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

**APRIL 2022**

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**May 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-April 2022 generated 39,533.5 million kWh of electricity, which is 502.8 million kWh or 1.3% 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-April** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **Total** | **40 036.3** | **39 533.5** | **-502.8** | **-1.3** |
| *TPP* | *32 735.8* | *31 756.5* | *-979.3* | *-3.0* |
| *GTES* | *3,549.9* | *3904.6* | *354.7* | *10.0* |
| *HPS* | *2,749.5* | *2698.5* | *-51.0* | *-1.9* |
| *WES* | *563.7* | *724.4* | *160.7* | *28.5* |
| *SES* | *436* | *449.5* | *13.5* | *3.1* |
| *BSU* | *1.4* | *0.0* | *-1.4* |  |
| **1** | **Northern** | **Total** | **thirty 967.9** | **29 773.7** | **-1194.2** | **-3.9** |
| *TPP* | *27 461.6* | *26 127.2* | *-1334.4* | *-4.9* |
| *GTES* | *1 068.5* | *1 050.2* | *-18.3* | *-1.7* |
| *HPS* | *1 989.6* | *2 018.5* | *28.9* | *1.5* |
| *WES* | *287.8* | *417.4* | *129.6* | *45.0* |
| *SES* | *159* | *160.4* | *1.4* | *0.9* |
| *BSU* | *1.4* | *0.0* | *-1.4* |  |
| **2** | **South** | **Total** | **4 305.8** | **4 654.3** | **348.5** | **8.1** |
| *TPP* | *2 999.4* | *3 375.1* | *375.7* | *12.5* |
| *GTES* | *759.9* | *680.0* | *-79.9* | *-10.5* |
| *HPS* | *106.3* | *104.0* | *-2.3* | *-2.2* |
| *WES* | *164.1* | *207.0* | *42.9* | *26.1* |
| *SES* | *276.1* | *288.2* | *12.1* | *4.4* |
| **3** | **Western** | **Total** | **4 762.6** | **5 105.5** | **342.9** | **7.2** |
| *TPP* | *2 274.8* | *2 254.2* | *-20.6* | *-0.9* |
| *GTES* | *2 375.1* | *2 750.4* | *375.3* | *15.8* |
| *WES* | *111.8* | *100.0* | *-11.8* | *-10.6* |
| *SES* | *0.9* | *0.9* | *0* | *0* |

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

In January-April 2022, compared to the same period in 2021, electricity generation increased significantly in Akmola , Atyrau , East Kazakhstan, Zhambyl , West Kazakhstan , Kostanay and Mangystau regions. A sharp increase in electricity production in the Zhambyl region by 473.9 million kWh . or 47.4% 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 Aktobe, Almaty, Karaganda, Kyzylorda , Pavlodar, North Kazakhstan and Turkestan regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **January-April** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| 1 | Akmola | 1973.2 | 2053.8 | 80.6 | 4.1 |
| 2 | Aktobe | 1372.5 | 1315.2 | -57.3 | -4.2 |
| 3 | Almaty | 2416.5 | 2345.4 | -71.1 | -2.9 |
| 4 | Atyrau | 2328.7 | 2541.3 | 212.6 | 9.1 |
| 5 | East Kazakhstan | 3,065.8 | 3,125.4 | 59.6 | 1.9 |
| 6 | Zhambyl | 1000.8 | 1474.7 | 473.9 | 47.4 |
| 7 | West Kazakhstan | 816.8 | 872.7 | 55.9 | 6.8 |
| 8 | Karaganda | 5615.8 | 5,113.1 | -502.7 | -9.0 |
| 9 | Kostanay | 440.5 | 476.3 | 35.8 | 8.1 |
| 10 | Kyzylorda | 243.8 | 227.9 | -15.9 | -6.5 |
| 11 | Mangistau | 1617.1 | 1,691.5 | 74.4 | 4.6 |
| 12 | Pavlodar | 17,351.9 | 17,030.6 | -321.3 | -1.9 |
| 13 | North Kazakhstan | 1,148.2 | 659.3 | -488.9 | -42.6 |
| 14 | Turkestan | 644.7 | 606.3 | -38.4 | -6.0 |
|  | **Total for Kazakhstan** | **40,036.30** | **39,533.5** | **-502.8** | **-1.3** |

*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-April 2022 amounted to 12,248.1million kWh. The decrease in electricity generation compared to the same period in 2021 amounted to 419.6 million kWh or 3.3%. The decrease is observed at all power plants, with the exception of First Wind Power Plant LLP.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ 2022/2021** |
| **January-April** | **share in Kazakhstan, %** | **January-April** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **"Samruk-Energy" JSC** | **12 667.7** | **31.6%** | **12,248.1** | **31.0%** | **-419.6** | **-3.3** |
| *1* | *AlES JSC* | 1 961.1 | **4.9%** | 1 879.5 | **4.8%** | *-81.6* | *-4.2* |
| *2* | *"Ekibastuz GRES-1" LLP* | 7 688.4 | **19.2%** | 7 680.7 | **19.4%** | *-7.7* | *-0.1* |
| *3* | *"Ekibastuz GRES-2" JSC* | 2 529.9 | **6.3%** | 2 278.5 | **5.8%** | *-251.4* | *-9.9* |
| *4* | *"Shardara HPP" JSC* | **222.7** | **0.6%** | *147.6* | **0.4%** | *-75.1* | *-33.7* |
| *5* | *"Moinak HPP" JSC* | **203.9** | **0.5%** | *195.6* | **0.5%** | *-8.3* | *-4.1* |
| *6* | *Samruk-Green Energy» LLP* | 6.8 | **0.0%** | 6.7 | **0.0%** | *-0.10* | *-1.5* |
| *7* | *"First wind power plant" LLP* | 54.9 | **0.1%** | *59.5* | **0.2%** | *4.6* | *8.4* |

# *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 31.0 %.

**Kazakhstan**

**39 533,5**

**млн. кВтч**

**Others**

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

The industrial production index (hereinafter referred to as IPI) in January-April 2022 compared to January-April 2021, amounted to 104.7%. An increase in production volumes was recorded in 16 regions of the republic, a decrease is observed in the Kyzylorda region.

**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, tiles, cement and concrete bricks, cars and trucks, the IPI amounted to 113.5%.

In the Zhambyl region, due to the growth in the extraction of copper ores, the production of sausages, sugar, pharmaceuticals, phosphorus, diesel fuel, gold in the doré alloy, the IPI amounted to 110%.

In the Akmola region, due to an increase in the extraction of gold-bearing ores, the production of flour, gold in doré, natural uranium, ready-mixed concrete, diesel fuel, pesticides, trucks, the IPI amounted to 109.6%.

In the Atyrau region, the IPI was 109% due to an increase in the production of crude oil, the production of gasoline, diesel fuel, hydrocarbon liquefied gases.

In the East Kazakhstan region, the IPI amounted to 106.8% due to the growth in the production of copper concentrates, copper and copper-zinc ores, the production of refined copper, enriched uranium, refined gold, gold in doré.

In the Almaty region, the IPI was 105.3% due to an increase in the production of soft drinks, chocolate, cigarettes, prepared animal feed, ready-mixed concrete, medicines, paper and cardboard.

In the city of Shymkent, due to an increase in the production of medicines, fuel oil, diesel fuel, Portland cement, aluminum wire, hot-rolled steel bars and rods, ready-mixed concrete, the IPI amounted to 104.8%.

In the city of Nur -Sultan, the IPI amounted to 103.7% due to the growth in the production of refined gold, soft drinks, ready-mixed concrete, plastic pipes, plastic packaging products, building prefabricated structures made of cement and concrete, and the production of railway locomotives.

In the Karaganda region, the growth of IPI amounted to 103.6% due to an increase in the extraction of copper and lead-zinc ores, the production of pig iron, blister copper, flat and sheet products, unalloyed steel, steel bars and rods.

In West Kazakhstan IPI amounted to 102.6% due to the growth in gas condensate production, production of plastic pipes, seamless steel pipes, ready-mixed concrete.

In the North Kazakhstan region, due to the growth in the extraction of uranium and thorium ores, the production of flour, butter, cheese, drinking alcohol, bags and packaging bags, ready-mixed concrete, the IPI amounted to 102,3%.

In the Turkestan region due to the growth in the extraction of gold concentrates, the production of cheese, cotton, plastic pipes, gold in doré, ceramic bricks The IPI was 102%.

In the Kostanay region, the IPI amounted to 101.5% due to an increase in the extraction of aluminum ores, iron ore pellets, the production of flour, bran, ready-made animal feed, hot-rolled steel bars and rods, tractors, combines and trucks.

In the Mangistau region, the IPI amounted to 100.6% due to an increase in the production of bitumen, ammonia, nitric acid, Portland cement, and oilfield equipment .

In the Aktobe region, the IPI amounted to 100.5% due to the growth in the extraction of crude oil, copper, iron and gold ores, the production of chromium salts, hot-rolled steel bars and rods.

In the Pavlodar region, the IPI amounted to 100.2% due to an increase in the production of coal, the production of ferrosilicochromium, ferrosilicon manganese, aluminum oxide, gold and unprocessed silver, parts of railway locomotives, and electrical equipment.

In the Kyzylorda region, the IPI amounted to 96.4% due to a reduction in the production of crude oil, the production of rice, Portland cement, hydrocarbon liquefied gases, building prefabricated structures made of concrete.

# *2.1 Electricity consumption by zones and regions*

According to the System Operator, in January-April 2022, there was an increase in the dynamics of electricity consumption of the republic in comparison with the same indicators in 2021 by 83.1 million kWh or 0.2%. Thus, in the western and southern zones of the republic, consumption increased by 6.5% and 2.5%, respectively.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January-April** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **39,093.9** | **39,177.0** | **83.1** | **0.2** |
| 1 | Northern zone | 25,871.7 | 25,434.5 | -437.2 | -1.7 |
| 2 | Western zone | 4,767.4 | 5,077.3 | 309.9 | 6.5 |
| 3 | Southern zone | 8454.9 | 8665.2 | 210.3 | 2.5 |
|  | ***incl . by regions*** |   |  |  |  |
| 1 | Akmola  | 3329.5 | 3,693.1 | 363.6 | 10.9 |
| 2 | Aktobe | 6,690.9 | 6,619.9 | -71.0 | -1.1 |
| 3 | Almaty  | 3,755.3 | 3,859.1 | 103.8 | 2.8 |
| 4 | Atyrau  | 645.2 | 604.1 | -41.1 | -6.4 |
| 5 | East Kazakhstan | 1694.7 | 1721.6 | 26.9 | 1.6 |
| 6 | Zhambyl  | 7429.6 | 6,638.4 | -791.2 | -10.6 |
| 7 | West Kazakhstan | 2173.3 | 2323.5 | 150.2 | 6.9 |
| 8 | Karaganda | 1,742.3 | 1,780.4 | 38.1 | 2.2 |
| 9 | Kostanay  | 2326.6 | 2,298.3 | -28.3 | -1.2 |
| 10 | Kyzylorda  | 851.8 | 973.4 | 121.6 | 14.3 |
| 11 | Mangistau  | 4292.8 | 4362.1 | 69.3 | 1.6 |
| 12 | Pavlodar | 1,840.3 | 1982.5 | 142.2 | 7.7 |
| 13 | North Kazakhstan | 1630.0 | 1651.2 | 21.2 | 1.3 |
| 14 | Turkestan | 691.7 | 669.4 | -22.3 | -3.2 |

#

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

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

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January-April** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Total** | **15,604.7** | **15,107.1** | **-497.6** | **-3.2** |
| 1. | ERG | 5228.8 | 5,039.9 | -188.9 | -3.6 |
| 2. | Kazakhmys Corporation LLP | 1,154.6 | 1375.6 | 221.0 | 19.1 |
| 3. | Kazzinc LLP  | 1,021.5 | 1000.4 | -21.1 | -2.1 |
| 4. | Arcelor Mittal Temirtau" JSC | 1269.5 | 995.3 | -274.3 | -21.6 |
| 5. | KKS LLP | 2251.0 | 2291.3 | 40.3 | 1.8 |
| 6. | CAEPCO JSC | 2,117.9 | 2015.0 | -102.9 | -4.9 |
| 7. | Zhambyl GRES | 836.3 | 701.6 | -134.7 | -16.1 |
| 8. | Oil and gas enterprises | 1,725.2 | 1688.2 | -37.1 | -2.1 |

In January-April 2022, there is an increase in electricity consumption by the companies of Samruk-Energy JSC by 20.6 million kWh or 0.7% compared to the same indicators in 2021.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **No.**  | **Name** | **January-April** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **JSC " Samruk-Energo "** | **2,777.06** | **2,797.7** | **20.6** | **0.7** |
| 1. | Bogatyr- Komir LLP | 108.14 | 109.4 | 1.2 | 1.1 |
| 2. | JSC Alatau Zharyk Companies » | 351.40 | 386.3 | 34.9 | 9.9 |
| 3. | LLP " AlmatyEnergoSbyt " | 2,317.52 | 2302.0 | -15.5 | -0.7 |

#

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

In January-April 2022, compared to the same period in 2021, electricity consumption by large consumers increased by 237.1 million kWh , or 2.1%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Consumer** | **January-April** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| 1 | Arcelor Mittal Temirtau" JSC | 1269.5 | 1284.7 | 15.2 | 1.2 |
| 2 | AZF ( Aksuysky ) "TNK Kazchrome " JSC | 1,835.7 | 1691.8 | -143.9 | -7.8 |
| 3 | Kazakhmys Smelting LLP | 403.7 | 433.5 | 29.8 | 7.4 |
| 4 | Kazzinc LLP | 969.4 | 945.5 | -23.9 | -2.5 |
| 5 | "Sokolovsko-Sarbayskoye GPO" JSC | 560.1 | 559.0 | -1.1 | -0.2 |
| 6 | Kazakhmys Corporation LLP | 438.8 | 445.7 | 6.9 | 1.6 |
| 7 | AZF (Aktobe) "TNK Kazchrome" JSC | 1,039.2 | 997.8 | -41.4 | -4.0 |
| 8 | “Channel them. Satpaev" RSE | 59.9 | 83.1 | 23.2 | 38.7 |
| 9 | Kazphosphate LLP | 570.8 | 708.4 | 137.6 | 24.1 |
| 10 | NDFZ(part of the structure of Kazphosphate LLP) JSC | 465.9 | 596.0 | 130.1 | 27.9 |
| 11 | "Taraz Metallurgical Plant" LLP | 120.7 | 30.3 | -90.4 | -74.9 |
| 12 | "Ust-Kamenogorsk titanium -magnesium plant" JSC | 175.2 | 251.0 | 75.7 | 43.2 |
| 13 | Tengizchevroil LLP  | 629.7 | 630.6 | 0.9 | 0.1 |
| 14 | PAS (Pavlodar Aluminum Smelter) JSC | 312.6 | 322.8 | 10.2 | 3.3 |
| 15 | "KEZ" (Kazakhstan electrolysis plant) JSC | 1261.0 | 1251.5 | -9.5 | -0.8 |
| 16 | "KEGOC" JSC | 1,834.2 | 1,809.8 | -24.4 | -1.3 |
| **Total** | **11480.6** | **11,717.7** | **237.1** | **2.1** |

# *Export-import of electrical energy*

In order to balance the production and consumption of electricity in January-April 2022, exports to the Russian Federation amounted to 331.4 million kWh , imports from the Russian Federation 424.9 million kWh .

Including export from "KEGOC" JSC to the Russian Federation 316.0 million kWh, import of electricity for the reporting period in the amount of 363.1 million kWh.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **January - April** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| **Export of Kazakhstan** | **-1,309.5** | **-754.4** | **555.0** | **-42.4** |
| **in Russia** | **-337.3** | **-331.4** | **5.9** | **-1.7** |
| **in the IPS of Central Asia** | **-972.2** | **-423.0** | **549.2** | **-56.5** |
| **Import of Kazakhstan** | **362.2** | **426.0** | **63.8** | **17.6** |
| **From Russia** | **362.2** | **424.9** | **62.7** | **17.3** |
| **Balance- flow "+" deficit, "-" surplus** | **-947.2** | **-328.4** | **618.9** | **-65.3** |

# **Coal**

In January-April 2022, Kazakhstan produced 38,882.1 thousand tons of hard coal, which is 7.5% more than in the same period in 2021 (36,155.6 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-April** | **Δ, thousand tons** | **Δ, %** |
| **2021** | **2022** |
| 1 | Pavlodar | 22,645.6 | 24,138.3 | 1492.7 | 6.6 |
| 2 | Karaganda | 10,789.4 | 11,547.1 | 757.7 | 7 |
| 3 | East Kazakhstan | 2592.9 | 2,883.7 | 290.8 | 11.2 |
|  | **Total for the Republic of Kazakhstan** | **36,155.6** | **38,882.1** | **2,726.5** | **7.5** |

In January-April 2022, Bogatyr Komir LLP produced 15,795.9 thousand tons, which is 3% more than in the corresponding period of 2021 (15,332.6 thousand tons).

The volume of coal sold in January-April 2022 amounted to 15,755.5 thousand tons, of which 12,321.4 thousand tons went to the domestic market of the Republic of Kazakhstan, which is 7.3% less than in the same period of 2021 (13,295, 1 thousand tons) and for export (RF) - 3,434.1 thousand tons, which is 55.8% more than in the corresponding period of 2021 (2,203.7 thousand tons).

According to the indicators for January-April 2022, in comparison with similar indicators in 2021, Bogatyr Komir LLP has an increase in coal sales by 256.6 thousand tons or 1.7%.

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-April** | **Δ,** **thousand tons** | **Δ, %****2022/2021** |
| **2021** | **2022** |
| **Total to the domestic market of the Republic of Kazakhstan** | **13,295.1** | **12,321.4** | **-973.7** | **-7.3** |
| **Total for export to Russia** | **2203.7** | **3434.1** | **1230.3** | **55.8** |

#

# **Renewable energy sources**

# *RES indicators in Kazakhstan*

According to the System Operator, the volume of electricity generation by renewable energy facilities (SPP, WPP, BGS, small HPPs) of the Republic of Kazakhstan in January- April 2022 amounted to 1,376.9 million kWh . Compared to January-April 2021 (million 1,165.5 kWh ), the increase was 211.4 million kWh or 18.1 %. 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.

Total according to Ministry of Energy of the Republic of Kazakhstan, as of April 2022, there are 136 renewable energy facilities 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.

At the beginning of the year, 2 facilities with a total capacity of 55 MW (2 SPPs) were put into operation:

- SES LLP "AlmatyEnergoProject";

- SES "Aisha" "AEC Asa" 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 April** | **share in Kazakhstan, %** | **January April** | **share in Kazakhstan, %** |
| **1** | **Production in the Republic of Kazakhstan** | **40,036.3** | **100%** | **39,533.5** | **100%** | **-502.8** | **-1.3** |
| **2** | **RES generation in Kazakhstan** | **1,165.5** | **2.9%** | **1376.9** | **3.5%** | **211.4** | **18.1** |
| ***3*** | ***RES generation, incl . by zones*** | ***share in the respective zone*** |
|  | *Northern zone* | 483.1 | 1.6% | 621.8 | 2.1% | **138.7** | **28.7** |
|  | *Southern zone* | 569.7 | 13.2% | 654.2 | 14.1% | **84.5** | **14.8** |
|  | *Western zone* | 112.7 | 2.4% | 100.9 | 2.0% | **-11.8** | **-10.5** |
| ***4*** | ***RES generation, incl . by zones*** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *Northern zone* | 483.1 | 41.5% | 621.8 | 45.2% | **138.7** | **28.7** |
|  | *Southern zone* | 569.7 | 48.9% | 654.2 | 47.5% | **84.5** | **14.8** |
|  | *Western zone* | 112.7 | 9.7% | 100.9 | 7.3% | **-11.8** | **-10.5** |
| ***5*** | ***RES generation, incl . by type*** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *SES* | 436.0 | 37.4% | 449.5 | 32.6% | **13.5** | **3.1** |
|  | *WES* | 563.7 | 48.4% | 724.4 | 52.6% | **160.7** | **28.5** |
|  | *Small HPPs* | 164.4 | 14.1% | 203.0 | 14.7% | **38.6** | **23.5** |
|  | *BSU* | 1.4 | 0.1% | - | - | **-1.4** | **-** |

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

Samruk-Energy JSC (SPP, WPP and small HPPs) in January-April 2022 amounted to 110.7 million kWh , which is 8.3% higher compared to the same period in 2021 (102.2 million kWh ).

The share of RES electricity of Samruk-Energy JSC in January-April 2022 amounted to 8.0% of the volume of electricity generated by RES facilities in the Republic of Kazakhstan, while in January-April 2021 this figure was 8.8%. 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, as well as a decrease in generation at WPP Shelek 5MWby Samruk-Green Energy LLP.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2021** | **2022** | **Δ, million kWh** | **Δ, %** |
| **January April** | **share in Kazakhstan, %** | **January April** | **share in Kazakhstan, %** |
|  | **RES S-E, *including:*** | **102.2** | **8.8%** | **110.7** | **8.0%** | **8.5** | **8.3** |
| *1* | *Cascade of small HPPs of AlES JSC 43.7 MW* | 40.5 | **3.5%** | 44.5 | 3.2% | **4.0** | **9.9** |
| *2* | *Samruk - Green LLP Energy » SPP 2MW + SPP 1MW* | 1.3 | **0.1%** | 1.4 | 0.1% | **0.1** | **7.7** |
| *3* | *Samruk - Green Energy LLP WPP Shelek 5 MW* | 5.5 | **0.5%** | 5.3 | 0.4% | **-0.2** | **-3.6** |
| *4* | *First Wind Power Plant LLP WPP 45 MW* | 54.9 | **4.7%** | 59.5 | 4.3% | **4.6** | **8.4** |

# **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), 5 meetings of the Subcommittee on the Formation of the EAEU General Electricity Project of the Advisory Committee on the Electricity Industry 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
April 15, 87 meeting on April 26 ), and also on March 4, 2022, Kazakhstan and Russia took part in a working meeting on the procedure for registering free bilateral contracts for mutual trade in electricity in 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)*

**ARMENIA**

**The wholesale energy market has been liberalized in Armenia : consumers can buy electricity from suppliers at an agreed price.** Thanks to this program, for the first time, market participants will be able to participate in setting prices (tariffs) for electricity and contribute to the harmonization of supply and demand.

*About the program*

Globally, the process of liberalization of the Armenian [energy market](http://arka.am/ru/news/economy/poetapnaya_liberalizatsiya_energorynka_armenii_startuet_s_1_fevralya_2022_goda_zamministra/) began in 2018 and is currently at its final stage. For its implementation, USAID provided Armenia with a grant of $8.5 million.

The goals of the program are to support the Armenian government in reforming the electricity market, work on simplifying regulatory practices in Armenia, taking into account EU directives, promoting the creation of a favorable environment for investors to increase competitiveness, development of the electricity industry and regional trade.

The activities of the Program for Liberalization of the Market and Electricity Trade are carried out in three key areas: the development of the electricity market, the diversification of supplies and the promotion of interstate electricity trade with Georgia.

**KAZAKHSTAN**

**On the commissioning of new generating capacities in the Republic of Kazakhstan.** In accordance with the instruction of the Head of State, the Ministry of Energy developed the Energy Balance of the Republic of Kazakhstan until 2035, within the framework of which modeling of the development of the energy complex was carried out with the calculation of the forecast values of production and consumption of electricity, the required volumes and structure of commissioning of new generating capacities.

The maximum electrical load by 2035 will reach the level of 22.7 GW. Taking into account the need to provide a power reserve of up to 10%, the need by 2035 will be 24 GW.

According to the Energy Balance, by 2035 the volume of electricity consumption will be about 153 billion kWh . Taking into account the volumes of electric power expected to be retired over time, the domestic energy system is in dire need of new energy sources . It should also be noted that the generation sector is affected by a number of factors to reduce the environmental impact, including the commitments made to reduce greenhouse gas emissions ( *by 2030, reducing emissions by 15% compared to 1990* ), achieving carbon neutrality by 2060.

In this regard, by 2035 it is planned to commission more than 10 GW of electric power, including about 6.5 GW of facilities for the use of renewable energy sources, mainly wind farms.

In order to minimize the negative impact of solar and wind power plants on the daily schedule of electricity production and consumption, it is planned to introduce requirements for the use of electricity storage systems by renewable energy facilities.

Unfortunately, given the instability of electricity generation from renewable energy facilities due to the dependence on weather conditions, time of year and day, it is impossible to consider them as sources of basic power in the country's energy system.

Due to the widespread refusal of international financial organizations to finance projects for the construction of coal-fired power plants, further commissioning of new coal-fired generation is limited.

In this regard, the Energy Balance of the country provides for a nuclear power plant with an installed capacity of at least 2.4 GW as a new source of basic generation.

**The Ministry of Energy of the Republic of Kazakhstan initiates amendments to the legislation to strengthen functions in terms of energy control**

Today, 37 combined heat and power plants (hereinafter referred to as CHPPs) operate in the country, 10 of which are in communal ownership *(Semey, Kostanay , Kentau , Uralsk, Arkalyk, Shakhtinsk, Nur -Sultan, Kyzylorda , Taraz )* , 2 - in the state *(LLP "MAEC Kazatomprom ")* , 3 - in the quasi-state *(JSC " AlES ")* and 22 - in private ownership.

At the same time, the number of CHPPs, the operation of which exceeds 50 years, is 28 units (76%), over 30 years - 9 units (24%).

The average age of CHPP is 61 years.

The structure of 11 energy enterprises , in addition to thermal power plants, includes main and intra-quarter heating networks in the following cities: Semey, Kostanay , Ust-Kamenogorsk, Uralsk, Atyrau, Aktau, Arkalyk, Kyzylorda , Tekeli and Rudny.

The average wear and tear of the main equipment of the CHPP is 66%. At the same time, the wear of the power equipment of the CHP Uralsk, Taraz , Kentau , Kyzylorda and Stepnogorsk exceed 80%.

As part of the ongoing reform to reduce barriers to business development in 2018, control over energy organizations by the state energy control body has been weakened.

In this regard, the Ministry of Energy initiates amendments to the legislation to strengthen the functions of the state body for energy control, including the execution of repair campaigns and investment programs for power plants and networks.

Amendments to the legislation will also touch upon the issues of increasing the responsibility of the managers of power plants for the quality of repair work and the targeted use of funds.

At the same time, today, on behalf of the Head of State, work has begun on a large-scale technological audit of energy-producing organizations. Based on the results of this audit, a list of measures aimed at the modernization of power plants, including their decommissioning, will be determined.

In general, the energy sector is experiencing a lack of financial resources for the implementation of investment projects for the modernization, reconstruction, replacement of physically and morally obsolete equipment, as well as for major repairs of power plant equipment.

To solve the problems, the Ministry of Energy of the Republic of Kazakhstan is preparing a program for the modernization of thermal power plants.

**The national electrical network of Kazakhstan is expected to undergo a radical modernization.**

The Ministry of Energy of the country approved the Forecast balance of electric energy and capacity of the Unified Electric Power System of Kazakhstan (UES) until 2035. To cover the prospective energy consumption in the UES of the Republic of Kazakhstan, by 2035 it is planned to introduce about 17.5 GW of new generating capacities. Their structure is represented by various technologies and their locations.

In this regard, KEGOC announces that it is starting to develop a predictive model for the development of the National Electric Grid.

The large-scale modernization of the National Electric Grid should be synchronized with the commissioning of new generating capacities, ensuring the necessary interregional and interstate power flows .

Future configuration of the National Electric Grid using modern Smart technologies Grid , should ensure the energy security of the country by creating conditions for the unification of the western energy zone with the UES of Kazakhstan, strengthening the southern energy zone with the ability to work, if necessary, separately from the unified energy system of Central Asia, large-scale involvement in the energy balance of renewable energy sources of the western, eastern and southern regions of the country, including the unique wind potential of the Dzhungar Gate and the Shelek Corridor through the construction of the necessary network infrastructure and the introduction of energy storage systems.

**The difference between electricity tariffs is planned to be reduced in Kazakhstan.** The Single Electricity Purchaser model will not be implemented in Kazakhstan. In accordance with the National Project for the Development of Entrepreneurship for 2021-2025, a phased reduction in the difference and the abolition of tariff differentiation between consumer groups for electricity services are envisaged, which can also significantly affect electricity tariffs, primarily for the population.

In this connection, the Ministry of National Economy is comprehensively considering the issue of a possible painless reduction for the population of the difference in differentiated tariffs, taking into account the specifics of all regions of the country and the economic circumstances prevailing in them.

The introduction of the Single Purchaser model is a modern solution, but it requires considerable study and detailed comprehensive study, taking into account the interests of the population and business. For this reason, the deputy prime minister called the urgent transition to the model of a single purchaser premature.

**KYRGYZSTAN**

**The Ministry of Energy of the Kyrgyz Republic issued permits to 90 companies for the construction of solar, wind power plants and small hydropower plants.** To date, 149 certificates (for the construction of power plants) have been issued to 90 companies for a total capacity of 3,726 MW. This almost corresponds to the entire generation in Kyrgyzstan.

**Kyrgyzstan expects to increase the capacity of its HPPs by 6 GW by 2030.**

The Government of Kyrgyzstan plans to increase the country's hydropower potential by 6 GW by 2030. About 70% of the hydropower potential of our country remains unrealized. In order to develop this potential, priority projects have been identified for the development of hydropower with a capacity of more than 6 GW until 2030.

As part of the implementation of these plans, the construction of the large Kambar-Ata-1 HPP will begin in the near future, which will increase the volume of the reservoir available at the Kambar-Ata-2 HPP to 6 billion cubic meters. Which, in turn, will lead to an increase in the volume of electricity generated at these stations.

**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.

**UZBEKISTAN**

**For 3 months of 2022, 5 power plants were launched in Uzbekistan.** Another 2 new stations are expected to be put into operation - the total capacity of which will be 1474 MW. As a result, 6 new thermal power plants and one solar photoelectric power plant will start operating this year . As a result, the total capacity of the energy system of Uzbekistan will exceed 16,000 MW. Also, it is worth noting that in 2022, seven hydroelectric power plants with a total capacity of 173 MW will be built and modernized in Samarkand, Surkhandarya and Tashkent regions. For information, during 2017-2021 , 3547 MW of new capacity was created.

**In 2022-2026, it is planned to build 15 new hydroelectric power plants (HPPs) and upgrade five existing HPPs** , which will make it possible to produce an additional 868,000 kWh of electricity per year. It is planned to take measures to increase the energy efficiency of the economy by 20% by 2026 and reduce emissions of harmful gases and the atmosphere by 20% through the active introduction of green economy technologies in all areas.

It is expected that in 2022 seven HPPs with a capacity of 173 MW will be built in Samarkand, Surkhandarya and Tashkent regions, in 2023 the modernization of one HPP in the Tashkent region will be completed and two HPPs with a capacity of 29 MW will be put into operation in Kashkadarya and Andijan regions. Along with this, in 2024, one HPP each in Andijan, Namangan, Surkhandarya and Tashkent regions will be modernized and four HPPs with a capacity of 127.4 MW will be put into operation, and in 2025-2026 - four HPPs with a capacity of 544 MW in Kashkadarya and Tashkent regions. areas.

**THE REPUBLIC OF MOLDOVA**

**The International Energy Agency (IEA) has published a report and a roadmap to ensure the integration of renewable energy sources (RES) in the energy system of the Republic of Moldova.** The roadmap was launched to support Moldovan politicians at all levels to achieve the set energy goals and develop the concept of a clean, safe and modern electricity supply system in Moldova. The roadmap prepared by the IEA looks at concrete steps that the government can take to improve the functioning of the energy system and promote investment in the use of renewable energy. It will also entail removing barriers to the creation and deployment of flexible electricity markets with enhanced regional coordination.

**RUSSIA**

**The Government of the Russian Federation has expanded the program of concessional lending for strategic enterprises to organizations of the fuel and energy complex** , **it can be used to obtain a loan at a rate of up to 11% per year.** The government is launching a special loan program to support the backbone organizations of the fuel and energy complex (FEC). For such organizations, loans will be available at a rate of no more than 11% per annum for up to 12 months. One enterprise will be able to receive up to 10 billion rubles, a group of companies - up to 30 billion rubles. Earlier, the government launched preferential loan programs to support the backbone organizations of the agro-industrial complex, as well as industry and trade.

**Putin instructed to extend the energy strategy of the Russian Federation until 2050 and approve it by September 15.** The planning horizon of the Energy Strategy of the Russian Federation should be extended until 2050, the updated document should be approved by September 15, Russian President Vladimir Putin said on Thursday, summing up the results of the meeting on energy.

“First of all, I ask the government to take into account the results of today's discussion when preparing the Energy Strategy of Russia. As we agreed, its planning horizon should be extended until 2050,” he said. The head of state added that the strategy "needs to be approved by September 15 this year."

The current Energy Strategy of the Russian Federation is designed until 2035, it was approved in 2020. The document fixes as the strategic goals of the fuel and energy complex the promotion of the socio-economic development of Russia, as well as the strengthening and preservation of its positions in the world energy sector.

**Russia and Kazakhstan discussed bilateral cooperation in the fuel and energy sector**

Minister of Energy of the Russian Federation Nikolai Shulginov and Minister of Energy of the Republic of Kazakhstan Bolat Akchulakov at a working meeting discussed bilateral cooperation between countries in the fuel and energy sector.

One of the topics of the meeting was cooperation in the gas sector. The parties identified the potential for deepening cooperation in terms of gasification of the northern and eastern regions of the Republic of Kazakhstan.

Separately, the ministers discussed cooperation in the electricity sector. In October last year, the "System Operator of the Unified Energy System of Russia" received observer status at the Coordinating Electric Power Council of Central Asia. Nikolai Shulginov proposed to strengthen cooperation in this area.

Nikolai Shulginov and Bolat Akchulakov also discussed the partnership of countries in the oil sector, including the transit of Kazakh oil through the territory of Russia.

**TAJIKISTAN**

**Tajikistan exported electricity worth more than $7.3 million in the first quarter of this year, according to the Agency on Statistics under the President of the Republic of Tajikistan.**

This is 15% or $2.4 million less compared to January-March 2021.

kWh of electricity was produced in the republic , which is 5.6% more than in the first quarter of 2021.

Tajik electricity, according to OAHK "Barki Tojik ", in the autumn-winter period (October-April) is supplied exclusively to Afghanistan.

During this period, Afghanistan receives daily up to 40 MW, which, according to the calculations of the specialists of the OJHC "Barki Tojik ", "does not affect the overall balance of energy supply in the country."

It is expected that from the beginning of April, the daily volume of supplies to Afghanistan will increase to 400 MW. Also, with the onset of spring, the export of Tajik electricity to Uzbekistan will begin.

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

According to the signed agreements, in 2022 Tajikistan pledged to supply 1.5 billion kWh of electricity to Afghanistan and 1.4 billion kWh to Uzbekistan.

The management of Barki Tojik said at a press conference in mid-February that the debt of the Afghan electricity company for electricity had decreased from $33 million at the beginning of 2022 to $27 million.