, in the western and southern zones of the republic, consumption increased by 0.04% and 0.5%, respectively.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January- November** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **103 150.2** | **101,870.4** | *-1,279.8* | *-1.2%* |
| *1* | Northern zone | 66 970 | 65 560.0 | *-1,410.0* | *-2.1%* |
| *2* | Western zone | 13,156.2 | 13,161.6 | *5.4* | *0.04%* |
| *3* | Southern zone | 23 024 | 23,148.8 | *124.8* | *0.5%* |
|  | **incl . by regions** |  |  |  |  |
| *1* | East Kazakhstan | 8662.1 | 8332.3 | *-329.8* | *-3.8%* |
| *2* | Karaganda | 17,234.9 | 9,817.1 | *-7,417.8* | *-43.0%* |
| *3* | Akmola  | 9 210 | 9,502.9 | *292.9* | *3.2%* |
| *4* | North Kazakhstan | 1558.9 | 1438.6 | *-120.3* | *-7.7%* |
| *5* | Kostanay  | 4346.2 | 4,140.8 | *-205.4* | *-4.7%* |
| *6* | Pavlodar | 19,693.4 | 17,638.5 | *-2,054.9* | *-10.4%* |
| *7* | Atyrau  | 6,038.2 | 6,034.9 | *-3.3* | *-0.1%* |
| *8* | Mangistau  | 4,783.7 | 4,795.4 | *11.7* | *0.2%* |
| *9* | Aktobe | 6,264.5 | 6328.3 | *63.8* | *1.0%* |
| *10* | West Kazakhstan | 2334.3 | 2331.3 | *-3.0* | *-0.1%* |
| *11* | Almaty  | 11,210.7 | 10,223.1 | *-987.6* | *-8.8%* |
| *12* | Turkestan | 5 200 | 5407.2 | *207.2* | *4.0%* |
| *13* | Zhambyl  | 4,852.6 | 4,528.6 | *-324.0* | *-6.7%* |
| *14* | Kyzylorda  | 1760.7 | 1725.3 | *-35.4* | *-2.0%* |
| *15* | Ulytau |  | 7407.8 | *-* | *-* |
| *16* | Abai |  | 953.7 | *-* | *-* |
| *17* | Zhetysusky |  | 1264.6 | *-* | *-* |

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

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

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Name** | **January-November** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Total** | **45,706.5** | **39,056.0** | **-6650.5** | **-14.6%** |
| *1.* | *ERG* | *14152.14* | *13,670.4* | *-481.8* | *-3.4%* |
| *2.* | *Kazakhmys Corporation LLP* | *7418.77* | *3,687.0* | *-3,731.8* | *-50.3%* |
| *3.* | *Kazzinc LLP*  | *2661.76* | *1,717.1* | *-944.7* | *-35.5%* |
| *4.* | *Arcelor Mittal Temirtau" JSC* | *3497.83* | *3,025.9* | *-472.0* | *-13.5%* |
| *5.* | *KKS LLP* | *12433.34* | *12,379.9* | *-53.4* | *-0.4%* |
| *6.* | *CAEPCO JSC* | *5599.65* | *6,194.1* | *594.5* | *10.6%* |
| *7.* | *Zhambyl GRES* | *4722.79* | *4914.7* | *191.9* | *4.1%* |
| *8.* | *Oil and gas enterprises* | *2110.89* | *1271.1* | *-839.8* | *-39.8%* |

In January-November 2022, there is an increase in electricity consumption by Samruk-Energy JSC companies by 34.6 million kWh or 0.5% compared to the same indicators for 2021.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **No.**  | **Name** | **January-November** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **"Samruk-Energy" JSC** | **7307.8** | **7342.4** | **34.6** | **0.5%** |
| *1.* | *LLP Bogatyr-Komir* | *271.2* | *252.1* | *-19.1* | *-7.1%* |
| *2.* | *JSC Alatau Zharyk Companies*  | *913.9* | *936.8* | *22.9* | *2.5%* |
| *3.* | *AlmatyEnergoSbyt LLP* | *6,122.7* | *6,153.5* | *30.8* | *0.5%* |

*2.3 Electricity consumption by large consumers in Kazakhstan*

In January-November 2022, compared to the same period in 2021, electricity consumption by large consumers decreased by 731.5 million kWh or 2.3%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Consumer** | **January-November** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| *1* | Arcelor Mittal Temirtau" JSC | *3435.1* | *3353.9* | *-81.2* | *-2.4* |
| *2* | AZF ( Aksuysky ) "TNK Kazchrome " JSC | *4,733.8* | *4,730.4* | *-3.4* | *-0.1* |
| *3* | Kazakhmys Smelting LLP | *972.2* | *1,066.5* | *94.3* | *9.7* |
| *4* | Kazzinc LLP | *2538.1* | *2444.9* | *-93.2* | *-3.7* |
| *5* | "Sokolovsko-Sarbayskoye GPO" JSC | *1476.4* | *1239.4* | *-237.0* | *-16.1* |
| *6* | Kazakhmys Corporation LLP | *1,182.6* | *1215.0* | *32.4* | *2.7* |
| *7* | AZF (Aktobe) "TNK Kazchrome" JSC | *2995.0* | *3,030.5* | *35.5* | *1.2* |
| *8* | “Channel them. Satpaev" RSE | *372.7* | *353.8* | *-18.9* | *-5.1* |
| *9* | Kazphosphate LLP | *1,892.0* | *1923.6* | *31.6* | *1.7* |
| *10* | NDFZ(part of the structure of Kazphosphate LLP) JSC | *1600.8* | *1629.8* | *29.0* | *1.8* |
| *11* | "Taraz Metallurgical Plant" LLP | *274.2* | *30.3* | *-244.0* | *-89.0* |
| *12* | "Ust-Kamenogorsk titanium -magnesium plant" JSC | *624.8* | *644.2* | *19.4* | *3.1* |
| *13* | Tengizchevroil LLP  | *1,671.6* | *1,727.8* | *56.2* | *3.4* |
| *14* | PAS (Pavlodar Aluminum Smelter) JSC | *867.2* | *888.3* | *21.2* | *2.4* |
| *15* | "KEZ" (Kazakhstan electrolysis plant) JSC | *3456.7* | *3243.2* | *-213.6* | *-6.2* |
| *16* | "KEGOC" JSC | *4939.2* | *4,536.2* | *-403.0* | *-8.2* |
| **Total** | ***31,431.9*** | ***30,700.4*** | ***-731.5*** | ***-2.3*** |

# *Export-import of electrical energy*

In order to balance the production and consumption of electricity in January-November 2022, exports to the Russian Federation amounted to 1,099.1 million kWh, imports from the Russian Federation 958.2 million kWh.

Including export from “KEGOC” JSC to the Russian Federation in the amount of 1,060.2 million kWh, import of electricity for the reporting period in the amount of 801.0 million kWh.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **January - November** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| **Export of Kazakhstan** | ***-2257.3*** | ***-1679.9*** | ***577.3*** | ***-25.6%*** |
| *in Russia* | *-1021.8* | *-1099.1* | *-77.3* | *7.6%* |
| *in the IPS of Central Asia* | *-1235.4* | *-580.8* | *654.7* | *-53.0%* |
| **Import of Kazakhstan** | ***1693.6*** | ***1262.6*** | ***-430.9*** | ***-25.4%*** |
| *From Russia* | *1388.4* | *958.2* | *-430.2* | *-31.0%* |
| **Balance- flow "+" deficit, "-" excess** | ***-563.7*** | ***-417.3*** | ***146.4*** | ***-26.0%*** |

# **Coal**

In November 2022, Kazakhstan produced 106,844.6 thousand tons of hard coal, which is 3% more than in the same period in 2021 ( 103,712.8 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January- November** | **Δ, thousand tons** | **Δ, %** |
| **2021** | **2022** |
| 1 | *Pavlodar* | *60,033.9* | *61,464.9* | *1431* | *2.4%* |
| 2 | *Karaganda* | *35 197* | *35,035.3* | *- 161.7* | *-0.5%* |
| 3 | *East Kazakhstan* | *7926.4* | *8,082.3* | *155.9* | *2%* |
|  | **Total for the Republic of Kazakhstan** | **103,712.8** | **106,844.6** | **3,131.8** | **3%** |

In January-November 2022, Bogatyr Komir LLP produced 38,724.5 thousand tons, which is 4.7% less than in the corresponding period of 2021 (40,630 thousand tons).

The sold volume of coal in January- November 2022 amounted to 38,624.1 thousand tons, of which 29,313 thousand tons went to the domestic market of the Republic of Kazakhstan, which is 7.6 % less than in the same period in 2021 ( 31,735.7 thousand . tons) and for export (RF) - 9,311.1 thousand tons, which is 4.7 % more than in the corresponding period of 2021 ( 8,897 thousand tons).

According to the indicators for January- November 2022, in comparison with similar indicators in 2021, Bogatyr Komir LLP observed a decrease in coal sales by 2,008.6 thousand tons or 4.9%.

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January- November** | **Δ,** **thousand tons** | **Δ, %****2022/2021** |
| **2021** | **2022** |
| **Total to the domestic market of the Republic of Kazakhstan** | **31,735.7** | **29 313** | **-2,422.7** | **-7.6%** |
| **Total for export to Russia** | **8 897** | **9,311.1** | **414.1** | **4.7%** |

#

# **Renewable energy sources**

# *RES indicators in Kazakhstan*

Since the adoption by Kazakhstan of the vector for the transition to a "green economy", the electric power industry has gone through a serious path of reform.

The state has created the necessary measures to support the development of the renewable energy sources (hereinafter referred to as RES) sector in order to achieve the established target indicators.

- 3% share of RES in total electricity generation by 2020 (achieved);

- 15% share of RES in total electricity generation by 2030;

- 50% share of alternative and RES in total electricity generation by 2050.

Given the large resource potential of RES in Kazakhstan, as well as due to the created conditions for supporting the development of RES, over the past 7 years, the installed capacity of RES facilities has increased by almost 11 times.

The Energy Balance of the Republic of Kazakhstan until 2035, prepared by the System Operator, outlines 2 scenarios for the development of the share of clean electricity (with and without nuclear power plants).

Energy balance of the Republic of Kazakhstan until 2035.



# *RES indicators in Kazakhstan*

According to Ministry of Energy of the Republic of Kazakhstan, as of November 2022, there are 148 renewable energy facilities operating in Kazakhstan with a total capacity of more than 2,333.2 MW .

14 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 by “Zheruyik Energy” LLP;

- WPP Shelek 60 MW "Energy Semirechye" LLP;

- VES 100 MW Abai-1 LLP;

- WES 250 MW Abai LLP;

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

- Net consumer;

- SES Otrar by "Cascade NRG" LLP;

- SES Zhalagash by "Nomad Solar" LLP;

- WPP "Shengeldi-1, 2" LLP;

- VES Novoteks LLP.

According to the System Operator, the volume of electricity supply in the EU of the Republic of Kazakhstan by objects using renewable energy sources (SPP, WPP, BGS, small HPPs) of the Republic of Kazakhstan for January-November 2022 amounted to 4,642.7 million kWh. Compared to January -November 2021 (3,878.6 million kWh ), the increase was 764.1 million kWh or 19.7 %. 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 November** | **share in Kazakhstan, %** | **January November** | **share in Kazakhstan, %** |
| **1** | **Production in the Republic of Kazakhstan** | **103657.1** | **100%** | **101897.1** | **100%** | **-1760.0** | **-1.7%** |
| **2** | **RES generation in Kazakhstan** | **3878.6** | **3.7%** | **4642.7** | **4.6%** | **764.1** | **19.7%** |
| **3** | **RES generation, incl . by zones** | **share in the respective zone** |
|  | *Northern zone* | *1378.5* | *1.7%* | *1812.9* | *2.4%* | *434.4* | *31.5%* |
|  | *Southern zone* | *2213.5* | *20.3%* | *2554.0* | *19.6%* | *340.5* | *15.4%* |
|  | *Western zone* | *286.6* | *2.2%* | *275.8* | *2.1%* | *-10.8* | *-3.8%* |
| **4** | **RES generation, incl . by zones** | **share in RES of the Republic of Kazakhstan, %** |
|  | *Northern zone* | *1378.5* | *35.5%* | *1812.9* | *39.0%* | *434.4* | *31.5%* |
|  | *Southern zone* | *2213.5* | *57.1%* | *2554.0* | *55.0%* | *340.5* | *15.4%* |
|  | *Western zone* | *286.6* | *7.4%* | *275.8* | *5.9%* | *-10.8* | *-3.8%* |
| **5** | **RES generation, incl . by type** | **share in RES of the Republic of Kazakhstan, %** |
|  | *SES* | *1585.7* | *40.9%* | *1683.8* | *36.3%* | *98.1* | *6.2%* |
|  | *WES* | *1565.6* | *40.4%* | *2098.5* | *45.2%* | *532.9* | *34.0%* |
|  | *Small HPPs* | *724.8* | *18.7%* | *860.0* | *18.5%* | *135.2* | *18.7%* |
|  | *BSU* | *2.5* | *0.1%* | *0.4* | *0.0%* | *-2.1* | *-84.0%* |

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

Samruk-Energy JSC (SPP, WPP and small hydropower plants) in January-November 2022 amounted to 373.2 million kWh, which is 24.8% higher compared to the same period in 2021 (299 million kWh).

The share of RES electricity of Samruk-Energy JSC in January-November 2022 amounted to 8% of the volume of electricity generated by RES facilities in the Republic of Kazakhstan, while in January-November 2021 this figure was 7.7%.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ, million kWh** | **Δ, %** |
| **January-November** | **share in Kazakhstan, %** | **January-November** | **share in Kazakhstan, %** |
|  | **RES S-E, including:** | 299.0 | 7.7% | 373.2 | 8.0% | 74.2 | 24.8% |
| 1 | *Cascade of small HPPs of AlES JSC 43.7 MW* | 150.2 | 3.9% | 162.7 | 3.5% | 12.5 | 8.3% |
| 2 | *Samruk - Green LLP Energy SPP 2MW + SPP 1MW + SPP 0.4MW* | 5.1 | 0.1% | 5.1 | 0.1% | 0.0 | 0.0% |
| 3 | *Samruk-Green Energy LLP WPP Shelek 5 MW* | 13.7 | 0.4% | 13.4 | 0.3% | -0.3 | -2.2% |
| 4 | *First Wind Power Plant LLP WPP 45 MW* | 130.0 | 3.4% | 121.3 | 2.6% | -8.7 | -6.7% |
| 5 | *Energy Semirechye LLP WPP Shelek 60 MW* | - | - | 70.7 | - | - | - |

# **International Relations**

# *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 , 19th meeting on October 10-12 ), 16 meetings of the Subcommittee on the formation of the Power Industry under the EEC Board (79th meeting January 13-14, 80th meeting January 26-27, 81st meeting February
11, 82nd meeting February 25, 83rd meeting March 17-18, 84th meeting March 31, 85th meeting April 8, 86th meeting April 15,
87th meeting April 26, 88th meeting May 17-18 , 89th meeting, 90th meeting
June 30, 91st meeting, 92nd meeting on July 22, 93rd meeting on July 29,
94th meeting on August 10), and also on March 4, 2022, Kazakhstani and Russian parties took part in a working meeting on the procedure for registering free bilateral contracts in mutual trade in electric energy on a 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**

**An online auction was held in Kazakhstan to select wind farm projects with a total installed capacity of 50 MW**

On November 21, 2022, an online auction was held on renewable energy sources (RES) for the western zone of the Unified Electricity System of the Republic of Kazakhstan for the selection of wind power plants (WPPs) with a capacity of 50 MW.

8 companies were allowed to participate in the auction. The marginal auction price during the auction for the selection of wind farm projects in 2022 was 21.53 tenge / kWh (excluding VAT).

During the trading session, the price range of bids received from auction participants amounted to 21.53 to 14.51 tenge / kWh (excluding VAT).

According to the results of the auction, the winner was LLP " Sarkylmas Kuat "(Hong Kong) with an installed capacity of the project of 50 MW, the auction price is 14.51 tenge / kWh (excluding VAT).

The decrease in the auction price was 32.6%, which is a good result. Auction sales are aimed at selecting the most efficient projects and forming competitive market prices for electricity produced by renewable energy facilities.

During the auction, representatives of the Ministry of Energy of the Republic of Kazakhstan, ALE " Ecojer ", JSC "KOREM" took part as observers. The observers noted the holding of auctions in accordance with the approved regulatory legal acts and confirmed the transparency of the operation of the electronic trading system of the auction organizer - KOREM JSC.

**Kyrgyzstan**

**Electricity production in Kyrgyzstan in January-October decreased by 14%. Electricity imports doubled last year's level**

Electricity production in Kyrgyzstan in January-October decreased by 14%. This is indicated by the data of monthly reports of OJSC "Kyrgyz Energy Settlement Center".

The output for 10 months amounted to 10.3 billion kWh . In the structure of production, hydroelectric power plants reduced production by 15.5% - to 8.7 billion kWh , CHPs in Bishkek and Osh by 7% - to 1.45 billion kWh .

Small HPPs, on the other hand, increased electricity generation by 5.5% to 146 million kWh .

Electricity imports in January-October 2022 exceeded the level of the previous year twice.

In just 10 months, the republic imported 2.6 billion kWh . For comparison, for the whole of 2021, the country received 1.7 billion kWh .

**Uzbekistan**

**Ministry of Energy of the Republic of Uzbekistan: Since the beginning of the year, 7 new power plants with a total capacity of 1474 MW have been put into operation**

In January-November of this year, 6 new thermal power plants (TPPs) with a total capacity of 1374 MW and 1 solar photovoltaic station (PVP) with a capacity of 100 MW were put into operation in Uzbekistan.

These 7 power plants together generate 11.3 billion kWh of electricity per year. At the same time, the equIPIing of new power plants with energy-saving equipment will save 1 billion 503 million cubic meters of natural gas per year - compared to the volume of natural gas that is needed to generate the same amount of electricity for stations built earlier.

The 7 stations commissioned in January-November 2022 include:

Gas piston thermal power plant with a capacity of 270 MW built in the Bukhara district of the Bukhara region;

Combined-cycle plant with a capacity of 240 MW in the Kibray district of the Tashkent region;

Thermal power plant with a capacity of 174 MW in the Yangiaryk district of the Khorezm region;

Gas piston thermal power plant with a capacity of 230 MW in the Kibray district of the Tashkent region;

Modern thermal power plant with a capacity of 240 MW in the Kibray district of the Tashkent region;

Solar photovoltaic plant with a capacity of 100 MW in the Nurabad district of the Samarkand region;

Gas piston thermal power plant with a capacity of 220 MW put into operation in the Khavas district of the Syrdarya region.

During the construction of new power plants, 3960 jobs were created, as a result of their commissioning - 545 new jobs.

**Russia**

**The share of renewable energy generation in the Russian Federation reached 2.2% of the total by October 2022 power system capacity**

Such information is provided by the Association for the Development of Renewable Energy in the information review of the renewable energy market for the third quarter of this year. According to ARVE, the total installed capacity of renewable energy generation facilities in Russia amounted to 5.51 GW.

At the same time, the total installed capacity of CSA RES facilities in the wholesale electricity and capacity market did not change compared to the results of the previous quarter, remaining at the level of 3,746.8 MW.

As of October 2022, the total installed capacity of renewable energy plants has increased by 10 MW. It is noteworthy that despite the crisis in the global economy, the positive dynamics in this indicator continues. Moreover, systematic growth has been going on since the start of the CSA RES support program in 2013.

In the retail electricity markets, during the reporting period, the commissioning of the second stage of the Agidel SPP (4.99 MW) of Kurai LLC was completed Solar " in Bashkiria. In addition, the first and second stages of this generating facility (total capacity 9.98 MW) and the solar power plant at the Krasnodar CHPP (2.35 MW) of OOO LUKOIL-Kubanenergo were qualified.

Electricity generation by renewable energy generation facilities built under CSA RES amounted to 1,865 million kWh , which corresponds to 0.74% of the total electricity generation in the UES of Russia. The cumulative total since the beginning of the year, the share of generation of CSA RES facilities is 0.70%.

**Russian NPPs generated about 200 billion kWh and prevented the release of about 100 million tons of greenhouse gases**

Since the beginning of 2022, the generation of electricity by power units of all 11 operating nuclear power plants in Russia has exceeded 200 billion kWh (as of November 25), which is 1.44% more than the same indicator in 2021 and almost 3% of the plan.

According to the concern's estimates, ""such a volume of electricity generated made it possible to prevent emissions of greenhouse gases into the atmosphere in the amount of more than 100 million tons of CO2 equivalent."

Installed capacity utilization factor (ICUF) exceeded 78%.

Currently, Russian nuclear power plants produce about 20% of the total electricity generation in the country.

**Belarus**

**The Council of Ministers of the Republic of Belarus has settled the issues of creation and reconstruction of some sources of electrical and thermal energy**

The Council of Ministers of the Republic of Belarus has regulated the issues of creation and reconstruction of sources of electrical and thermal energy. This is provided for by the Decree of the Council of Ministers No. 726 “On sources of electrical and (or) thermal energy”.

The structure of the United Energy System of Belarus has a significant share (about 10%) of electricity producers of various forms of ownership and departmental subordination, which required an integrated approach to solving the problem of improving the legal regulation of the development and operation of power generating capacities.

The legal act approved the Regulations on the coordination of the creation of new, reconstruction, modernization, technical modernization of sources of electrical and thermal energy. The regulation establishes the procedure for the creation by legal entities that are not part of the State Production Association " Belenergo " and individual entrepreneurs of sources of electrical energy and (or) sources of thermal energy with a capacity of 500 kW or more in terms of coordination by the Ministry of Energy.

The Regulation does not apply to the creation of sources by military units and organizations of the Armed Forces, as well as to sources in respect of which, prior to the entry into force of Decree No. 726, permits for construction were received or an application was submitted for issuance of permits for construction.

**Commissioning of the second power unit of BelNPP is planned in the first quarter of 2023**

Specialists plan to commission the second unit of the Belarusian Nuclear Power Plant ( BELNPP ) in the first quarter of 2023.

The construction of nuclear power plants in Belarus is carried out according to the standard Russian project "NPP-2006". BelNPP consists of two power units with a capacity of 1,200 MW each. The general contractor is Atomstroyexport ( part of Rosatom Corporation ) . On November 3, 2020, the first power unit of the BelNPP was included in the country's unified energy system. On June 10,
2021, the first unit of the BelNPP was put into commercial operation. In December 2021, at the second power unit, fresh nuclear fuel was loaded into the reactor, from which the physical launch began. The commissioning of the second power unit was scheduled for the end of 2022.

**Tajikistan**

Rogun HPP: the government of Tajikistan will allocate another $20 million for the "construction of the century"

The Government of Tajikistan instructed the Ministry of Finance of the country to replenish the authorized capital of Rogun HPP JSC at the expense of the Stabilization Fund for Economic Development by 200 million somoni (about $20 million).

The corresponding resolution, adopted by the government on November 11, 2022, was published today, November 24, on the portal of legal information of the Ministry of Justice of Tajikistan.

“Taking into account the allocation of additional funds, regulate the financing plan for the Rogun HPP Open Joint Stock Company in the republican budget for 2022,” the document says.

Rogun HPP OJSC is instructed to ensure the timely and targeted use of the allocated funds and submit a report on the expenses incurred to the Ministry of Finance.

The Stabilization Fund for Economic Development, in accordance with Article 16 of the Law on the State Budget of the Republic of Tajikistan for 2022, is replenished by overfulfilling the revenue side of local and republican budgets. The funds of this Fund, first of all, are directed to the development of the fuel and energy industry, ensuring food security in the republic, developing social sectors and ensuring timely servicing of the state external debt.

At the end of September this year, the government turned to the lower house of parliament to agree on attracting domestic debt in the amount of 1 billion somoni (over $160 million) from the National Bank of Tajikistan at a preferential rate of 2% per annum. The consent of the deputies was obtained on 3 October.

At the same time , the deputies adopted amendments to the State Budget for 2022, according to which the maximum size of the total deficit of the state budget of the country was increased by 1 billion somoni .

Additional expenses, according to the published amendments, are directed to finance the Fuel and Energy Complex (FEC). It is not specified what needs exactly, the written request of "Asia-Plus" to the Ministry of Finance remained unanswered.

However, sources close to the country's fiscal sector claim that the government needs these funds to further finance the Rogun project .