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

**MAY 2022**

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**June 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-May 2022 generated 48,108.4 million kWh of electricity, which is 692.7 million kWh or 1.4% 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-May** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **Total** | **48,801.1** | **48 108.4** | ***-692.7*** | ***-1.4%*** |
| *TPP* | *39,272.9* | *38 150.5* | *-1122.4* | *-2.9%* |
| *GTES* | *4382.9* | *4,812.2* | *429.3* | *9.8%* |
| *HPS* | *3,823.2* | *3,591.5* | *-231.7* | *-6.1%* |
| *WES* | *688.7* | *912.0* | *223.3* | *32.4%* |
| *SES* | *632.0* | *642.2* | *10.2* | *1.6%* |
| *BSU* | *1.4* | *0.0* | *-1.4* | *-100.0%* |
| **1** | **Northern** | **Total** | **37,613.0** | **35,988.7** | ***-1,624.3*** | ***-4.3%*** |
| *TPP* | *33,013.8* | *31,450.1* | *-1,563.7* | *-4.7%* |
| *GTES* | *1278.5* | *1274.2* | *-4.3* | *-0.3%* |
| *HPS* | *2760.9* | *2518.5* | *-242.4* | *-8.8%* |
| *WES* | *335.0* | *527.3* | *192.3* | *57.4%* |
| *SES* | *223.4* | *218.6* | *-4.8* | *-2.1%* |
| *BSU* | *1.4* | *0.0* | *-1.4* | *-100.0%* |
| **2** | **South** | **Total** | **5289.1** | **5,826.8** | ***537.7*** | ***10.2%*** |
| *TPP* | *3470.3* | *3945.6* | *475.3* | *13.7%* |
| *GTES* | *1,062.3* | *1,073.0* | *10.7* | *1.0%* |
| *HPS* | *132.0* | *127.9* | *-4.1* | *-3.1%* |
| *WES* | *217.2* | *258.0* | *40.8* | *18.8%* |
| *SES* | *407.3* | *422.3* | *15.0* | *3.7%* |
| **3** | **Western** | **Total** | **5,899.0** | **6292.9** | ***393.9*** | ***6.7%*** |
| *TPP* | *2,788.8* | *2,754.8* | *-34.0* | *-1.2%* |
| *GTES* | *2972.4* | *3410.1* | *437.7* | *14.7%* |
| *WES* | *136.5* | *126.7* | *-9.8* | *-7.2%* |
| *SES* | *1.3* | *1.3* | *0.0* | *0.0%* |

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

In January-May 2022, compared to the same period in 2021, electricity generation increased significantly in Akmola, Almaty, Atyrau, Zhambyl, West Kazakhstan, Kostanay and Mangystau regions. A sharp increase in electricity production in the Zhambyl region by 563.9 million kWh or 46.8% due to the inclusion of an additional 2 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 Aktobe, East Kazakhstan, Karaganda, Kyzylorda, Pavlodar, North Kazakhstan and Turkestan regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| 1 | Akmola | 2360.7 | 2429.5 | *68.8* | *2.9%* |
| 2 | Aktobe | 1637.4 | 1592.2 | *-45.2* | *-2.8%* |
| 3 | Almaty | 3,000.2 | 3011.6 | *11.4* | *0.4%* |
| 4 | Atyrau | 2908.4 | 3,132.7 | *224.3* | *7.7%* |
| 5 | East Kazakhstan | 3985.1 | 3,867.2 | *-117.9* | *-3.0%* |
| 6 | Zhambyl | 1203.7 | 1,767.6 | *563.9* | *46.8%* |
| 7 | West Kazakhstan | 1,008.3 | 1,089.2 | *80.9* | *8.0%* |
| 8 | Karaganda | 6,830.3 | 6259.2 | *-571.1* | *-8.4%* |
| 9 | Kostanay | 511.7 | 574.3 | *62.6* | *12.2%* |
| 10 | Kyzylorda | 296.0 | 278.9 | *-17.1* | *-5.8%* |
| 11 | Mangistau | 1982.3 | 2071.0 | *88.7* | *4.5%* |
| 12 | Pavlodar | 20,938.9 | 20,538.9 | *-400.0* | *-1.9%* |
| 13 | North Kazakhstan | 1348.9 | 727.4 | *-621.5* | *-46.1%* |
| 14 | Turkestan | 789.2 | 768.7 | *-20.5* | *-2.6%* |
|  | **Total for Kazakhstan** | **48,801.1** | **48 108.4** | ***-692.7*** | ***-1.4%*** |

# *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-May 2022 amounted to 12,248.1 million kWh. The decrease in electricity generation compared to the same period in 2021 amounted to 464.0 million kWh or 3.1%. The decrease is observed at AlES JSC, Ekibastuz GRES-2 JSC, Shardarinskaya HPP JSC and Samruk-Green LLP Energy ".

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Name** | **2021** | **2022** | **Δ 2022/2021** |
| **January-May** | **share in Kazakhstan, %** | **January-May** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **"Samruk-Energy" JSC** | **15 212.4** | **31.2%** | **14,748.4** | **30.7%** | **-464.0** | **-3.1%** |
| *1* | *AlES JSC* | *2332.6* | *4.8%* | *2286.8* | *4.8%* | *-45.8* | *-2.0%* |
| *2* | *"Ekibastuz GRES-1" LLP* | *9,076.9* | *18.6%* | *9,246.7* | *19.2%* | *169.8* | *1.9%* |
| *3* | *"Ekibastuz GRES-2" JSC* | *3,168.4* | *6.5%* | *2607.4* | *5.4%* | *-561.0* | *-17.7%* |
| *4* | *"Shardara HPP" JSC* | *267.7* | *0.5%* | *205.1* | *0.4%* | *-62.6* | *-23.4%* |
| *5* | *"Moinak HPP" JSC* | *294.1* | *0.6%* | *322.5* | *0.7%* | *28.4* | *9.7%* |
| *6* | *Samruk-Green Energy» LLP* | *9.1* | *0.0%* | *8.6* | *0.0%* | *-0.5* | *-5.5%* |
| *7* | *"First wind power plant" LLP* | *63.6* | *0.1%* | *71.3* | *0.1%* | *7.7* | *12.1%* |

#

# *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 30.7 % .

**Kazakhstan**

**48 108,4**

**млн. кВтч**

**Others**

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

January-May 2022 compared to January-May 2021, the industrial production index (hereinafter referred to as IPI) amounted to 104.4%. An increase in production volumes was recorded in 15 regions of the republic, a decrease is observed in Kyzylorda and Pavlodar regions.

**Changes in industrial output by region**

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

In the city of Almaty, due to the growth in the production of soft drinks, medicines, mortars, furniture, cars and trucks, the IPI amounted to 112.7%.

In the Akmola region, due to the increase in the extraction of gold ores, copper concentrates, the production of gold in the doré alloy, natural uranium, the IPI amounted to 109%.

In the Atyrau region, the IPI amounted to 108.7% due to an increase in the production of crude oil, the production of gasoline, diesel fuel, hydrocarbon liquefied gases.

In the Zhambyl region, due to the growth in the extraction of copper and gold ores, limestone and gypsum, the production of sausages, diesel fuel, heating oil, phosphorus, gold in doré alloy, the IPI amounted to 108%.

In the city of Shymkent, due to the increase in the production of medicines, heating oil, diesel fuel, gasoline, kerosene, Portland cement, the IPI amounted to 107.9%.

In the East Kazakhstan region, the IPI amounted to 107.8% due to an increase in the extraction of copper concentrates, copper, gold-bearing and copper-zinc ores, the production of refined copper, refined gold and silver, gold in doré.

In the Almaty region, the IPI was 105% due to an increase in the production of soft drinks, beer, chocolate, cigarettes, prepared animal feed, ready-mixed concrete, cement, drugs, hot-rolled steel bars and rods.

In the city of Nur -Sultan, the IPI amounted to 103.1% due to the growth in the production of refined gold, soft drinks, ready-mixed concrete, and plastic packaging products.

In West Kazakhstan IPI amounted to 102.4% due to the growth in gas condensate production, production of plastic pipes, seamless steel pipes, ready-mixed concrete.

In the Kostanay region, the IPI amounted to 102.3% due to an increase in the extraction of aluminum ores, iron ore pellets, copper concentrates, the production of flour, bran, prepared animal feed, hot-rolled steel bars and rods, tractors, combines, trucks and cars.

In the Karaganda region, the growth of IPI amounted to 102.1% due to an increase in the extraction of copper and lead-zinc ores, the production of refined gold, blister copper, copper wire, and electrical wires.

In the North Kazakhstan region, due to the growth in the production of flour, butter, cheese, drinking alcohol, bags and packaging bags, ready-mixed concrete, tractors, IPI amounted to 101.8%.

In the Aktobe region, the IPI amounted to 101.4% due to the growth in the extraction of crude oil, copper, iron, gold and chromium ores, the production of hot-rolled steel bars and rods.

In the Mangistau region, the IPI amounted to 100.9% due to an increase in the production of ammonia, nitric acid, Portland cement, oil and gas production services.

In the Turkestan region, due to the growth in the extraction of gold-bearing concentrates, the production of cheese, sausages, cotton, plastic pipes, gold in doré, ceramic bricks, the IPI amounted to 100.2%.

In the Pavlodar region, the IPI amounted to 99.2% due to a decrease in the extraction of copper ores and concentrates, the production of gasoline, diesel fuel, ferrochromium, and electricity.

In the Kyzylorda region, the IPI amounted to 96.1% due to a reduction in the production of crude oil, the production of rice, Portland cement, hydrocarbon liquefied gases.

# *2.1 Electricity consumption by zones and regions*

According to the System Operator, in January-May 2022, there was a decrease in the dynamics of electricity consumption of the republic in comparison with the same indicators in 2021 by 46.0 million kWh or 0.1%. Thus, in the western and southern zones of the republic, consumption increased by 6.2% and 1.7%, respectively.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **47 820.9** | **47,774.9** | **- 46.0 \_** | **- 0.1%** |
| 1 | Northern zone | 31,543.5 | 30,952.2 | -591.3 | -1.9% |
| 2 | Western zone | 5906.5 | 6271.8 | 365.3 | 6.2% |
| 3 | Southern zone | 10,371.0 | 10550.9 | 179.9 | 21.7% |
|  | ***incl . by regions*** |   |  |  |  |
| 1 | Akmola  | 4461.1 | 4571.3 | 110.2 | 2.5% |
| 2 | Aktobe | 2,881.5 | 2868.3 | -13.2 | -0.5% |
| 3 | Almaty  | 5,180.7 | 5287.7 | 107.0 | 2.1% |
| 4 | Atyrau  | 2,708.4 | 2884.3 | 175.9 | 6.5% |
| 5 | East Kazakhstan | 4,047.0 | 4465.7 | 418.7 | 10.3% |
| 6 | Zhambyl  | 2084.6 | 2029.0 | -55.6 | -2.7% |
| 7 | West Kazakhstan | 1,049.6 | 1,198.6 | 149.0 | 14.2% |
| 8 | Karaganda | 8,154.5 | 8,072.2 | -82.3 | -1.0% |
| 9 | Kostanay  | 2059.6 | 2078.0 | 18.4 | 0.9% |
| 10 | Kyzylorda  | 835.0 | 807.1 | -27.9 | -3.3% |
| 11 | Mangistau  | 2,148.5 | 2,188.9 | 40.4 | 1.9% |
| 12 | Pavlodar | 9,172.0 | 8,181.6 | -990.4 | -10.8% |
| 13 | North Kazakhstan | 767.7 | 715.0 | -52.7 | -6.9% |
| 14 | Turkestan | 2270.7 | 2426.9 | 156.2 | 6.9% |

#

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

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

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Total** | **19,257.1** | **18,597.6** | **-659.5** | **-3.4%** |
| 1. | ERG | 6441.8 | 6319.2 | -122.7 | -1.9% |
| 2. | Kazakhmys Corporation LLP | 1,539.7 | 1656.0 | 116.3 | 7.6% |
| 3. | Kazzinc LLP  | 1261.6 | 1,017.0 | -244.6 | -19.4% |
| 4. | Arcelor Mittal Temirtau" JSC | 1577.4 | 1565.4 | -12.0 | -0.8% |
| 5. | KKS LLP | 6,293.8 | 5928.9 | -364.9 | -5.8% |
| 6. | CAEPCO JSC | 2757.1 | 2809.9 | 52.9 | 1.9% |
| 7. | Zhambyl GRES | 2534.2 | 2417.4 | -116.8 | -4.6% |
| 8. | Oil and gas enterprises | 1002.5 | 701.6 | -300.9 | -30.0% |

In January-May 2022, there is an increase in electricity consumption by Samruk-Energy JSC companies by 36.6 million kWh or 1.1% compared to the same indicators in 2021.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **No.**  | **Name** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **"Samruk-Energy" JSC** | **3,359.2** | **3,395.8** | **36.6** | **1.1%** |
| 1. | "Bogatyr-Komir" LLP | 129.6 | 132.7 | 3.1 | 2.4% |
| 2. | Alatau Zharyk Companies » JSC | 415.0 | 448.1 | 33.1 | 8% |
| 3. | AlmatyEnergoSbyt LLP | 2814.6 | 2815.0 | 0.4 | 0% |

*2.3* *Electricity consumption by large consumers in Kazakhstan*

In January-May 2022, compared to the same period in 2021, electricity consumption by large consumers increased by 73.2 million kWh, or 0.5%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Consumer** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| 1 | Arcelor Mittal Temirtau" JSC | 1577.4 | 1565.4 | -12.0 | -0.8% |
| 2 | AZF ( Aksuysky ) "TNK Kazchrome " JSC | 2275.0 | 2,121.5 | -153.5 | -6.7% |
| 3 | Kazakhmys Smelting LLP | 500.3 | 535.8 | 35.5 | 7.1% |
| 4 | Kazzinc LLP | 1200.3 | 1,162.0 | -38.3 | -3.2% |
| 5 | "Sokolovsko-Sarbayskoye GPO" JSC | 691.2 | 677.8 | -13.4 | -1.9% |
| 6 | Kazakhmys Corporation LLP | 542.5 | 552.4 | 9.9 | 1.8% |
| 7 | AZF (Aktobe) "TNK Kazchrome" JSC | 1321.9 | 1286.7 | -35.3 | -2.7% |
| 8 | “Channel them. Satpaev" RSE | 86.0 | 108.6 | 22.6 | 26.2% |
| 9 | Kazphosphate LLP | 767.9 | 881.1 | 113.2 | 14.7% |
| 10 | NDFZ(part of the structure of Kazphosphate LLP) JSC | 638.0 | 743.5 | 105.4 | 16.5% |
| 11 | "Taraz Metallurgical Plant" LLP | 137.0 | 30.3 | -106.7 | -77.9% |
| 12 | "Ust-Kamenogorsk titanium -magnesium plant" JSC | 238.4 | 313.6 | 75.1 | 31.5% |
| 13 | Tengizchevroil LLP  | 785.5 | 791.6 | 6.1 | 0.8% |
| 14 | PAS (Pavlodar Aluminum Smelter) JSC | 393.6 | 404.9 | 11.3 | 2.9% |
| 15 | "KEZ" (Kazakhstan electrolysis plant) JSC | 1,579.0 | 1567.5 | -11.5 | -0.7% |
| 16 | "KEGOC" JSC | 2236.6 | 2134.6 | -102.0 | -4.6% |
| **Total** | **14,332.8** | **14 406** | **73.2** | **0.5%** |

# *Export-import of electrical energy*

In order to balance the production and consumption of electricity in January-May 2022, exports to the Russian Federation amounted to 408.6 million kWh, imports from the Russian Federation 513.0 million kWh .

Including export of JSC "KEGOC" to the Russian Federation 389.8 million kWh , import of electricity for the reporting period in the amount of 435.3 million kWh .

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **January - May** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| **Export of Kazakhstan** | **-1,457.7** | **-832.2** | **625.5** | **-42.9%** |
| **in Russia** | **-435.3** | **-408.6** | **26.7** | **-6.1%** |
| **in the IPS of Central Asia** | **-1,022.4** | **-423.6** | **598.8** | **-58.6%** |
| **Import of Kazakhstan** | **470.0** | **514.1** | **44.1** | **9.4%** |
| **From Russia** | **470.0** | **513.0** | **43.0** | **9.1%** |
| **Balance- flow "+" deficit, "-" surplus** | **-987.7** | **-318.1** | **669.6** | **-67.8%** |

# **Coal**

According to the Bureau of National Statistics, in Kazakhstan in January-May
In 2022, 47,436.9 thousand tons of hard coal were mined, which is 6.7% more than in the same period in 2021 ( 44,447.8 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-May** | **Δ, thousand tons** | **Δ, %** |
| **2021** | **2022** |
| 1 | Pavlodar | 27 658.8 | 29 248 | 1,589.2 | 5.7% |
| 2 | Karaganda | 13 502 | 14,385.2 | 883.2 | 6.5% |
| 3 | East Kazakhstan | 3 098.6 | 3442.3 | 343.7 | 11.1% |
|  | **Total for the Republic of Kazakhstan** | **44 447.8** | **47,436.9** | **2989.1** | **6.7%** |

In January-May 2022, Bogatyr Komir LLP produced 18,945.4 thousand tons, which is 4% more than in the corresponding period of 2021 (18,876.1 thousand tons).

The volume of coal sold in January- May 2022 amounted to 18 873.2 thousand tons, of which for the domestic market of the Republic of Kazakhstan 14 497.2 thousand tons, which is 8.6 % less than in the same period in 2021 (15 856.8 thousand tons) and for export (RF) - 4 376.0 thousand tons, which is 34.8 % more than in the corresponding period of 2021 ( 3,245.6 thousand tons).

According to the indicators for January- May 2022, compared to the same indicators in 2021, Bogatyr Komir LLP observed a decrease in coal sales by 229.1 thousand tons or 1.2%.

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-May** | **Δ,** **thousand tons** | **Δ, %****2022/2021** |
| **2021** | **2022** |
| **Total to the domestic market of the Republic of Kazakhstan** | **15,856.8** | **14,497.2** | **-1,359.6** | **-8.6%** |
| **Total for export to Russia** | **3245.6** | **4376.0** | **1130.4** | **34.8%** |

#

# **Renewable energy sources**

# *RES indicators in Kazakhstan*

According to the System Operator, the volume of electricity production by renewable energy facilities (SPP, WPP, BGS, small HPPs) of the Republic of Kazakhstan for January- May 2022 amounted to 1 898.1 million kWh . Compared to January -May 2021 (1,584.8 million kWh ), the increase was 313.3 million kWh or 19.8 %. 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.

According to Ministry of Energy of the Republic of Kazakhstan, as of May 2022, total 136 renewable energy facilities operate in Kazakhstan:

- 40 wind power plants with a capacity of 684 MW;

- 51 solar power plants with a capacity of 1093 MW;

- 40 hydroelectric power plants with a capacity of 280 MW;

- 5 objects of bioelectric power plants with a capacity of 8 MW.

Since the beginning of the year, 3 facilities with a total capacity of 55 MW (2 SPPs) have been put into operation:

- SES LLP "AlmatyEnergoProject";

- SES " Aisha " "AEC Asa" LLP;

- SES " Makpal" "Engineering Arena" LLP

According to the Ministry of Energy of the Republic of Kazakhstan, by the end of 2022, it is planned to put into operation 10 facilities with a total capacity of 290.6 MW.

million kWh

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ, million kWh** | **Δ, %** |
| **January - May** | **share in Kazakhstan, %** | **January - May** | **share in Kazakhstan, %** |
| **1** | **Production in the Republic of Kazakhstan** | **48,801.1** | **100%** | **48 108.4** | **100%** | **-692.7** | **-1.4%** |
| **2** | **RES generation in Kazakhstan** | **1584.8** | **3.2%** | **1,898.1** | **3.9%** | **313.3** | **19.8%** |
| ***3*** | ***RES generation, incl . by zones*** | ***share in the respective zone*** |
|  | *Northern zone* | 616.9 | 1.6% | 826.1 | 2.3% | **209.2** | **33.9%** |
|  | *Southern zone* | 830.1 | 15.7% | 944.0 | 16.2% | **113.9** | **13.7%** |
|  | *Western zone* | 137.8 | 2.3% | 128.0 | 2.0% | **-9.8** | **-7.1%** |
| ***4*** | ***RES generation, incl . by zones*** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *Northern zone* | 616.9 | 38.9% | 826.1 | 43.5% | **209.2** | **33.9%** |
|  | *Southern zone* | 830.1 | 52.4% | 944.0 | 49.7% | **113.9** | **13.7%** |
|  | *Western zone* | 137.8 | 8.7% | 128.0 | 6.7% | **-9.8** | **-7.1%** |
| ***5*** | ***RES generation, incl . by type*** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *SES* | 632.0 | 39.9% | 642.2 | 33.8% | **10.2** | **1.6%** |
|  | *WES* | 688.7 | 43.5% | 912.0 | 48.0% | **223.3** | **32.4%** |
|  | *Small HPPs* | 262.7 | 16.6% | 343.9 | 18.1% | **81.2** | **30.9%** |
|  | *BSU* | 1.4 | 0.1% | 0.0 | - | **-1.4** | **-** |

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

Samruk-Energy JSC (SPP, WPP and small HPPs) for January-May 2022 amounted to 144.6 million kWh , which is 10.5% higher compared to the same period in 2021 (130.9 million kWh ).

The share of RES electricity of Samruk-Energy JSC in January-May 2022 amounted to 7.6% of the volume of electricity generated by RES facilities in the Republic of Kazakhstan, while in January-May 2021 this figure was 8.3%. The decrease in the share of renewable energy sources of Samruk-Energo 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, as well as a decrease in generation at WPP Shelek 5MW by Samruk-Green LLP Energy.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ, million kWh** | **Δ, %** |
| **January May** | **share in Kazakhstan, %** | **January May** | **share in Kazakhstan, %** |
|  | **RES S-E, *including:*** | **130.9** | **8.3%** | **144.6** | **7.6%** | **13.7** | **10.5%** |
| *1* | *Cascade of small HPPs of AlES JSC 43.7 MW* | *58.2* | ***3.7%*** | *64.7* | *3.4%* | ***6.5*** | ***11.2%*** |
| *2* | *Samruk - Green LLP Energy » SPP 2MW + SPP 1MW* | *1.9* | ***0.1%*** | *2.0* | *0.1%* | ***0.1*** | ***5.3%*** |
| *3* | *Samruk - Green Energy LLP WPP Shelek 5 MW* | *7.2* | ***0.5%*** | *6.6* | *0.3%* | ***-0.6*** | ***-8.3%*** |
| *4* | *First Wind Power Plant LLP WPP 45 MW* | *63.6* | ***4.0%*** | *71.3* | *3.8%* | ***7.7*** | ***12.1%*** |

# **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, one meeting of the Advisory Committee on the Electricity Industry under the EEC Board was held (17th meeting on January 19), 10 meetings of the Subcommittee on the Formation of the EAEU General Electricity Project of the Advisory Committee on Electricity under the EEC Board (79th meeting on 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

15 April, 87th meeting 26 April, 88th meeting 17-18 May) and 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**

**The Mazhilis of Kazakhstan approved a bill on energy saving**

Deputies of the Mazhilis of the Parliament of the Republic of Kazakhstan approved in the second reading the draft law "On Amendments and Additions to Certain Legislative Acts of the Republic of Kazakhstan on Energy Saving and Energy Efficiency " .

The main goal of the bill is to achieve the final result of the ongoing policy in the field of energy saving and energy efficiency to reduce the energy intensity of the gross domestic product.

As stated in the conclusion of the committee on ecology and nature management, the bill provides for the improvement of the energy audit system by transferring the state function of certification of energy auditors to a competitive environment, expanding entrepreneurial activities in the field of energy audit and introducing new types of energy audit "express energy audit " and "targeted energy audit ", which is voluntary.

The subjects of the state energy register will be able to undergo an express energy audit instead of the mandatory one in case of implementing an energy management system, having a previous energy audit conclusion and ensuring that annual energy consumption is reduced by at least 5%.

A number of amendments to the bill are aimed at introducing preventive control without visiting the subjects in order to provide the subjects with the opportunity to independently eliminate violations.

During the work on the bill, the deputies introduced amendments to the second reading aimed at:

- maintaining the norms for monitoring water consumption by subjects of the state energy register;

- expansion of the list of subjects of the state energy register;

- mitigation of the conditions for conducting an express energy audit instead of a mandatory one;

- clarification of the procedure for conducting preventive control without visiting the subjects of control;

- clarification of the procedure for notification in the field of energy saving and energy efficiency ;

- introduction of a separate article providing for the establishment of the rights and obligations of an energy auditor .

A separate bloc of deputies introduced amendments to the Laws of the Republic of Kazakhstan “On Electric Power Industry” and “On Natural Monopolies”, aimed at legislative consolidation of the mechanism for transferring thermal power plants (hereinafter referred to as CHP) of cities of republican significance to alternative energy sources, namely gas, and covering the shortage of electricity .

**KYRGYZSTAN**

**Information on the progress of construction of CASA-1000 in Kyrgyzstan**

As part of the implementation of the CASA-1000 project in Kyrgyzstan, the construction of a 500 kV transmission line is underway.

In total, 455.6 kilometers of transmission lines will be laid in Kyrgyzstan from a 500 kV cell , which will be built specifically for this transmission line at the 500 kV Datka substation, from which the line will stretch through Jalal-Abad , Osh and Batken regions to the border with Tajikistan.

The construction of access roads to the construction sites of supports was completed for 955 supports (76%), digging pits for supports - 897 (72%), reinforcement and pouring of concrete - 742 (59%), installation of supports - 436 (35%). A total of 1241 supports will be built under the project.

Currently, active work is being carried out in Batken , Osh and Jalal-Abad regions. The work involves 84 units of special equipment and special vehicles, 44 units of vehicles and 230 workers, of which about 70% are local residents.

To mobilize specialists for the construction of infrastructure facilities in these three regions, 6 construction bases have been created.

Reference **:** CASA-1000 is designed to connect the energy systems of Central Asia with South Asia - Kyrgyzstan, Tajikistan with Afghanistan and Pakistan and develop mechanisms for electricity trade in accordance with international standards.

**The EAEU countries are discussing the project of an energy corridor from Russia to Kyrgyzstan through the territory of Kazakhstan**

The countries of the Eurasian Economic Union (EAEU) are discussing the possibility of building an energy corridor - a direct current line from Russia to Kyrgyzstan through the territory of Kazakhstan. This was announced during the Eurasian Economic Forum by Russian Energy Minister Nikolai Shulginov .

Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia plan to form a common energy market of the EAEU by January 1, 2025 by integrating national energy markets. One of the conditions for this process is to maintain a balance between the economic interests of producers and consumers.

To date, the EAEU countries independently form their national energy balance, based on domestic needs. The transition to a single market will allow energy systems to work complementing each other.

**UZBEKISTAN**

**Uzbekistan will switch to differentiated tariffs in energy supply**

Uzbekistan will introduce social norms for the consumption of electricity and natural gas. According to the Deputy Minister of Energy, these norms will cover the majority of household consumers.

Most residential consumers in Uzbekistan use energy supplies that do not exceed the expected social norm.

In May 2020, the government of Uzbekistan approved the introduction from 2022 of differentiated tariffs for electricity for the population by time of day, working days / weekends.

Differentiated electricity tariffs are used in many countries. They make it possible to introduce a flexible tariff setting scheme and, accordingly, payment for electricity consumption. The consumer receives the right to conclude contracts either at a tariff differentiated by the time of day (when, as a rule, electricity is cheaper at night), or at a single rate tariff (that is, the same price of electricity during the day). In addition, a tariff differentiated by volumes of consumption is used (using the base rate).

Earlier it was also reported that according to the state program for 2022, preparations for energy reform should begin this year.

**Uzbekistan plans to introduce social norms for the consumption of gas and electricity**

The Ministry of Finance, the Ministry of Energy and the Ministry of Economic Development of Uzbekistan announced the upcoming reform of the energy market, which provides for the introduction of social norms for the consumption of gas and electricity in the republic. A message about this is posted on the websites of these departments.

“Under the social norm of energy consumption is understood a certain amount of energy paid by the population at a reduced rate. That is, energy is sold at a relatively low (preferential) price up to a certain norm, and above this norm it is sold at market prices,” the report says. The draft of the relevant document will soon be submitted for public discussion.

“Reforms in the energy sector will lay the foundation for setting tariffs for natural gas and electricity on the principles of social justice, as well as for ensuring the continuity and expansion of energy supply to the population and entrepreneurs,” the message emphasizes.

In the Yunusabad district of Tashkent, since January 2019, the basic rate of electricity consumption was introduced as an experiment, which was 300 kWh per month per subscriber. If this norm was exceeded, a coefficient of 1.2 was applied. Due to the outbreak of the coronavirus pandemic , the experiment was stopped.

**Ministry of Energy of the Republic of Uzbekistan: An industrial-scale solar photovoltaic station has been launched in the Samarkand region**

A large solar photovoltaic plant with a capacity of 100 megawatts, built in the Nurabad district of Samarkand region, began supplying electricity to the only energy system in Uzbekistan on May 24.

The power plant will generate 260 million kWh of electricity per year and provide electricity to more than 80,000 homes.

In addition, the commissioning of the station will save 78 million cubic meters of natural gas per year and prevent the release of 100,000 tons of harmful emissions into the atmosphere. With this amount of saved gas, it is possible to provide natural gas to all existing households in the country within 10 days.

It is noteworthy that while the construction employed 400 workers, after commissioning, the plant created 25 new jobs.

The $100 million project was implemented through direct investment by the French company Total Eren .

It should be noted that this station is the second largest solar photovoltaic station in the history of Uzbekistan to generate electricity from renewable energy sources, and the first similar solar photovoltaic station was launched in August 2021 in the Karmaninsky district of the Navoi region .

Recall that this investment project was implemented in accordance with the Decree of the President of the Republic of Uzbekistan No. PP-4712 dated May 13, 2020.

For reference: by the end of 2023, in the Kattakurgan district of Samarkand region, the Emirati company Masdar will launch the second largest solar photovoltaic plant in the region with a capacity of 220 megawatts.

**THE REPUBLIC OF MOLDOVA**

**Moldova will purchase 30% of electricity from Ukrhydroenergo in May , the remaining volumes from Inter RAO Moldavskaya GRES**

Moldova intends to purchase 30% of the required electricity from Ukrhydroenergo in May , the remaining volumes will continue to be supplied by the thermal power plant CJSC Moldavskaya GRES (Pridnestrovie), owned by the Russian PJSC Inter RAO.

JSC " Energocom " has signed a contract with the company " Ukrhydroenergo " for the purchase of 30% of the required electricity in May."

**RUSSIA**

**The Government of the Russian Federation approved additional criteria for territorial grid organizations to improve the reliability of power supply**

Russian Prime Minister Mikhail Mishustin signed a resolution developed by the Ministry of Energy on establishing additional criteria for territorial grid organizations (TGOs), which will help improve the quality of electricity supply to consumers. The corresponding document is posted on the official portal of legal information.

At the end of last year, Vladimir Putin instructed the Ministry of Energy to step up work on consolidating TSOs. The head of state stressed that it is necessary to increase the responsibility of such companies for ensuring the reliability of energy supply to consumers, including by revising the criteria for classifying network owners as TSOs.

The adopted resolution clarifies the criteria for classifying power grid owners as TSOs, such parameters as the length of networks and the transformer capacity of equipment have been increased. The application of the new criteria will gradually deprive inefficient TSOs of this status.

Of the 1,683 TSOs registered in Russia today, 54% do not have investment development programs. Such TSOs are understaffed with an emergency reserve, they have an increased level of equipment wear and tear, they allocate no more than 12% of financial resources to capital investments, and in fact pursue a policy of short-term planning and inefficient operation of the distribution grid complex.

At the same time, they, along with other TSOs that have development investment programs , are subject to tariff regulation and “take away” part of the financial resources. Thus, these organizations create an unreasonable tariff burden for all groups of electricity consumers.

In addition, there is a suboptimal distribution of resources associated with the operation, maintenance and development of power grids. Often there is a duplication of operating costs for the operation of the power grid infrastructure (for example, for the maintenance of maintenance personnel and dispatching) and investment costs (for the construction of new substations).

**Over 4 months, electricity consumption in Russia increased by 2.2%**

Since the beginning of 2022, electricity generation in Russia as a whole amounted to 407.1 billion kWh , which is 2.2% more than the generation in January-April 2021. Electricity generation in the UES of Russia for four months of 2022 amounted to 400.9 billion kWh , which is also 2.2% more than the same period last year.

During four months of 2022, thermal power plants carried the main burden for meeting the demand for electricity in the UES of Russia, the generation of which amounted to 233.9 billion kWh , which is 2.6% more than in January-April 2021. HPP generation over the same period amounted to 62.9 billion kWh (1.6% less than in the first four months of 2021), NPP generation – 77.5 billion kWh (3.1% more than in the same period of 2021), the output of power plants of industrial enterprises is 23.8 billion kWh (1.4% more than in January-April 2021).

**Minsk and Moscow completed the preparation of a draft agreement on a unified electricity market**

The Ministries of Energy of Belarus and Russia have completed the preparation of a draft interstate agreement on the formation of a unified electricity market.

A draft interstate agreement on the formation of a unified electricity market has been prepared. It already has a finished look and will be sent for domestic procedures.

The agreement will establish the legal basis for the formation and functioning of the unified electricity market of the Union State, determine the powers of government bodies and infrastructure organizations of the two countries, as well as the subject composition of the market. The preparation of the draft rules for the functioning of the unified electricity market is at the final stage.

The formation of such a market will take place in three stages. It is planned that from January 1, 2024, electricity trading on the common market will be conducted through authorized business entities - one from each side. From 2025, the operation of the unified electricity market of the Union State will be synchronized with the operation of the electricity market of the Eurasian Economic Union. From 2027, deeper integration is envisaged, which involves expanding the subject composition of the market.

**Wind and solar power plants in Russia increased their output by 61.9% in four months**

Wind power plants increased their output by 121.6% in April, and by 88.2% in January-April.

Wind and solar power plants in Russia in January-April 2022 increased generation by 61.9% compared to the same period in 2021, to 2.77 billion kWh .

The total generation of RES (wind and solar power plants) in the UES of Russia in April 2022 amounted to 766.2 million kWh , which is 66.6% more than in April 2021, for four months - 2770.4 million kWh , which is 61.9% more than in the same period of 2021.

At the same time, in the overall structure of electricity generation, renewable energy generation accounted for 0.8% of total production in April and 0.7% for four months of 2022.

In particular, wind farms increased their output by 121.6% in April, and by 88.2% in January-April. Production at SPP increased by 12.2% and 12.8%, respectively.

**TAJIKISTAN**

**Tajikistan and Russia discussed issues of energy cooperation**

Bilateral cooperation in the field of energy was the topic of the conversation, which was held by Deputy Prime Minister of the Government of Tajikistan Usmonali Usmonzoda and Russian Energy Minister Nikolai Shulginov , who is in Dushanbe on a working visit.

The parties discussed the issue of Russia's participation in the Coordinating Electric Power Council of the countries of Central Asia as a full member.

In addition, the Minister of Energy and Water Resources of Tajikistan, Daler Juma, discussed with the Shulginovs the work of the joint venture OJSC Sangtudinskaya HPP-1 and issues related to the trouble-free operation of energy systems in Central Asia.

**Tajikistan and the World Bank signed an Agreement on the second phase of the rehabilitation of the Nurek HPP**

Tajikistan and the World Bank signed a $65 million Financing Agreement for the Nurek HPP Rehabilitation Project, Phase II (on a grant basis).

The document was signed on May 18 by Minister of Finance Fayziddin Kakhhorzoda , Chairman of OAHK "Barki Tojik " Mahmadumar Asozoda and World Bank Resident Representative in Tajikistan Ozan Sevimli .

Recall that the allocation of these funds at the end of December last year was approved by the Board of Directors of the World Bank.

The first phase of the Nurek HPP rehabilitation project, financed by the World Bank ($225.7 million), the Asian Infrastructure Investment Bank (AIIB) ($60 million) and the Eurasian Development Bank (EDB) ($40 million), was launched in March 2019.

As part of its implementation (2019-2023), it is planned to replace three of the nine hydroelectric units and key infrastructure components of the power plant, and replace six autotransformers that are used to transmit generated electricity. Also in the first phase, it is planned to improve the safety of the dam in order to protect the facility from seismic hazard and floods, as well as technical assistance to strengthen the operational, technical and financial management capacity of the energy company OJHC "Barki Tojik " .

As part of the second phase of the project (until 2028), the remaining six hydroelectric units, the Nurek bridge, the power plant and other key structures of the HPP will be rehabilitated.

In general, $326.9 million has been attracted to finance the first phase of the project, including $169.1 million in loans and $57.8 million in grants from the World Bank.

This project is expected to improve the reliability of electricity supply and increase the scale of green electricity exports from Tajikistan.

Nurek HPP provides about 50% of the total annual energy demand in Tajikistan and supplies most of the energy for export. Due to technical problems, the plant's original installed capacity has dropped from 3,000 MW to 2,320 MW over the past four decades. The facility is currently undergoing its first major renovation since its commissioning in 1972-1979.

Once rehabilitated, the HPP's capacity will increase to 3,214 MW, which will provide improved electricity supply during the cold winter months and generate much-needed revenue from increased electricity exports during the summer months.