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

**FEBRUARY 2022**

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

According to the System Operator, the power plants of the Republic of Kazakhstan in January-February 2022 generated 20,410.2 million kWh of electricity, which is 16.4 million kWh or 0.1% more than in the same period in 2021. The increase in generation was observed in the Southern and Western zones of the UES of Kazakhstan.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Zone** | **Generation type** | **January February** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| **Kazakhstan** | **Total** | **20,393.8** | **20,410.2** | **16.4** | **0.1%** |
| *TPP* | *16,856.5* | *16,657.0* | *-199.5* | *-1.2%* |
| *GTES* | *1,842.0* | *2002.4* | *160.4* | *8.7%* |
| *HPS* | *1269.6* | *1253.9* | *-15.7* | *-1.2%* |
| *WES* | *274.2* | *332.9* | *58.7* | *21.4%* |
| *SES* | *150.8* | *164.0* | *13.2* | *8.7%* |
| *BSU* | *0.7* | *0.0* | *-0.7* | *0* |
| **Northern** | **Total** | **15646.2** | **15,235.5** | **-410.7** | **-2.6%** |
| *TPP* | *13970.8* | *13470.0* | *-500.8* | *-3.5%* |
| *GTES* | *573.4* | *547.8* | *-25.6* | *-4.4%* |
| *HPS* | *904.4* | *967.0* | *62.6* | *6.9%* |
| *WES* | *144.2* | *190.3* | *46.1* | *31.9%* |
| *SES* | *52.7* | *60.4* | *7.7* | *14.6%* |
| *BSU* | *0.7* | *0.0* | *-0.7* | *0* |
| **South** | **Total** | **2305.6** | **2547.3** | **241.7** | **10.5%** |
| *TPP* | *1,713.8* | *2010.0* | *296.2* | *17.3%* |
| *GTES* | *53.9* | *55.5* | *1.6* | *2.9%* |
| *HPS* | *365.2* | *286.9* | *-78.3* | *-21.4%* |
| *WES* | *74.9* | *91.6* | *16.7* | *22.3%* |
| *SES* | *97.8* | *103.3* | *5.5* | *5.6%* |
| **Western** | **Total** | **2442.0** | **2627.4** | **185.4** | **7.6%** |
| *TPP* | *1,171.9* | *1,177.0* | *5.1* | *0.4%* |
| *GTES* | *1214.7* | *1399.1* | *184.4* | *15.2%* |
| *WES* | *55.1* | *51.0* | *-4.1* | *-7.4%* |
| *SES* | *0.3* | *0.3* | *0.0* | *0* |

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

In January-February 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 351.1 million kWh. or 64.2% 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.**  | **Region** | **January February** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| 1 | Akmola | 928.9 | 1040.3 | 111.4 | 12.0% |
| 2 | Aktobe | 711.8 | 676.5 | -35.3 | -5.0% |
| 3 | Almaty | 1301.0 | 1250.1 | -50.9 | -4.0% |
| 4 | Atyrau | 1152.2 | 1303.7 | 151.5 | 13.1% |
| 5 | East Kazakhstan | 1438.3 | 1502.1 | 63.8 | 4.4% |
| 6 | Zhambyl | 546.9 | 898.0 | 351.1 | 64.2% |
| 7 | West Kazakhstan | 425.1 | 445.5 | 20.4 | 4.8% |
| 8 | Karaganda | 2,785.4 | 2563.5 | -221.9 | -8.0% |
| 9 | Kostanay | 221.4 | 239.4 | 18.0 | 8.1% |
| 10 | Kyzylorda | 120.5 | 118.8 | -1.7 | -1.4% |
| 11 | Mangistau | 864.7 | 878.2 | 13.5 | 1.5% |
| 12 | Pavlodar | 8936.6 | 8,810.9 | -125.7 | -1.4% |
| 13 | North Kazakhstan | 623.8 | 402.8 | -221.0 | -35.4% |
| 14 | Turkestan | 337.2 | 280.4 | -56.8 | -16.8% |
|  | **Total for Kazakhstan** | **20,393.8** | **20,410.2** | **16.4** | **0.1%** |

# *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-February 2022 amounted to 6,344.1million kWh . The decrease in electricity generation compared to the same period in 2021 amounted to 455.1 million kWh or 6.7%. The decrease is observed at all power plants, with the exception of the Moinak HPP and Samruk-Green Energy LLP.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Name** | **2021** | **2022** | **Δ 2022/2021** |
| **January February** | **share in Kazakhstan, %** | **January February** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **"Samruk-Energy" JSC** | **6,799.2** | **33.3%** | **6344.1** | **31.1%** | **-455.1** | **-6.7%** |
| *1* | *AlES JSC* | *1,125.2* | *5.5%* | *1,056.7* | *5.2%* | *-68.5* | *-6.1%* |
| *2* | *"Ekibastuz GRES-1" LLP* | *4,197.2* | *20.6%* | *3934.0* | *19.3%* | *-263.2* | *-6.3%* |
| *3* | *"Ekibastuz GRES-2" JSC* | *1245.2* | *6.1%* | *1,188.0* | *5.8%* | *-57.2* | *-4.6%* |
| *4* | *"Shardara HPP" JSC* | *125.6* | *0.6%* | *41.5* | *0.2%* | *-84.1* | *-67.0%* |
| *5* | *"Moinak HPP" JSC* | *72.3* | *0.4%* | *92.5* | *0.5%* | *20.2* | *27.9%* |
| *6* | *Samruk-Green Energy» LLP* | *2.6* | *0.0%* | *2.8* | *0.0%* | *0.2* | *7.7%* |
| *7* | *"First wind power plant" LLP* | *31.1* | *0.2%* | *28.6* | *0.1%* | *-2.5* | *-8.0%* |

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

*in power generation in Kazakhstan*

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

**Kazakhstan**

**20 410,2**

**mln. kWh**

**Others**

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

January-February 2022 compared to January-February 2021, the industrial production index (hereinafter - IPI) amounted to 104.7%. An increase in production volumes was recorded in 14 regions of the republic, a decrease is observed in Aktobe, Kyzylorda and Pavlodar regions.

**Changes in industrial output by region**

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

In the Atyrau region, the IPI amounted to 115% due to an increase in the production of crude oil, the production of gasoline, kerosene, hydrocarbon liquefied gases.

In the Karaganda region, the growth of IPI amounted to 106.5% due to an increase in the production of zinc concentrates, the production of pig iron, blister copper, flat-rolled products, non-alloyed steel, steel bars and rods.

In the Zhambyl region, due to the growth in the extraction of copper ores, the production of pharmaceuticals, phosphorus, phosphoric acid, diesel fuel, additives for cements and mortars, the IPI amounted to 105.6%.

In the Turkestan region due to the growth in the extraction of uranium and thorium ores, gold concentrates, the production of cheese, sausages, plastic pipes, transformers, automatic switches IPI amounted to 105,4%.

In the Almaty region, the IPI amounted to 105.1% due to an increase in the production of soft drinks, chocolate, cigarettes, glass containers, medicines, plastic packaging, paper and cardboard, preforms.

In the city of Almaty, due to the growth in the production of confectionery, furniture, mortar, tiles, cement and concrete bricks, cars and trucks, the IPI amounted to 103.9%.

In the North Kazakhstan region, due to the growth in the extraction of uranium and thorium ores, the production of flour, drinking alcohol, bags and packages of packaging, ready-mixed concrete, an increase in the production of freight cars , the IPI amounted to 103,1%.

In the Kostanay region, the IPI amounted to 102.5 % due to an increase in the extraction of aluminum ores, asbestos, the production of flour, bran, hot-rolled bars and rods from steel, combines and trucks.

In the East Kazakhstan region, the IPI amounted to 102.3 % due to the growth in the production of copper concentrates, gold ores, clay and kaolin, the production of sunflower oil, refined copper, gold in doré.

In the city of Shymkent, due to an increase in the production of medicines, fuel oil, diesel fuel, transformers, hot-rolled bars and rods from steel, ready-mixed concrete, the IPI amounted to 101.8%.

In West Kazakhstan IPI amounted to 101.7% due to the growth in gas condensate production, the production of pipes, hoses, hoses and fittings made of plastic, seamless pipes made of steel, ready-mixed concrete, and sausages.

In the Akmola region, due to the increase in the extraction of gold-bearing ores, the production of chilled poultry meat, flour, ready-made animal feed, slag, diesel fuel, the IPI amounted to 101.6%.

In the city of Nur-Sultan, the IPI amounted to 101.5% due to the growth in the production of refined gold, soft drinks, ready-mixed concrete, plastic pipes, prefabricated building structures made of cement and concrete, and the production of railway locomotives.

In the Mangistau region, the IPI amounted to 101.1% due to an increase in the production of crude oil, natural gas, production of bitumen, Portland cement, nitric acid, ammonia .

In Pavlodar region, the IPI amounted to 99% due to a decrease in the extraction of copper ores and concentrates, the production of ferrochromium, propylene polymers, gasoline, diesel fuel, fuel oil, and steel pipes.

In the Kyzylorda region, the IPI amounted to 94.2% due to the reduction in crude oil production, rice production, Portland cement, hydrocarbon liquefied gases, building prefabricated concrete structures.

In the Aktobe region, the IPI amounted to 92.1% due to a decrease in the production of copper, zinc and chromium concentrates, copper-zinc ores, gas condensate, the production of ferrochromium, prefabricated metal structures.

# *2.1 Electricity consumption by zones and regions*

According to the System Operator, in January-February 2022, there was an increase in the dynamics of electricity consumption of the republic in comparison with the same indicators in 2021 by 238.3 million kWh or 1.2%. Thus, in the western and southern zones of the republic, consumption increased by 7.2% and 4.1%, respectively.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Name** | **January February** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Kazakhstan** | **20,041.1** | **20,279.4** | **238.3** | **1.2%** |
| 1 | Northern zone | 13,231.4 | 13,113.5 | -117.9 | -0.9% |
| 2 | Western zone | 2443.6 | 2620.0 | 176.4 | 7.2% |
| 3 | Southern zone | 4366.1 | 4,545.9 | 179.8 | 4.1% |
|  | ***incl .by regions*** |  |  |  |  |
| 1 | Akmola  | 1971.5 | 2049.8 | 78.2 | 4.0% |
| 2 | Aktobe | 1203.5 | 1,129.0 | -74.6 | -6.2% |
| 3 | Almaty  | 2260.9 | 2299.4 | 38.5 | 1.7% |
| 4 | Atyrau  | 1,104.1 | 1,193.9 | 89.7 | 8.1% |
| 5 | East Kazakhstan | 1,698.7 | 1,899.8 | 201.1 | 11.8% |
| 6 | Zhambyl  | 812.8 | 877.4 | 64.6 | 7.9% |
| 7 | West Kazakhstan  | 440.6 | 504.1 | 63.5 | 14.4% |
| 8 | Karaganda | 3430.1 | 3424.2 | -5.9 | -0.2% |
| 9 | Kostanay  | 864.4 | 891.0 | 26.5 | 3.1% |
| 10 | Kyzylorda | 360.5 | 354.3 | -6.2 | -1.7% |
| 11 | Mangistau  | 898.9 | 922.1 | 23.2 | 2.6% |
| 12 | Pavlodar | 3,717.1 | 3,396.7 | -320.4 | -8.6% |
| 13 | North Kazakhstan | 346.0 | 323.1 | -22.9 | -6.6% |
| 14 | Turkestan | 931.8 | 1014.8 | 83.0 | 8.9% |

#

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

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

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Name** | **January February** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
|  | **Total** | **8009.0** | **7,817.0** | **-192.0** | **-2.4%** |
| 1. | ERG | 2619.4 | 2440.8 | -178.7 | -6.8% |
| 2. | Kazakhmys Corporation LLP | 658.7 | 701.2 | 42.5 | 6.5% |
| 3. | Kazzinc LLP  | 509.0 | 501.8 | -7.2 | -1.4% |  |  |
| 4. | Arcelor Mittal Temirtau" JSC | 633.6 | 657.7 | 24.1 | 3.8% |
| 5. | KKS LLP | 1,149.5 | 1,157.3 | 7.8 | 0.7% |
| 6. | CAEPCO JSC | 1120.6 | 1,068.1 | -52.4 | -4.7% |
| 7. | Zhambyl GRES | 448.5 | 472.8 | 24.3 | 5.4% |
| 8. | Oil and gas enterprises | 869.8 | 817.8 | -52.5 | -6.0% |

In January-February 2022, there is an increase in electricity consumption by the companies of Samruk-Energy JSC by 5.8 million kWh. or 0.4% compared to the same indicators in 2021.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Name** | **January February** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| **I** | **"Samruk-Energy" JSC** | **1468.3** | **1474.2** | **5.8** | **0.4%** |
| 1. | "Bogatyr-Komir" LLP | 55.8 | 55.4 | *-0.4* | -0.7% |
| 2. | Alatau Zharyk Companies » JSC | 199.4 | 219.4 | *20.0* | 10.0% |
| 3. | AlmatyEnergoSbyt LLP | 1213.1 | 1,199.4 | *-13.8* | -1.1% |

#

# *2.3 \_* *Electricity consumption by large consumers in Kazakhstan*

In January-February 2022, compared to the same period in 2021, electricity consumption by large consumers increased by 98.6 million kWh , or 1.7%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Consumer** | **January February** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| 1 | Arcelor Mittal Temirtau" JSC | 633.6 | 657.7 | 24.1 | 3.8 |
| 2 | AZF ( Aksuysky ) "TNK Kazchrome " JSC | 906.2 | 814.4 | -91.9 | -10.1 |
| 3 | Kazakhmys Smelting LLP | 209.2 | 214.5 | 5.3 | 2.5 |
| 4 | Kazzinc LLP | 481.1 | 472.7 | -8.4 | -1.8 |
| 5 | "Sokolovsko-Sarbayskoye GPO" JSC | 284.0 | 285.6 | 1.6 | 0.6 |
| 6 | Kazakhmys Corporation LLP | 219.1 | 222.6 | 3.5 | 1.6 |
| 7 | AZF (Aktobe) "TNK Kazchrome" JSC | 539.2 | 453.8 | -85.3 | -15.8 |
| 8 | “Channel them. Satpaev" RSE | 31.2 | 42.9 | 11.7 | 37.5 |
| 9 | Kazphosphate LLP | 272.6 | 367.8 | 95.2 | 34.9 |
| 10 | NDFZ(part of the structure of Kazphosphate LLP) JSC | 219.2 | 309.1 | 89.9 | 41.0 |
| 11 | "Taraz Metallurgical Plant" LLP | 69.1 | 30.3 | -38.8 | -56.2 |
| 12 | "Ust-Kamenogorsk titanium -magnesium plant" JSC | 71.1 | 122.8 | 51.7 | 72.8 |
| 13 | Tengizchevroil LLP  | 310.0 | 317.2 | 7.2 | 2.3 |
| 14 | PAS (Pavlodar Aluminum Smelter) JSC | 155.8 | 157.1 | 1.4 | 0.9 |
| 15 | "KEZ" (Kazakhstan electrolysis plant) JSC | 624.4 | 619.5 | -4.9 | -0.8% |
| 16 | "KEGOC" JSC | 1016.8 | 1,022.6 | -5.8 | -0.6 |
| **Total** | **5,829.1** | **5927.7** | **98.6** | **1.7%** |

# *Export-import of electrical energy*

In order to balance the production and consumption of electricity in January-February 2022, exports to the Russian Federation amounted to 174.7 million kWh , imports from the Russian Federation 269.8 million kWh .

Including export from "KEGOC" JSC to the Russian Federation 167.1 million kWh, import of electricity for the reporting period in the amount of 239.4 million kWh .

As part of foreign trade commodity exchange, the volume of electricity exports to the Kyrgyz Republic in January-February 2022 amounted to 219.7 million kWh .

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **January - February** | **Δ, million kWh** | **Δ, %** |
| **2021** | **2022** |
| **Export of Kazakhstan** | **-569.0** | **-394.4** | **-174.6** | **-30.7%** |
| **in Russia** | **-196.8** | **-174.7** | **-22.2** | **-11.3%** |
| **in the IPS of Central Asia** | **-372.1** | **-219.7** | **-152.4** | **-40.9%** |
| **Import of Kazakhstan** | **214.7** | **270.9** | **56.3** | **26.2%** |
| **From Russia** | **214.7** | **269.8** | **55.2** | **25.7%** |
| **Balance- flow "+" deficit, "-" excess** | **-354.3** | **-123.5** | **-230.8** | **-65.1%** |

# **Coal**

According to the Bureau of National Statistics, Kazakhstan
produced 19,551.3 thousand tons of hard coal in January-February 2022, which is 4.2% more than in the same period in 2021 (18,761.2 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January February** | **Δ, thousand tons** | **Δ, %** |
| **2021** | **2022** |
| 1 | Pavlodar | 11,879.2 | 12,262.6 | 383.4 | 3.2 % |
| 2 | Karaganda | 5309.2 | 5601.2 | 292.0 | 5.5 % |
| 3 | East Kazakhstan | 1528.1 | 1542.7 | 14.6 | 1.0 % |
|  | **Total for the Republic of Kazakhstan** | **18,761.2** | **19,551.3** | **790.1** | **4.2 %** |

In January-February 2022, Bogatyr Komir LLP produced 7,945.4 thousand tons, which is 2.3% more than in the corresponding period of 2021 (7,767.6 thousand tons).

The volume sold in January-February 2022 amounted to 8,052.7 thousand tons, of which 6,368.1 thousand tons went to the domestic market of the Republic of Kazakhstan, which is 13.5% less than in the same period in 2021 (7,359 .5 thousand tons) and for export (RF) - 1,684.6 thousand tons, which is 550.6% more than in the corresponding period of 2021 (258.9 thousand tons).

According to the indicators for January-February 2022, in comparison with similar indicators in 2021, Bogatyr Komir LLP has an increase in coal sales by 434.2 thousand tons or 5.7%.

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January** | **Δ,** **thousand tons** | **Δ, %****2022/2021** |
| **2021** | **2022** |
| **Total to the domestic market of the Republic of Kazakhstan** | **7359.5** | **6 368.1** | **-991.4**  | **-13.5 %**  |
| **Total for export to Russia** | **25 8.9** | **1684.6**  | **1 42 5.7** | **550.6%** |

#

# **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 in January- February 2022 amounted to 566 million kWh. Compared to January -February 2021 (493 million kWh), the increase was 73 million kWh. or 14.8 %. 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.

Total according to As of February 2022, there are 137 renewable energy facilities operating in Kazakhstan as a system operator. In February 2022, new renewable energy facilities were introduced:

- WPP Turgay "PF ElektroSetStroy" LLP;

- SES Net-consumer of the Taldykurgan hub;

- SES Net-consumer of the Turkestan region.

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 February** | **share in Kazakhstan, %** | **January February** | **share in Kazakhstan, %** |
| **I** | **Production in the Republic of Kazakhstan** | **20,393.8** | **100%** | **20,410.2** | **100%** | **16.4** | **0.1%** |
| **II** | **RES generation in Kazakhstan** | **493.0** | **2.4%** | **566.0** | **2.8%** | **73.0** | **14.8%** |
| ***III*** | ***RES generation, incl . by zones*** | ***share in the corresponding zone, %*** |
|  | *Northern zone* | *210.3* | *1.3%* | *264.1* | *1.7%* | *53.8* | *25.6%* |
|  | *Southern zone* | *227.3* | *9.9%* | *250.6* | *9.8%* | *23.3* | *10.3%* |
|  | *Western zone* | *55.4* | *2.3%* | *51.3* | *2.0%* | *-4.1* | *-7.4%* |
| ***IV*** | ***RES generation, incl . by zones*** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *Northern zone* | *210.3* | *42.7%* | *264.1* | *46.7%* | *53.8* | *25.6%* |
|  | *Southern zone* | *227.3* | *46.1%* | *250.6* | *44.3%* | *23.3* | *10.3%* |
|  | *Western zone* | *55.4* | *11.2%* | *51.3* | *9.1%* | *-4.1* | *-7.4%* |
| ***V*** | ***RES generation, incl . by type*** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *SES* | *150.8* | *30.6%* | *164.0* | *29.0%* | *13.2* | *8.8%* |
|  | *WES* | *274.2* | *55.6%* | *332.9* | *58.8%* | *58.7* | *21.4%* |
|  | *Small HPPs* | *67.3* | *13.7%* | *69.1* | *12.2%* | *1.8* | *2.7%* |
|  | *BSU* | *0.7* | *0.1%* | *0.0* | *0.0%* | *-0.7* | *-100%* |

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

Electricity generation by renewable energy facilities of Samruk-Energy JSC (SPP, WPP and small HPPs) in January-February 2022 amounted to 51 million kWh , which is 2.3% lower compared to the same period in 2021 (52.2 million kWh).

The share of renewable energy electricity of Samruk-Energy JSC in January-February 2022 amounted to 9% of the volume of electricity generated by renewable energy facilities in the Republic of Kazakhstan, while in January-February 2021 this figure was 10.6%. The decrease in the share of renewable energy sources of Samruk-Energy JSC in the generation of renewable energy sources in the Republic of Kazakhstan in 2022 is associated with an increase in the generation of electricity from renewable energy sources in the Republic of Kazakhstan, as well as a decrease in generation at First Wind Power Plant LLP.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2021** | **2022** | **Δ, million kWh** | **Δ, %** |
| **January February** | **share in Kazakhstan, %** | **January February** | **share in Kazakhstan, %** |
| **I** | **RES of Samruk-Energy, *including:*** | **52.2** | **10.6%** | **51.0** | **9.0%** | **-1.2** | **-2.3** |
| *1* | *Cascade of small HPPs of AlES JSC 43.7 MW* | *18.5* | *3.8%* | *19.6* | *3.5%* | *1.1* | *5.9* |
| *2* | *Samruk - Green LLP Energy » SPP 2MW + SPP 1MW* | *0.4* | *0.1%* | *0.6* | *0.1%* | *0.2* | *50.0* |
| *3* | *Samruk - Green Energy LLP WPP Shelek 5 MW* | *2.2* | *0.4%* | *2.2* | *0.4%* | *0.0* | *0.0* |
| *4* | *First Wind Power Plant LLP WPP 45 MW* | *31.1* | *6.3%* | *28.6* | *5.1%* | *-2.5* | *-8.0* |

#

# **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), 4 meetings of the Subcommittee on the Formation of the EAEU Primary Economic Activity 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).

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.

# *Overview of the media in the CIS countries*

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

**AZERBAIJAN**

**At the end of 2021, the export of electricity from Azerbaijan increased by 522.7 million kWh or 45.4% compared to 2020, amounting to 1673.4 million kWh .**

At the end of 2021, 27855.7 million kWh of electricity was produced in Azerbaijan, which is 2044.5 million kWh or 7.9% more than in 2020.

In 2021, the total electricity consumption in the country amounted to 23435.6 million kWh , which is 1465.7 million kWh or 6.7% more than in 2020 .

Last year, the export of electricity from Azerbaijan increased by 522.7 million kWh or 45.4% compared to 2020, amounting to 1673.4 million kWh . The import of electricity to Azerbaijan in 2021 increased by 15.1 million kWh or 11.1% compared to 2020, amounting to 151.6 million kWh .

kWh were exported to Iran , 720.6 million kWh to Turkey, 95.2 million kWh to Russia , and 600.1 million kWh to Georgia . Of the total electricity imports, Iran accounted for 31.9 million kWh , Russia - 95.1 million kWh , Georgia - 24.6 million kWh .

**KAZAKHSTAN**

**In Kazakhstan, at the beginning of 2022, there are 134 renewable energy sources (RES) facilities with a total installed capacity of 2010 MW.** The volume of electricity production by these facilities (solar power plants (SPP), wind power plants (WPP), biogas plants (BGS), small hydropower plants) for 2021 amounted to 4220.3 million kWh .

Renewable energy in the country is growing steadily. Over the past 7 years, the installed capacity of renewable energy facilities has grown by almost 11 times - from 177.52 MW in 2014 to 2010 MW in 2021.

The resource potential of RES in Kazakhstan is estimated by the following indicators:

- wind energy - 920 billion kWh / year;

- hydro potential - 62 billion kWh / year;

- solar energy - 2.5 billion kWh / year;

- thermal potential of geothermal waters - 4.3 GW.

In the largest Kazakhstani electric power holding Samruk-Energo JSC, 5 renewable energy facilities operate today. Their total electricity generation in 2021 amounted to 325.3 million kWh . This is 7.7% of the electricity generated by all renewable energy facilities in the Republic of Kazakhstan.

**The Ministry of Energy of the Republic of Kazakhstan has developed the Energy Balance of the Republic of Kazakhstan until 2035. In accordance with the energy balance, electricity consumption in the country will increase to 152.9 billion** kWh by 2035 , the average annual growth in electricity consumption in the period 2021-2035 will increase by 2.7%. To cover the needs of the economy and the population, it will be necessary to commission 17.5 GW of new generation by 2035.

**Until 2026, it is planned to build 7 generating units with a total capacity of about 3,050 MW in the southern regions of Kazakhstan.**
Also, in order to ensure the stable functioning of the energy system and the full supply of the country's economy with electricity, the Ministry of Energy has concluded 13 investment agreements with existing energy-producing organizations, within the framework of which it is planned to implement measures for the reconstruction and expansion of generating equipment. According to the results, it is planned to commission additional electric capacity of about 1600 MW, of which coal and gas are about 950 MW and 650 MW, respectively. Work on their further conclusion in order to maintain the working condition of power equipment continues.

Also, within the framework of the Development Plan for the hydropower industry of the Republic of Kazakhstan for 2020-2030, it is planned to commission about 1,500 MW of electric power using the hydrodynamic energy of water until 2030.

**KYRGYZSTAN**

**JSC "National Electric Grid of Kyrgyzstan" will increase the reliability of high-voltage substations and power lines**

A repair company has been launched at the JSC "National Electric Grid of Kyrgyzstan" in order to timely prepare for the next autumn-winter period of 2022-2023. power facilities available on the balance sheet of the company:

- overhead power transmission lines with a voltage of 110 kV , 220 kV and 500 kV with a total length of 7641 km;

- 110 kV , 220 kV and 500 kV substations in the amount of 199 units.

As part of the approved schedule of organizational and technical measures, it is planned to carry out major and current repairs at all high-voltage substations and power lines. In addition, buildings, structures, vehicles and directly technical personnel will be prepared for work in winter conditions.

Timely implementation of the repair program will increase the reliability of the operation of the power grid complex and ensure uninterrupted power supply to consumers during periods of maximum load.

**REPUBLIC OF BELARUS**

**SPE " Belenergo " spoke about the advantages of electronic meters**

Systematic work continues in Belarus to replace obsolete induction meters with modern electronic meters. It is carried out under the program of modernization of electricity metering facilities until 2023 free of charge.

The priority direction in the program is the phased decommissioning of inductive electricity metering devices installed at household subscribers, primarily accuracy class 2.5. This decision is due to the fact that as of the beginning of 2015, almost 3.6 million such devices were in use by consumers, the vast majority with a service life of more than 32 years and an accuracy class of 2.5.

In accordance with the program, in 2021, 496.7 thousand meters were replaced at residential subscribers, which made it possible to increase the share of single-phase electronic electricity meters in operation to 80.7%.

In addition, it becomes possible to combine meters into automated systems for monitoring and accounting for electricity (ASKUE). This provides remote reading from metering devices, their technical control, and also allows you to offer for payment in payment systems the real consumption of electrical energy for the billing period.

Also among the advantages of electronic meters is their resistance to temperature extremes (from minus 40 to plus 50 degrees) and noiselessness in operation due to the lack of a moving part.

**UZBEKISTAN**

**By the end of 2022, 7 new stations with a total capacity of 1,474 MW will be put into operation in Uzbekistan - 6 thermal power plants (TPPs) and one solar photoelectric power plant .** As a result, the total capacity of the energy system of Uzbekistan will exceed 16,000 MW.

**Ministry of Energy of Uzbekistan: 3 new thermal power plants were put into operation in three regions of the country in three months.** In Uzbekistan, in accordance with the decrees of the President of the country, new modern thermal power plants (TPPs) are being built and put into operation. Since the beginning of this year, 3 new thermal power plants with a total capacity of 684 MW have been put into operation in the regions of the country.

The first of them was launched on January 11, 2022, a gas piston thermal power plant with a capacity of 270 MW in the Bukhara district of the Bukhara region;

The second is a combined cycle plant with a capacity of 240 MW, which was commissioned on January 14 in the Kibray district of the Tashkent region;

The start of operation of the third new thermal power plant with a capacity of 174 MW, built in the Yangiaryk district of the Khorezm region, was given on March 10.

These 3 power plants generate a total of 5.6 billion kWh of electricity per year. Due to the introduction of energy-saving equipment and technologies, 725 million cubic meters of natural gas per year will be saved.

The saved natural gas will make it possible to generate an additional 2.7 billion kWh of electricity.

, the 4th new thermal power plant with a capacity of 230 MW will be put into operation in the Kibray district of the Tashkent region.

**By 2050, Uzbekistan will completely abandon the use of coal, natural gas and oil products as fuel.**

Uzbekistan has joined the hydrocarbon neutrality program adopted by the most advanced countries of the world. Among them are Japan, South Korea, China and EU countries. Hydrocarbon neutrality (carbon neutrality) or "zero emissions" means that carbon dioxide emissions do not exceed its volumes absorbed by oceans and forests.

To achieve this goal in Uzbekistan by 2030, the use of renewable sources should be about 30% of the electricity generated in the country. That is, by this time, wind power plants (WPP) with a total capacity of at least 5,000 MW and solar photovoltaic power plants (PVP) with a total capacity of 7,000 MW should be put into operation. So, in 2023 alone, it is planned to commission four PPPs with a total capacity of 1097 MW in Samarkand, Jizzakh, Navoi and Surkhandarya regions and four wind farms with a total capacity of 1600 MW in Karakalpakstan, Bukhara and Navoi regions.
According to the plans of the Ministry of Energy, by 2026 the total capacity of solar power plants in Uzbekistan will reach 4,000 MW, and the capacity of wind farms will also reach 4,000 MW. As a result, up to 25% of the electricity generated in the country will come from renewable sources, and about 3 billion cubic meters of natural gas will be saved annually. This amount of saved gas can provide one million households within one year.

Turning to hydropower, Khodjaev said that in 2017-2021, 11 new hydropower plants were built in Uzbekistan and 8 were modernized. As a result, 244 MW of additional capacity was created.

By 2026, 5 existing hydroelectric power plants (HPPs) will be modernized in the country, and 15 new HPPs will be built in Samarkand, Surkhandarya, Tashkent, Kashkadarya, Namangan and Andijan regions. As a result, the total capacity of hydroelectric power plants in Uzbekistan will reach 2920 MW.

**HPP capacity of Uzbekistan to increase by 868 MW by 2026**

According to the country's development strategy for 2022-2026, 15 new hydroelectric power plants will be built in Uzbekistan, and 5 existing hydroelectric power plants will be modernized. Thanks to this, an additional capacity of 868 MW will appear.

In 2022, seven HPPs with a total capacity of 173 MW will be built in Samarkand, Surkhandarya and Tashkent regions.

In 2023, the modernization of one HPP in the Tashkent region and two in the Kashkadarya and Andijan regions with a total capacity of 29 MW will be completed.

In 2024, the modernization of four HPPs in Andijan, Namangan, Surkhandarya and Tashkent regions with a total capacity of 122 MW will be completed.

In 2025-2026, four HPPs with a total capacity of 544 MW will be put into operation in the Kashkadarya and Tashkent regions.

**Uzbekistan plans to create a single ring power system by 2026 through the construction of 500-750 kV networks.** The technical failure that occurred on January 25 in the regional energy system affected all the power plants of the republic and contributed to the creation of an emergency. In this regard, it is planned to create a single ring system in Uzbekistan through the construction of 500-750 kV networks.

In particular, by 2026 it is planned to increase the total generating capacity to 27,400 megawatts and annual output to 110 billion kWh . Then all regions of the country will be firmly connected by 500-750 kV networks with the creation of a single system.

**RUSSIA**

**In the Russian Federation, the legislative "road map" of Energinet has been updated .** The road map approved by the Government of the Russian Federation to improve legislation and eliminate administrative barriers in order to ensure the implementation of the National Technology Initiative in the EnergyNet direction provides for the submission to the Government of the Russian Federation no later than May 2022 of a draft law on integrating the demand management mechanism into the wholesale electricity market.

The updated version of the legislative "road map" of Energinet was approved on March 3 by order of the Government of the Russian Federation No. 402-r. Among other things, it contains provisions on the continuation of work on the development of a mechanism for managing the demand for electricity in the UES of Russia.

**The Government of the Russian Federation allowed to take into account the costs of development in the field of renewable energy to reduce taxes.** The Russian government has included developments in the field of renewable energy sources (RES) in the list of scientific research and development (R&D), the costs of which can be taken into account to reduce tax payments, follows from the [decree](https://www.bigpowernews.ru/research/docs/document101698.phtml) .

R&D expenditures on the government's list reduce the income tax base by a multiplying factor of 1.5. They are also allowed to be taken into account at a time in the reporting tax period in which they were carried out.