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

**JANUARY-MAY 2023**

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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 in 2023 generated 49,019.4 million kWh of electricity, which is 911 million kWh or 1.9 % more than the same period in 2022.

An increase in generation was observed in the northern and southern zones of the UES of Kazakhstan.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Zone** | **Generation type** | **January- May** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **Kazakhstan** | **Total** | **48 108.4** | **49,019.4** | ***911.0*** | ***1.9%*** |
| *TPP* | 38 150.5 | 38,338.2 | *187.7* | *0.5%* |
| *GTES* | 4,812.2 | 4,876.3 | *64.1* | *1.3%* |
| *HPS* | 3,591.5 | 3,399.7 | *-191.8* | *-5.3%* |
| *WES* | 912 | 1628.7 | *716.7* | *78.6%* |
| *SES* | 642.2 | 775.4 | *133.2* | *20.7%* |
| *BSU* | 0 | 1.1 | *1.1* |  |
| 1 | **Northern** | **Total** | **35,988.7** | **36,501.0** | ***512.3*** | ***1.4%*** |
| *TPP* | 31,450.1 | 31,760.0 | *309.9* | *1.0%* |
| *GTES* | 1274.2 | 1256.1 | *-18.1* | *-1.4%* |
| *HPS* | 2518.5 | 2212.5 | *-306.0* | *-12.2%* |
| *WES* | 527.3 | 1004.7 | *477.4* | *90.5%* |
| *SES* | 218.6 | 266.6 | *48.0* | *22.0%* |
| *BSU* | 0 | 1.1 | *1.1* |  |
| 2 | **South** | **Total** | **5,826.8** | **6353.1** | ***526.3*** | ***9.0%*** |
| *TPP* | 3945.6 | 4030.1 | *84.5* | *2.1%* |
| *HPS* | 1073 | 1,187.2 | *114.2* | *10.6%* |
| *GTES* | 127.9 | 135.8 | *7.9* | *6.2%* |
| *WES* | 258 | 492.5 | *234.5* | *90.9%* |
| *SES* | 422.3 | 507.5 | *85.2* | *20.2%* |
| 3 | **Western** | **Total** | **6292.9** | **6,165.3** | ***-127.6*** | ***-2.0%*** |
| *TPP* | 2,754.8 | 2548.1 | *-206.7* | *-7.5%* |
| *GTES* | 3410.1 | 3484.4 | *74.3* | *2.2%* |
| *WES* | 126.7 | 131.5 | *4.8* | *3.8%* |
| *SES* | 1.3 | 1.3 | *0* | *0* |

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

In January-May 2023, electricity generation in Akmola, Aktobe, Zhambyl, Kyzylorda, Mangistau, Pavlodar, North Kazakhstan and Turkestan regions increased significantly compared to the same period in 2022.

At the same time, a decrease in electricity generation was observed in Almaty, Atyrau, East Kazakhstan, Karaganda, West Kazakhstan and Kostanay regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January- May** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
| *1* | Akmola | 2429.5 | 2644.4 | *214.9* | *8.8%* |
| *2* | Aktobe | 1592.2 | 1,769.2 | *177.0* | *11.1%* |
| *3* | Almaty | 3011.6 | 3010.5 | *-1.1* | *0.0%* |
| *4* | Atyrau | 3,132.7 | 3,021.8 | *-110.9* | *-3.5%* |
| *5* | East Kazakhstan |  | 985.2 |  |  |
| *6* | Zhambyl | 3,867.2 | 2699.1 | *-1,168.1* | *-30.2%* |
| *7* | West Kazakhstan | 1,767.6 | 1967.7 | *200.1* | *11.3%* |
| *8* | Karaganda |  | 201.6 |  |  |
| *9* | Kostanay | 1,089.2 | 978.1 | *-111.1* | *-10.2%* |
| *10* | Kyzylorda | 6259.2 | 5344.5 | *-914.7* | *-14.6%* |
| *11* | Mangistau | 574.3 | 519.9 | *-54.4* | *-9.5%* |
| *12* | Pavlodar | 278.9 | 292.5 | *13.6* | *4.9%* |
| *13* | North Kazakhstan | 2071.0 | 2165.4 | *94.4* | *4.5%* |
| 14 | Turkestan | 20,538.9 | 20,713.6 | *174.7* | *0.9%* |
| *15* | Abai | 727.4 | 934.1 | *206.7* | *28.4%* |
| *16* | Zhetysuskaya | 768.7 | 880.8 | *112.1* | *14.6%* |
| 17 | Ulytauskaya |  | 891.0 |  |  |
|  | **Total for Kazakhstan** | **48 108.4** | **49,019.4** | ***911.0*** | ***1.9%*** |

# *1.2* *Electricity generation by energy holdings and large energy producing organizations.*

In January-May 2023, electricity generation by energy holdings and large energy-producing organizations amounted to 21,520.3 million kWh, which is 153.6 million kWh less than the same period in 2022 (21,673.8 million kWh), and their total share of the total production amounted to 43.9 %.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ 2023/2022** |
| **January - May** | **share in Kazakhstan, %** | **January- May** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **Total** | **21,673.8** | **45.1%** | **21,520.2** | **43.9%** | **-153.6** | **-0.7%** |
| **1.** | ERG | *8405.8* | *17.5%* | *8,190.1* | *16.7%* | *-215.7* | *-2.6%* |
| **2.** | “Kazakhmys Energy” LLP | *2490.4* | *5.2%* | *2645.9* | *5.4%* | *155.5* | *6.2%* |
| **3.** | “Kazzinc” LLP  | *1,029.0* | *2.1%* | *859.4* | *1.8%* | *-169.6* | *-16.5%* |
| **4.** | “Arcellor Mittal” JSC  | *1040.4* | *2.2%* | *802.0* | *1.6%* | *-238.4* | *-22.9%* |
| **5.** | “KKS” LLP | *2884.8* | *6.0%* | *2882.1* | *5.9%* | *-2.7* | *-0.1%* |
| **6.** | CAEPCO | *2305.0* | *4.8%* | *2428.8* | *5.0%* | *123.8* | *5.4%* |
| **7.** | “Zhambylskaya GRES” JSC  | *1364.6* | *2.8%* | *1462.7* | *3.0%* | *98.1* | *7.2%* |
| **8.** | Oil and gas enterprises | *2153.8* | *4.5%* | *2249.2* | *4.6%* | *95.4* | *4.4%* |

*1.3 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 2023 amounted to 15,333.6million kWh The increase in electricity generation compared to the same period in 2022 amounted to 585.2 million kWh or 4 %.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ 2023/2022** |
| **January-May** | **share in Kazakhstan, %** | **January - May** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **"Samruk-Energy" JSC** | **14748.4** | **30.7%** | **15,333.6** | **31.3%** | **585.2** | **4.0%** |
| *1* | *“AlES” JSC* | *2286.8* | *4.8%* | *2305* | *4.7%* | *18.5* | *0.8%* |
| *2* | *"Ekibastuz GRES-1" LLP* | *9246.7* | *19.2%* | *9 493* | *19.4%* | *245.8* | *2.7%* |
| *3* | *"Ekibastuz GRES-2" JSC* | *2607.4* | *5.4%* | *2733.5* | *5.6%* | *126.1* | *4.8%* |
| *4* | *"Shardara HPP" JSC* | *205.1* | *0.4%* | *303.4* | *0.6%* | *98.3* | *47.9%* |
| *5* | *“Moynakskaya HPP” JSC* | *322.5* | *0.7%* | *325.8* | *0.7%* | *3.3* | *1.0%* |
| *6* | *“Samruk-Green Energy” LLP* | *8.6* | *0.0%* | *9.4* | *0.0%* | *0.80* | *9.3%* |
| *7* | *WPP Shelek by “Energy Semirechye” LLP*  |  |  | *97.1* | *0.2%* |  |  |
| *8* | *"First wind power plant" LLP* | *71.3* | *0.1%* | *66.6* | *0.1%* | *-4.7* | *-6.6%* |

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

*in power generation in Kazakhstan*

As can be seen from the chart below, the share of Samruk-Energy JSC in the electricity market of Kazakhstan remains the leader and amounts to 31.3%.

**Kazakhstan**

**49 019,4 mln.kWh**



* 1. *Electricity generation by types of energy producing organizations of “Samruk-Energy” JSC, million kWh*
1. **Electricity consumption in the UES of Kazakhstan**

# *2.1. The results of the industry in January-May 2023*

The index of industrial production in Kazakhstan in January-May 2023 amounted to 102.4%.

Growth in production is observed in the mining and quarrying industry by 1.3%, manufacturing - by 3.3%, supply of electricity, gas, steam, hot water and air conditioning - by 6.2%, water supply; collection, processing and disposal of waste, activities for the elimination of pollution - by 7.1%.

Among the regions, the largest growth was recorded in North Kazakhstan, Akmola, Zhetisu, Abay, Almaty regions and Almaty city.

**Change in industrial production indices**

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

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# *2.2 Electricity consumption by zones and regions*

According to the System Operator, in January-May In 2023, there was an increase in the dynamics of electricity consumption in the republic in comparison with the same indicators in 2022 by 1,282.6 million kWh or 2.7 %. Thus, in the northern and southern zones of the republic, consumption increased by 1.8 % and 7.3 %, respectively.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **Kazakhstan** | **47,774.9** | **49,057.5** | ***1282.6*** | ***2.7%*** |
| *1* | Northern zone | 30,952.2 | 31,502.3 | *550.1* | *1.8%* |
| *2* | Western zone | 6271.8 | 6,237.5 | *-34.3* | *-0.5%* |
| *3* | Southern zone | 10550.9 | 11,317.8 | *766.9* | *7.3%* |
|  | **including by regions** |  |  |  |  |
| *1* | Akmola | 4571.3 | 4,876.6 | *305.3* | *6.7%* |
| *2* | Aktobe | 2868.3 | 2682.3 | *-186.0* | *-6.5%* |
| *3* | Almaty | 5287.7 | 5,064.4 | *-223.3* | *-4.2%* |
| *4* | Atyrau | 2884.3 | 2980.3 | *96.0* | *3.3%* |
| *5* | Abai |  | 1353.8 |  |  |
| *6* | East Kazakhstan | 4465.7 | 3,193.6 | *-1,272.1* | *-28.5%* |
| *7* | Zhetysuskaya |  | 679.2 |  |  |
| *8* | Zhambyl | 2029.0 | 2147.8 | *118.8* | *5.9%* |
| *9* | West Kazakhstan | 1,198.6 | 1013.3 | *-185.3* | *-15.5%* |
| *10* | Karaganda | 8,072.2 | 6,578.4 | *-1,493.8* | *-18.5%* |
| *11* | Kostanay | 2078.0 | 1987.2 | *-90.8* | *-4.4%* |
| *12* | Kyzylorda | 807.1 | 840.5 | *33.4* | *4.1%* |
| *13* | Mangistau | 2,188.9 | 2243.9 | *55.0* | *2.5%* |
| *14* | Pavlodar | 8,181.6 | 8361.9 | *180.3* | *2.2%* |
| *15* | North Kazakhstan | 715.0 | 735.1 | *20.1* | *2.8%* |
| *16* | Turkestan | 2426.9 | 2585.9 | *159.0* | *6.6%* |
| *17* | Ulytauskaya |  | 1,733.4 |  |  |

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

In January -May 2023, there is a decrease in electricity consumption by energy holdings consumers and large energy-producing organizations.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January- May** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **Total** | **18,597.6** | **17,746.1** | **-851.5** | **-5%** |
| *1.* | *ERG* | *6319.2* | *5634.2* | -685.0 | -eleven% |
| *2.* | *“Kazakhmys Corporation” LLP* | *1656.0* | *1678.5* | 22.5 | 1% |
| *3.* | *“Kazzinc” LLP*  | *1,017.0* | *724.7* | -292.3 | -29% |
| *4.* | *“Arcelor Mittal Temirtau" JSC* | *1565.4* | *1370.8* | -194.7 | -12% |
| *5.* | *“KKS” LLP* | *2809.9* | *2801.3* | -8.6 | 0% |
| *6.* | *CAEPCO* | *2417.4* | *2366.6* | -50.8 | -2% |
| *7.* | *“Zhambyl” GRES* | *701.6* | *1,035.1* | 333.5 | 48% |
| *8.* | *Oil and gas enterprises* | *2111.1* | *2135.0* | 23.9 | 1% |

In January-May 2023, there is an increase in electricity consumption by “Samruk-Energy” JSC companies of by 171.1 million kWh or 5% compared to the same indicators for 2022.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **No.**  | **Name** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **"Samruk-Energy" JSC** | **3,395.8** | **3,567.0** | **171.1** | **5%** |
| *1.* | *“Bogatyr- Komir” LLP* | *132.7* | *139.0* | *6.3* | *5%* |
| *2.* | *“Alatau Zharyk Company” JSC* | *448.1* | *449.7* | *1.6* | *0%* |
| *3.* | *"AlmatyEnergoSbyt" LLP* | *2815.0* | *2978.2* | *163.2* | *6%* |

*2.4 Electricity consumption by large consumers in Kazakhstan*

In January-May 2023, compared to the same period in 2022, electricity consumption by large consumers decreased by 341.3 million kWh or 2.2%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Consumer** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
| *1* | *“Arcelor Mittal Temirtau" JSC* | *1565.4* | *1507.4* | *-58.1* | *-3.7* |
| *2* | *AZF ( Aksuysky ) "TNK Kazchrome" JSC* | *2,121.5* | *2140.4* | *18.8* | *0.9* |
| *3* | *“Kazakhmys Smelting” LLP* | *535.8* | *237.0* | *-298.8* | *-55.8* |
| *4* | *“Kazzinc” LLP*  | *1,162.0* | *1,120.8* | *-41.2* | *-3.5* |
| *5* | *"Sokolovsko-Sarbayskoye GPO" JSC* | *677.8* | *553.7* | *-124.1* | *-18.3* |
| *6* | *“Kazakhmys Corporation” LLP* | *552.4* | *480.0* | *-72.4* | *-13.1* |
| *7* | *AZF (Aktobe) "TNK Kazchrome" JSC* | *1286.7* | *1160.2* | *-126.5* | *-9.8* |
| *8* | *RSE “Channel them. Satpaev"* | *108.6* | *93.5* | *-15.1* | *-13.9* |
| *9* | *"YDD Corporation" LLP* | *355.3* | *461.3* | *105.9* | *29.8* |
| *10* | *"Ust-Kamenogorsk titanium -magnesium plant" JSC* | *313.6* | *266.4* | *-47.1* | *-15.0* |
| *11* | *"Atyrau Oil Refinery" LLP* | *348.4* | *335.3* | *-13.1* | *-3.8* |
| *12* | *“Tengizchevroil”LLP*  | *791.6* | *839.7* | *48.1* | *6.1* |
| *13* | *PAZ (Pavlodar Aluminum Smelter) JSC* | *404.9* | *394.1* | *-10.8* | *-2.7* |
| *14* | *"KEZ" (Kazakhstan electrolysis plant) JSC* | *1567.5* | *1554.0* | *-13.5* | *-0.9* |
| *15* | *"NC Kazakhstan Temir Zholy" JSC* | *1490.3* | *1595.8* | *105.4* | *7.1* |
| *16* | *"KEGOC" JSC* | *2134.6* | *2335.7* | *201.2* | *9.4* |
| **Total** | **15416.4** | **15,075.1** | **-341.3** | **-2.2** |

# *Export-import of electrical energy*

In order to balance the production and consumption of electricity in January-May 2023, exports to the Russian Federation amounted to 548.2 million kWh, imports from the Russian Federation 892.6 million kWh.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **January-May** | **Δ, million kWh** | **Δ, %** |
| **2022 \_** | **2023 \_** |
| **Export of Kazakhstan** | **-698.7** | **-1125.0** | **-426.3** | **61.0%** |
| *in Russia* | *-478.9* | *-548.2* | *-69.3* | *14.5%* |
| *in the IPS of Central Asia* | *-219.7* | *-576.8* | *-357.0* | *162.5%* |
| **Import of Kazakhstan** | **580.8** | **892.6** | **311.7** | **53.7%** |
| *From Russia* | *580.8* | *892.6* | *311.7* | *53.7%* |
| **Balance-flow "+" deficit, "-" excess** | **-117.8** | **-232.4** | **-114.6** | **97.2%** |

# **Coal**

According to the Bureau of National Statistics, Kazakhstan produced 46,777.4 thousand tons of hard coal in January-May 2023, which is 1.4% less than in the same period in 2022 (47,436.9 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January- May** | **Δ, thousand tons** | **Δ, %** |
| **2022** | **2023** |
| 1 | *Pavlodar* | *29 248* | *29,547.8* | *299.8* | *1%* |
| 2 | *Karaganda* | *14,385.2* | *13 223* | *-1,162.2* | *-8.1%* |
| 3 | *East Kazakhstan* | *3442.3* | *3228.2* | *-214.1* | *-6.2%* |
|  | **Total for the Republic of Kazakhstan** | **47,436.9** | **46,777.4** | **- 659.5** | **-1.4%** |

In January-May 2023, Bogatyr Komir LLP produced 18,385.1 thousand tons, which is 3% less than in the corresponding period of 2022 (18,945.4 thousand tons).

The volume of coal sold in January- May 2023 amounted to 18,501.3 thousand tons, of which 14,371 thousand tons went to the domestic market of the Republic of Kazakhstan, which is 1 % less than in the same period in 2022 (14,497.2 thousand tons ) and for export (RF) – 4,130.3 thousand tons, which is 5.6 % less than in the corresponding period of 2022 (4,376 thousand tons).

According to the indicators for January- May 2023, compared to the same indicators in 2022, Bogatyr Komir LLP observed a decrease in coal sales by 371.9 thousand tons or 2 %.

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January-May** | **Δ,** **thousand tons** | **Δ, %****2023/2022** |
| **2022** | **2023** |
| **Total to the domestic market of the Republic of Kazakhstan** | **14,497.2** | **14 371** | **- 126.2** | **- 1 %** |
| **Total for export to Russia** | **4 376** | **4,130.3** | **-245.7** | **-5.6%** |
| **TOTAL** | **18,873.2** | **18,501.3** | **-371.9** | **- 2 %** |

# **Renewable energy sources**

# *RES targets*

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

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

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

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

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

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

# *RES indicators in Kazakhstan*

According to The Ministry of Energy of the Republic of Kazakhstan there are 130 renewable energy facilities with an installed capacity of 2400 MW. (WPP - 958 MW; 44 SPP - 1148 MW; 37 HPP - 280 MW; 3 BioPP - 1.77 MW).

According to the System Operator, the volume of electricity supply in the EU of the Republic of Kazakhstan by renewable energy facilities (SPP, WPP, BGS, small hydropower plants) of the Republic of Kazakhstan for January -May 2023 amounted to 2,735.7 million kWh. Compared to January-May 2022 (1,898.1 million kWh), the increase was 837.6 million kWh or 44.1 %.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ, million kWh** | **Δ, %** |
| **January-May** | **share in Kazakhstan, %** | **January-May** | **share in Kazakhstan, %** |
| **1** | **Production in the Republic of Kazakhstan** | **48108.4** | **100%** | **49019.4** | **100%** | **911.0** | **1.9%** |
| **2** | **RES generation in Kazakhstan** | **1898.1** | **3.9%** | **2735.7** | **5.6%** | **837.6** | **44.1%** |
| **3** | **RES generation, incl. by zones** | ***share in the respective zone*** |
|  | *Northern zone* | *826.1* | *2.3%* | *1355.3* | *3.7%* | *529.2* | *64.1%* |
|  | *Southern zone* | *944.0* | *16.2%* | *1246.1* | *19.6%* | *302.1* | *32.0%* |
|  | *Western zone* | *128.0* | *2.0%* | *132.8* | *2.2%* | *4.8* | *3.8%* |
| **4** | **RES generation, incl. by zones** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *Northern zone* | *826.1* | *43.5%* | *1355.3* | *49.5%* | *529.2* | *64.1%* |
|  | *Southern zone* | *944.0* | *49.7%* | *1246.1* | *45.5%* | *302.1* | *32.0%* |
|  | *Western zone* | *128.0* | *6.7%* | *132.8* | *4.9%* | *4.8* | *3.8%* |
| **5** | **RES generation, incl. by type** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *SES* | *642.2* | *33.8%* | *775.4* | *28.3%* | *133.2* | *20.7%* |
|  | *WES* | *912.0* | *48.0%* | *1628.7* | *59.5%* | *716.7* | *78.6%* |
|  | *Small HPPs* | *343.9* | *18.1%* | *330.5* | *12.1%* | *-13.4* | *-3.9%* |
|  | *BSU* | *0.0* | *0.0%* | *1.1* | *0.0%* | *1.1* | *-* |

# *RES support tariff*

As part of the support for the development of RES, "Financial Center for Supporting the Development of RES” LLP (hereinafter referred to as RFC LLP) carries out a centralized purchase of electricity produced by RES facilities.

In turn, RFC LLP distributes the total amount of electricity received from RES facilities to conditional consumers and qualified conditional consumers (traditional power plants) at the tariff for supporting RES.

# *Through RES allowance*

In accordance with subparagraphs 4-5) of paragraph 3 of Article 7-1 of the Law on RES Support, from July 1, 2021, a surcharge for supporting the use of renewable energy sources applied by conditional consumers to the ceiling tariff is applied.

Surcharge for supporting the use of renewable energy sources - the price determined by the settlement and financial center in accordance with the zone of consumption of electrical energy for energy-producing organizations that are conditional consumers or qualified conditional consumers.

The amounts of the allowance for supporting the use of renewable energy sources for 2023:

1. for conditional consumers in the first zone of electricity consumption in the amount of 1.97 tenge/kWh without VAT;

2. for conditional consumers in the second zone of electricity consumption in the amount of 0.56 tenge/kWh without VAT;

3. for qualified conditional consumer LLP "GRES Topar" in the amount of 0.87 tenge/kWh without VAT.

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

Electricity generation by RES facilities of “Samruk-Energy” JSC (SPP, WPP and small HPPs) for January-May 2023 amounted to 230.1 million kWh, which is 59.1% higher compared to the same period in 2022 (144.6 million kWh).

The share of RES electricity of “Samruk-Energy” JSC, taking into account small HPPs, in January-May 2023 amounted to 8.4% of the volume of electricity generated by RES facilities in the Republic of Kazakhstan, while in 2022 this figure was 7.6%.

1. *million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ, million kWh** | **Δ, %** |
| **January-May** | **share in Kazakhstan, %** | **January-May** | **share in Kazakhstan, %** |
|  | **RES S-E, including:** | **144.6** | **7.6%** | **230.1** | **8.4%** | **85.5** | **59.1%** |
| 1 | *Cascade of small HPPs of AlES JSC 43.7 MW* | *64.7* | *3.4%* | *57.0* | *2.1%* | *-7.7* | *-11.9%* |
| 2 | *Samruk - Green LLP Energy » SPP 2MW + SPP 1MW + SPP 0.4MW* | *8.6* | *0.5%* | *2.4* | *0.1%* | *-6.2* | *-72.1%* |
| 3 | *Samruk-Green Energy LLP WPP Shelek 5 MW* | *0.0* |  | *7.0* | *0.3%* |  |  |
| 4 | *First Wind Power Plant LLP WPP 45 MW* | *71.3* | *3.8%* | *66.6* | *2.4%* | *-4.7* | *-6.6%* |
| 5 | *Energy Semirechye LLP WPP Shelek 60 MW* | *-* | *-* | *97.1* | *-* | *-* | *-* |

# **International relations**

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

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

**Kazakhstan**

**Technical audit of power plants completed in Kazakhstan**

On May 30, 2023, the Vice Minister of Energy of the Republic of Kazakhstan, Zhandos Nurmaganbetov, at a press conference at the Central Communications Service, spoke about the technical condition of the country's power plants and the measures taken to restore them.

Recall that, as part of the instructions of the head of state Kassym-Jomart Tokayev, from December 2022 to March 2023, a team of international experts led by KPMG, with the support of the World Bank, began work on conducting an extensive technical audit of power plants in Kazakhstan.

A total of 55 power plants were surveyed. Particular attention was paid to the technical condition of the main and auxiliary equipment of thermal power plants and the conditions of its operation, - said the Vice Minister of Energy.

Based on the results of the survey, all stations were divided into categories depending on the technical condition of the equipment, service life, indicators of specific fuel consumption, accident rate, staffing and repair work.

By the end of June, a detailed action plan for each station will be prepared, outlining short- and long-term measures for further operation and maintenance.

Also during the briefing, Zhandos Nurmaganbetov said that the Ministry of Energy of the Republic of Kazakhstan has launched an updated program "Tariff in exchange for investment", the main goal of which is to reduce depreciation by at least 15% by increasing the investment attractiveness of the generation sector. According to him, an important part of the updated program is the strengthening of existing support mechanisms and reverse obligations on the part of enterprises.

So, to date, according to the submitted applications, the Ministry has adjusted the marginal tariffs for electricity for 27 out of 47 energy-producing organizations, the average growth of tariffs for which will be about 24%.

At the same time, appropriate amendments were made to the legislation to increase the investment return limit to 428 billion tenge, which will increase the pool of projects for the modernization and expansion and reconstruction of existing plants. Priority will be given to stations with the highest level of depreciation, taking into account the results of the technical audit and the developed action plan.

Work is also underway to increase the marginal tariff for the provision of services to maintain readiness to carry electric power from 590 thousand tenge to a level of more than 1.5 million tenge per MW per month. This measure will ensure the flow of funds at the stage of project implementation (including chimneys and ash dumps).

In turn, for energy enterprises, counter obligations will be introduced to invest part of their own funds, in addition to those received from tariffs, for the development of their own assets.

For the full implementation of the proposed measures, it is necessary to return the control functions of the authorized body for the targeted use of funds received under the “tariff in exchange for investment” policy, as well as to establish indicators that need to be achieved as part of the investment, the Vice Minister of Energy of the Republic of Kazakhstan emphasized.

**From July 1, Kazakhstan will launch a model of a single purchaser of electricity**

The introduction of the model of centralized purchase and sale of electricity is aimed at solving a number of current issues that require immediate settlement to ensure the country's energy security and is aimed at reforming the electricity industry.

The unified purchaser of electricity is being introduced taking into account the current situation in the industry, namely, planned imbalances in the system, the predicted shortage of electricity, unequal conditions for competition due to different tariffs of energy producing organizations and plans to build new generation sources, including renewable energy sources.

It is expected that the proposed model of the Single Purchaser - the centralized purchase and sale of electricity will allow:

- exclude speculative transactions when buying and selling electricity;

- reduce unproductive intermediaries;

- minimize deviations of interstate balances of electric energy flows at the border with adjacent energy systems, by avoiding the formation of daily schedules based on the technical capabilities of power plants to the actual schedules of consumers;

- to ensure balancing of high tariffs of newly introduced generation sources, and prices of imported electricity in times of shortage and current tariffs of operating stations, and also, in the future, to equalize electricity tariffs between regions.

The implementation of the Single Buyer model is planned from July 1, 2023.

**The main trend in the development of energy in Kazakhstan is the green agenda**

The main trend in the development of the energy sector of the Republic of Kazakhstan is the green agenda, the Minister of Energy of the Republic of Kazakhstan Almasadam Satkaliyev said on May 24, 2023 during the round table "Energy Security and Economic Growth" within the framework of the Eurasian Economic Forum.

According to him, now the country is implementing a number of projects in the field of gigawatt-class renewable energy sources (RES) with partners from the European Union, the Russian Federation, China, and Arab countries. This product can become export.

Currently, various options for delivering electricity from renewable energy sources to the markets are being considered. For example, with Azerbaijani colleagues, a project is being considered to build a cable along the bottom of the Caspian Sea to realize the unique potential for the sun and wind of the Republic of Kazakhstan. Pilot projects on the use of green hydrogen, the atom, are also being considered.

He also said that in parallel, work is underway to commission maneuvering capacities. It is planned to make maximum use of the country's hydro potential, in particular, to implement projects that have been postponed since the Soviet era.

Our priority is to use our own potential. This set of measures will allow us to solve in the medium term the current problems with the depreciation of capacities and the shortage of electricity. This should be a comprehensive program, including the construction of coal-fired stations. We do not remove this scenario from the agenda, but it should be clean coal.

**Russia**

**Russia and Belarus strengthen cooperation in the electricity sector**

On May 30, Deputy Minister of Energy of the Russian Federation Pavel Snikkars and Deputy Minister of Energy of the Republic of Belarus Denis Moroz during a working meeting at the Belarusian NPP discussed further steps to strengthen cooperation in the electric power industry.

The event was attended by the Chairman of the Management Board of the System Operator Fyodor Opadchiy, representatives of the management of JSC SO UES, GPO Belenergo, PJSC Inter RAO, PJSC Rosseti and the Association NP Market Council.

The deputy heads of the energy departments of Russia and Belarus considered issues of interaction within the framework of the implementation of the program to form a united electricity market of the Union State, including an action plan to create a market.

Russia and Belarus continue to build up integration in the fuel and energy complex. A detailed study of the conditions for the functioning of the united energy markets will make it possible to create mechanisms that are optimal for all stakeholders

The parties agreed on a protocol on introducing amendments and additions to the intergovernmental agreement on measures to ensure parallel operation of the UES of the Russian Federation and the Unified Energy System of the Republic of Belarus. Approaches were also discussed for valuation of hourly deviations of the actual balance of electricity flows between the UES of Russia and the UES of Belarus from the planned values. The issue requires further elaboration.

**Kyrgyzstan**

**Electricity shortage in Kyrgyzstan is planned to be reduced due to hydroelectric power plants and renewable energy sources**

The deficit of electricity in the Kyrgyz Republic reaches 3 billion kWh, and it is covered by imports, the Minister of Energy of the Kyrgyz Republic Taalaibek Ibraev said on May 24, 2023 during the round table "Energy Security and Economic Growth" within the framework of the Eurasian Economic Forum.

At present, we use only 10-15% of the water resource, we have the ability to generate 145 billion kWh of electricity through the operation of hydroelectric power plants. The Toktogul and Uch-Kurgan HPPs are currently being reconstructed, Kambar-Ata-2 is being built, and the Kulanak HPP is under construction. In 2025, we will receive an additional 400 MW of generating capacity. Other HPP construction projects are also being implemented.

In addition, there is a lot of sun in Kyrgyzstan, and there is an opportunity to build wind farms. Recently, an agreement was also signed with the Chinese side for the construction of a 1 GW solar power plant.

The implementation of the planned tasks of energy development will allow the Republic of Kyrgyzstan to reduce the shortage of electricity and provide the population and industry with the necessary amount of electricity.

**Kyrgyzstan and China deepen energy cooperation**

The Ministry of Energy of the Kyrgyz Republic and the leading Chinese electrical company TBEA signed an agreement on cooperation in the construction of a high-voltage power transmission line.

The implementation of this project will become especially relevant as part of the planned significant increase in electricity generation through the construction of large hydroelectric power stations, solar and wind power stations in Kyrgyzstan.

The main goal of the agreement is the future construction of a 220-500 kV transmission line from the Kyrgyz Republic to China.

The 220-500 kV line from Kyrgyzstan to China will allow the export of surplus electricity to neighboring countries at a high price.

Recall that in our republic, in order to meet the demand for "green" energy, it is planned to build renewable energy facilities. In connection with the increase in the generation of electrical energy, the question arises of creating conditions for the construction of power lines to other countries. Therefore, negotiations are already underway on the implementation of projects for the export of electricity.

The construction of a 220-500 kV overhead line is planned from the Datka substation in the Jalal-Abad region to the Irkeshtam border checkpoint. Options are also being considered for the construction of a line from the Ak-Kiya substation in the Naryn region to the Torugart border.

The Ministry of Energy, taking into account the need to improve energy security and develop energy infrastructure to ensure sustainable economic and social development of the Kyrgyz Republic, meet the needs of subscribers for electricity, and also taking into account that TBEA has financial and technical resources, experience and competencies, signs an agreement on cooperation in implementation of projects on power lines.

It is expected that this project will increase the export potential of Kyrgyzstan and create conditions for the further development of the energy industry.

**Kyrgyzstan plans to build 19 small hydroelectric power plants, wind power plants and solar power plants this year**

This year, construction of 19 small hydropower plants, wind farms and solar power plants is planned in Kyrgyzstan. Mirgul Askarova, head of the renewable energy department of the Ministry of Energy, spoke about this on May 15 at the International Conference on Sustainable Energy in Kyrgyzstan.

It is reported that the construction of 19 small hydroelectric power plants, wind farms and solar power plants with a total capacity of over 239 megawatt-hours is planned.

**Republic of Belarus**

**The Republic of Belarus staked on the development of nuclear energy**

Not having large reserves of traditional types of energy resources, the Republic of Belarus has relied on the development of nuclear energy, said on May 24, 2023 the Minister of Energy of the Republic of Belarus Viktor Karankevich during the round table "Energy Security and Economic Growth" within the framework of the Eurasian Economic Forum.

According to him, important conditions for ensuring energy security for Belarus are the diversification of types and suppliers of energy resources, reducing dependence on hydrocarbon fuel, including through the development of nuclear energy.

Now the Belarusian NPP is at the final stage of construction as part of two power units with an installed capacity of 1170 MW each.

This is the first foreign site where State Corporation Rosatom has commissioned a station. The facility also operates with the introduction of two generation pressurized water reactors that meet the latest safety requirements. While other states are just starting to implement their national nuclear energy programs, the Republic of Belarus has already formed its own nuclear infrastructure. The Belarusian nuclear power plant is already working for the country's economy and brings a tangible effect. Since the first power unit was switched on on November 3, 2022, about 15 billion kWh of electricity has been generated, which has made it possible to replace an estimated 3.9 billion cubic meters of natural gas.

The second power unit was connected to the grid on May 13, 2023, and on May 19 the power of the reactor plant was increased to 50%.

Quite recently, natural gas accounted for more than 90% of the fuel balance in the production of electricity and heat, and we expect to reduce the share of hydrocarbon fuel to 60% in energy production by commissioning the Belarusian NPP. In addition, nuclear power plants for us are a reliable, environmentally friendly, economical source of energy, as well as not only a guarantor of safety for decades to come, but also a significant contribution to offsetting the effects of climate change. With the help of nuclear power plants, it is planned to reduce more than 7 million tons of carbon dioxide emissions into the atmosphere.

**The second power unit of the BelNPP delivered the first kilowatt-hours of electricity to the country's energy system**

On May 13, 2023, at 13.24, as part of the stage-by-stage program of power start-up, the first connection to the network of the second power unit of the BelNPP took place - it gave the first kilowatt-hours of electricity to the country's unified energy system.

Synchronization of the turbogenerator of the second power unit of the nuclear power plant with the power system was preceded by a large amount of work, including bringing the reactor plant to a critical state, then to a minimum controlled power level with a further increase to 40%.

All technological operations were performed in accordance with the regulations, in compliance with the necessary safety requirements.

One of the most important and critical sub-stages of the power unit start-up was carried out, which was the result of large-scale work related to the installation and commissioning of equipment, serious preparatory operations before the turbine kick and testing its operation at idle. The second power unit of the BelNPP has been successfully included in the unified energy system, the electricity it produces is supplied to the consumers of the country.

In the near future, specialists will continue the phased development of the unit's reactor power up to 100% - the stage of its pilot operation is ahead. It provides for a wide range of testing of technological systems and equipment in different operating modes of the unit, including its disconnection from the network.

Commissioning of the unit is scheduled for 2023.

**Uzbekistan**

Uzbekistan is implementing 7 projects for the construction of wind farms with a total capacity of 3100 MW

Uzbekistan is implementing 7 projects for the construction of wind farms with a total capacity of 3,100 MW.

In particular:

- 1 WPP in the Tomdinsky district of the Navoi region with a capacity of 500 MW (the first capacities will be put into operation at the end of 2023);

- 2 wind farms in the Peshkun and Gijduvan districts of the Bukhara region, 500 MW each (the first capacities will be put into operation at the end of 2024);

- 1 wind farm in the Karauzyak region with a capacity of 100 MW and 3 wind farms in the Kungirat region of the Republic of Karakalpakstan with a capacity of 500 MW each (to be put into operation in 2024-2026).

**Armenia**

To ensure energy security, Armenia diversifies its energy system

To ensure energy security, Armenia is diversifying its energy system, Deputy Minister of Territorial Administration and Infrastructures of the Republic of Armenia Hakob Vardanyan said on May 24, 2023 during the round table "Energy Security and Economic Growth" within the framework of the Eurasian Economic Forum.

According to him, today in Armenia, 32-33% is provided by a nuclear power plant (NPP), 30-32% - thermal power plants (TPP) and the same amount - hydroelectric power plants (HPP) and 5% - solar power plants (SPP). The country's strategy is to achieve 50% of the country's electricity generation from nuclear power plants, 20% from solar power plants and 15% from thermal power plants by 2025.

It is not easy to develop solar energy in Armenia, there are regime problems. Since the country is small, there is no parallel work with the EAEU. Solar generation is generated during the day, and peak consumption begins at seven o'clock in the evening, when the sun is gone. Therefore, solar energy sources must be with storage devices.