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

**JANUARY-JUNE 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 -June 2023 generated 57,504.2 million kWh of electricity, which is 1,121.2 million kWh or 2.0 % 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- June** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **Kazakhstan** | **Total** | **56 383** | **57,504.2** | ***1,121.2*** | ***2.0%*** |
| *TPP* | *44,364.9* | 44,623.5 | *258.6* | *0.6%* |
| *GTES* | *5629.4* | 5,758.1 | *128.7* | *2.3%* |
| *hydroelectric power station* | *4484.4* | 4220.1 | *-264.3* | *-5.9%* |
| *WES* | *1,052.7* | 1,897.5 | *844.8* | *80.3%* |
| *SES* | *851.6* | 1003.7 | *152.1* | *17.9%* |
| *BSU* | *0* | 1.3 | *1.3* |  |
| 1 | **Northern** | **Total** | **41,857.9** | **42,629.2** | ***771.3*** | ***1.8%*** |
| *TPP* | *36,505.4* | 36,985.9 | *480.5* | *1.3%* |
| *GTES* | *1485.9* | 1468.3 | *-17.6* | *-1.2%* |
| *hydroelectric power station* | *2989.3* | 2668.3 | *-321.0* | *-10.7%* |
| *WES* | *598.3* | 1,168.2 | *569.9* | *95.3%* |
| *SES* | *279* | 337.2 | *58.2* | *20.9%* |
| *BSU* | *0* | 1.3 | *1.3* |  |
| 2 | **South** | **Total** | **7,109.5** | **7552.6** | ***443.1*** | ***6.2%*** |
| *TPP* | *4 590* | 4606.0 | *16.0* | *0.3%* |
| *hydroelectric power station* | *1495.1* | 1551.8 | *56.7* | *3.8%* |
| *GTES* | *150* | 154.2 | *4.2* | *2.8%* |
| *WES* | *303.4* | 575.7 | *272.3* | *89.7%* |
| *SES* | *571* | 664.9 | *93.9* | *16.4%* |
| 3 | **Western** | **Total** | **7415.6** | **7322.4** | ***-93.2*** | ***-1.3%*** |
| *TPP* | *3,269.5* | 3,031.6 | *-237.9* | *-7.3%* |
| *GTES* | *3,993.5* | 4,135.6 | *142.1* | *3.6%* |
| *WES* | *151* | 153.6 | *2.6* | *1.7%* |
| *SES* | *1.6* | 1.6 | *0* | *0* |

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

In January-June 2023, electricity generation in Akmola, Aktobe, Zhambyl, Kyzylorda, Mangystau, 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- June** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
| *1* | Akmola | 2,739.9 | 2991.8 | *251.9* | *9.2%* |
| *2* | Aktobe | 1,836.7 | 2,078.7 | *242.0* | *13.2%* |
| *3* | Almaty | 3674.4 | 3551.1 | *-123.3* | *-3.4%* |
| *4* | Atyrau | 3670.1 | 3604.4 | *-65.7* | *-1.8%* |
| *5* | East Kazakhstan | - | 1,176.7 | *-* | *-* |
| *6* | Zhambyl | 4495.2 | 3,111.8 | *-1,383.4* | *-30.8%* |
| *7* | West Kazakhstan | 2160.7 | 2322.3 | *161.6* | *7.5%* |
| *8* | Karaganda | - | 289.4 | *-* | *-* |
| *9* | Kostanay | 1285.8 | 1150.3 | *-135.5* | *-10.5%* |
| *10* | Kyzylorda | 7394.4 | 6219.1 | *-1,175.3* | *-15.9%* |
| *11* | Mangistau | 657.7 | 612.8 | *-44.9* | *-6.8%* |
| *12* | Pavlodar | 328.5 | 338.6 | *10.1* | *3.1%* |
| *13* | North Kazakhstan | 2459.7 | 2567.7 | *108.0* | *4.4%* |
| 14 | Turkestan | 23,926.8 | 24,301.5 | *374.7* | *1.6%* |
| *15* | Abai | 807.2 | 1,097.8 | *290.6* | *36.0%* |
| *16* | Zhetysuskaya | 945.9 | 1051.2 | *105.3* | *11.1%* |
| 17 | Ulytauskaya | - | 1,039.0 | *-* | *-* |
|  | **Total for Kazakhstan** | **56,383.0** | **57,504.2** | ***1,121.2*** | ***2.0%*** |

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

In January-June 2023, electricity generation by energy holdings and large energy-producing organizations amounted to 25,493.6 million kWh , which is 123.6 million kWh more than the same period in 2022 (25,370 million kWh ), and their combined share of the total production volume amounted to 44.3 %.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ 2023/2022** |
| **January - June** | **share in Kazakhstan, %** | **January- June** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **Total** | **25,370.0** | **45.0%** | **25,493.6** | **44.3%** | **123.6** | **0.5%** |
| **1.** | *ERG* | *9,848.1* | *17.5%* | *9,744.2* | *16.9%* | *-103.9* | *-1.1%* |
| **2.** | *“Kazakhmys Corporation” LLP* | *2989.2* | *5.3%* | *3,071.3* | *5.3%* | *82.1* | *2.7%* |
| **3.** | *“Kazzinc” LLP*  | *1228.2* | *2.2%* | *1,035.5* | *1.8%* | *-192.7* | *-15.7%* |
| **4.** | *“Arcelor Mittal Temirtau" JSC* | *1220.0* | *2.2%* | *949.0* | *1.7%* | *-271.0* | *-22.2%* |
| **5.** | *“KKS” LLP* | *3306.9* | *5.9%* | *3,165.5* | *5.5%* | *-141.4* | *-4.3%* |
| **6.** | *CAEPCO* | *2614.7* | *4.6%* | *2834.1* | *4.9%* | *219.4* | *8.4%* |
| **7.** | *“Zhambyl” GRES* | *1674.9* | *3.0%* | *1725.2* | *3.0%* | *50.3* | *3.0%* |
| **8.** | *Oil and gas enterprises* | *2488.0* | *4.4%* | *2968.8* | *5.2%* | *480.8* | *19.3%* |

*1.3 Electricity generation by energy producing organizations* *of "Samruk-Energy" JSC*

The volume of electricity generation by energy producing organizations of “Samruk-Energy” JSC for January-June 2023 amounted to 17,872.1million kWh. The increase in electricity generation compared to the same period in 2022 amounted to 615.9 million kWh or 3.6 %.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ 2023/2022** |
| **January June** | **share in Kazakhstan, %** | **January - June** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **"Samruk-Energy" JSC** | **17256.2** | **30.6%** | **17,872.1** | **31.1%** | **615.9** | **3.6%** |
| *1* | *“AlES” JSC* | *2682.6* | *4.8%* | *2679* | *4.7%* | *-3.6* | *-0.1%* |
| *2* | *"Ekibastuz GRES-1" LLP* | *10847.3* | *19.2%* | *11183.5* | *19.4%* | *336.2* | *3.1%* |
| *3* | *"Ekibastuz GRES-2" JSC* | *2912.0* | *5.2%* | *3044.9* | *5.3%* | *132.9* | *4.6%* |
| *4* | *"Shardara HPP" JSC* | *276.9* | *0.5%* | *357.8* | *0.6%* | *80.9* | *29.2%* |
| *5* | *“Moynakskaya HPP” JSC* | *449.2* | *0.8%* | *408.4* | *0.7%* | *-40.8* | *-9.1%* |
| *6* | *“Samruk-Green Energy” LLP* | *10.2* | *0.0%* | *11.1* | *0.0%* | *0.90* | *8.8%* |
| *7* | *WPP Shelek by “Energy Semirechye” LLP*  | *7.2* |  | *112.1* | *0.2%* |  |  |
| *8* | *"First wind power plant" LLP* | *78.0* | *0.1%* | *75.3* | *0.1%* | *-2.7* | *-3.5%* |

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

*in power generation in Kazakhstan*

“Samruk-Energy” JSC remains the leader in the electricity market of Kazakhstan and amounts to 31.1%.

**Kazakhstan**

**57 504,2 mln.kWh**

 

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

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

January-June 2023 the index of industrial production (hereinafter - IIP) in Kazakhstan amounted to 103.8%.

Production growth is observed in the mining and quarrying industry by 3.7%, manufacturing - by 3.4%, supply of electricity, gas, steam, hot water and air conditioning - by 6.8%, water supply; collection, processing and disposal of waste, activities for the elimination of pollution - by 6.4%.

Among the regions, the largest growth was recorded in Akmola, North Kazakhstan, 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-June 2023, there was an increase in the dynamics of electricity consumption of the republic in comparison with the same indicators in 2022 by 1,629.9 million kWh or 2.9 % . Thus, in the northern and southern zones of the republic, consumption increased by 1.9 % and 7.4 %, respectively.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January June** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **Kazakhstan** | **56 115.7** | **57,745.6** | ***1,629.9*** | ***2.9%*** |
| *1* | Northern zone | 36,238.4 | 36,931.8 | *693.4* | *1.9%* |
| *2* | Western zone | 7401.5 | 7412.5 | *11.0* | *0.1%* |
| *3* | Southern zone | 12475.8 | 13,401.3 | *925.5* | *7.4%* |
|  | **incl . \_ by regions** |   |   |  |  |
| *1* | Akmola  | 5276.5 | 5627.2 | *350.7* | *6.6%* |
| *2* | Aktobe | 3405.2 | 3183.9 | *-221.3* | *-6.5%* |
| *3* | Almaty  | 6242.0 | 5959.5 | *-282.5* | *-4.5%* |
| *4* | Atyrau  | 3370.2 | 3551.9 | *181.7* | *5.4%* |
| *5* | Abai | - | 1578.8 | *-* | *-* |
| *6* | East Kazakhstan | 5201.2 | 3724.3 | *-1,476.9* | *-28.4%* |
| *7* | Zhetysuskaya | - | 797.0 | *-* | *-* |
| *8* | Zhambyl  | 2379.9 | 2527.2 | *147.2* | *6.2%* |
| *9* | West Kazakhstan | 1412.9 | 1192.6 | *-220.4* | *-15.6%* |
| *10* | Karaganda | 9484.1 | 7724.0 | *-1,760.1* | *-18.6%* |
| *11* | Kostanay  | 2400.4 | 2320.5 | *-79.9* | *-3.3%* |
| *12* | Kyzylorda  | 954.5 | 992.3 | *37.8* | *4.0%* |
| *13* | Mangistau  | 2618.3 | 2668.1 | *49.8* | *1.9%* |
| *14* | Pavlodar | 9653.6 | 9888.6 | *235.0* | *2.4%* |
| *15* | North Kazakhstan | 817.5 | 850.6 | *33.1* | *4.0%* |
| *16* | Turkestan | 2,899.4 | 3125.3 | *225.9* | *7.8%* |
| *17* | Ulytauskaya | - | 2033.8 | *-* | *-* |

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

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

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Name** | **January- June** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **Total** | **21,841.7** | **21,149.9** | **-18,026.6** | **-3%** |
| *1.* | *ERG* | *7527.3* | *6,805.9* | *-721.4* | *-10%* |
| *2.* | *Kazakhmys Corporation LLP* | *1978.8* | *2025.8* | *47.0* | *2%* |
| *3.* | *Kazzinc LLP \_* | *1245.5* | *945.3* | *-300.2* | *-24%* |
| *4.* | *JSC Arcelor Mittal Temirtau"* | *1,718.4* | *1493.3* | *-225.2* | *-13%* |
| *5.* | *KKS LLP* | *3,347.6* | *3355.3* | *7.8* | *0%* |
| *6.* | *CAEPCO JSC* | *2808.1* | *2,758.3* | *-49.8* | *-2%* |
| *7.* | *Zhambyl GRES* | *701.6* | *1,199.4* | *497.8* | *71%* |
| *8.* | *Oil and gas enterprises* | *2514.4* | *2566.6* | *52.2* | *2%* |

In January-June 2023, there is an increase in electricity consumption by “Samruk-Energy” JSC companies by 193.1 million kWh or 5% compared to the same indicators for 2022.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **No.**  | **Name** | **January June** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
|  | **"Samruk-Energy" JSC** | **4018.6** | **4211.7** | **193.1** | **5%** |
| *1.* | *“Bogatyr- Komir” LLP* | *153.9* | *160.1* | *6.2* | *4%* |
| *2.* | *“Alatau Zharyk Company” JSC* | *518.5* | *517.1* | *-1.4* | *0%* |
| *3.* | *"AlmatyEnergoSbyt" LLP* | *3346.2* | *3,534.4* | *188.2* | *6%* |

*2.4 Electricity consumption by large consumers in Kazakhstan*

In January-June 2023, compared to the same period in 2022, electricity consumption by large consumers decreased by 269.2 million kWh or 1.5%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Consumer** | **January June** | **Δ, million kWh** | **Δ, %** |
| **2022** | **2023** |
| *1* | *“Arcelor Mittal Temirtau" JSC* | *1,852.9* | *1,786.3* | *-66.6* | *-3.6* |
| *2* | *AZF ( Aksuysky ) "TNK Kazchrome" JSC* | *2527.0* | *2541.8* | *14.8* | *0.6* |
| *3* | *“Kazakhmys Smelting” LLP* | *632.3* | *281.7* | *-350.5* | *-55.4* |
| *4* | *“Kazzinc” LLP*  | *1380.8* | *1332.5* | *-48.3* | *-3.5* |
| *5* | *"Sokolovsko-Sarbayskoye GPO" JSC* | *778.1* | *649.5* | *-128.6* | *-16.5* |
| *6* | *“Kazakhmys Corporation” LLP* | *661.2* | *570.6* | *-90.6* | *-13.7* |
| *7* | *AZF (Aktobe) "TNK Kazchrome" JSC* | *1560.2* | *1408.9* | *-151.3* | *-9.7* |
| *8* | *RSE “Channel them. Satpaev"* | *136.3* | *146.9* | *10.6* | *7.8* |
| *9* | *"YDD Corporation" LLP* | *423.2* | *538.8* | *115.7* | *27.3* |
| *10* | *"Ust-Kamenogorsk titanium -magnesium plant" JSC* | *370.5* | *317.9* | *-52.7* | *-14.2* |
| *11* | *"Atyrau Oil Refinery" LLP* | *408.1* | *404.0* | *-4.0* | *-1.0* |
| *12* | *“Tengizchevroil”LLP*  | *949.1* | *1002.9* | *53.8* | *5.7* |
| *13* | *PAZ (Pavlodar Aluminum Smelter) JSC* | *484.6* | *472.5* | *-12.1* | *-2.5* |
| *14* | *"KEZ" (Kazakhstan electrolysis plant) JSC* | *1,873.3* | *1,857.6* | *-15.7* | *-0.8* |
| *15* | *"NC Kazakhstan Temir Zholy" JSC* | *1,750.9* | *1,857.7* | *106.8* | *6.1* |
| *16* | *"KEGOC" JSC* | *2479.2* | *2,828.7* | *349.5* | *14.1* |
| **Total** | ***17,998.4*** | ***18,267.7*** | ***-269.2*** | ***-1.5*** |

# *Export-import of electrical energy*

In order to balance the production and consumption of electricity in January-June 2023, exports to the Russian Federation amounted to 688 million kWh, imports from the Russian Federation 1,135 million kWh .

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **January June** | **Δ, million kWh** | **Δ, %** |
| **2022 \_** | **2023 \_** |
| **Export of Kazakhstan** | **-812.4** | **-1264.8** | **-452.3** | **55.7%** |
| *in Russia* | -592.7 | -688.0 | -95.3 | 16.1% |
| *in the IPS of Central Asia* | -219.7 | -576.8 | -357.0 | 162.5% |
| **Import of Kazakhstan** | **683.5** | **1148.6** | **465.0** | **68.0%** |
| *From Russia* | 683.5 | 1135.0 | 451.5 | 66.1% |
| **Balance- flow "+" deficit, "-" excess** | **-128.9** | **-116.2** | **12.7** | **-9.8%** |

# **Coal**

According to the Bureau of National Statistics, Kazakhstan produced 54,554.2 thousand tons of hard coal in January-June 2023, which is 1.4% less than in the same period in 2022 (55,341.8 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January- June** | **Δ, thousand tons** | **Δ, %** |
| **2022** | **2023** |
| 1 | *Pavlodar* | *33,881.3* | *34,164.7* | *283.4* | *0.8%* |
| 2 | *Karaganda* | *18,361.4* | *15,841.2* | *-2,520.2* | *-13.7%* |
| 3 | *East Kazakhstan* | *19.5* | *0.3* | *-19.2* | *-98.5%* |
| 4 | *Abai* | *3,984.7* | *3662* | *322.7* | *-8.1%* |
|  | **Total for the Republic of Kazakhstan** | **55,341.8** | **54,554.2** | **- 787.6** | **-1.4%** |

In January-June 2023 Bogatyr Komir LLP produced 21 335.8 thousand tons, which is 2.3% less than in the corresponding period of 2022 (21,832.8 thousand tons) .

The sold volume of coal in January- June 2023 amounted to 21,157.5 thousand tons, of which 16,213.3 thousand tons went to the domestic market of the Republic of Kazakhstan, which is 2.2% less than in the same period in 2022 (16,583 thousand . tons) and for export (RF) - 4,944.2 thousand tons, which is 7.1 % less than in the corresponding period of 2022 ( 5,322.2 thousand tons).

According to the indicators for January- June 2023, in comparison with similar indicators in 2022, Bogatyr Komir LLP observed a decrease in coal sales by 747.7 thousand tons or 3.4 %.

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.**  | **Region** | **January June** | **Δ,** **thousand tons** | **Δ, %****2023/2022** |
| **2022** | **2023** |
| **Total to the domestic market of the Republic of Kazakhstan** | **16,583.0** | **16,213.3** | **- 369.7** | **- 2.2 %** |
| **Total for export to Russia** | **5322.2** | **4944.2** | **-378** | **-7.1 %** |
| **TOTAL** | **21,905.2** | **21,157.5** | **-747.7** | **-3.4%** |

# **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 2,525 MW (46 WPPs - 1107.5 MW; 44 SPPs - 1148 MW; 37 HPPs - 267.4 MW; 3 BioPPs - 1.77 MW).

According to the System Operator, the volume of electricity supply in the EU of the Republic of Kazakhstan by objects using renewable energy sources (SPP, WPP, BGS, small hydropower plants) of the Republic of Kazakhstan for January -June 2023 amounted to 3,377 million kWh . Compared to January-June 2022 (2,383 million kWh ), the increase was 994 million kWh or 41.7 %.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ, million kWh** | **Δ, %** |
| **January June** | **share in Kazakhstan, %** | **January June** | **share in Kazakhstan, %** |
| **1** | **Production in the Republic of Kazakhstan** | **56383.0** | **100%** | **57504.2** | **100%** | **1121.2** | **2.0%** |
| **2** | **RES generation in Kazakhstan** | **2383.0** | **4.2%** | **3377.0** | **5.9%** | **994.0** | **41.7%** |
| **3** | **RES generation, incl . by zones** | ***share in the respective zone*** |
|  | *Northern zone* | *984.4* | *2.4%* | *1624.7* | *3.8%* | *640.3* | *65.0%* |
|  | *Southern zone* | *1246.0* | *17.5%* | *1595.3* | *21.1%* | *349.3* | *28.0%* |
|  | *Western zone* | *152.6* | *2.1%* | *155.2* | *2.1%* | *2.6* | *1.7%* |
| **4** | **RES generation, incl . by zones** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *Northern zone* | *984.4* | *41.3%* | *1624.7* | *48.1%* | *640.3* | *65.0%* |
|  | *Southern zone* | *1246.0* | *52.3%* | *1595.3* | *47.2%* | *349.3* | *28.0%* |
|  | *Western zone* | *152.6* | *6.4%* | *155.2* | *4.6%* | *2.6* | *1.7%* |
| **5** | **RES generation, incl . by type** | ***share in RES of the Republic of Kazakhstan, %*** |
|  | *SES* | *851.6* | *35.7%* | *1003.7* | *29.7%* | *152.1* | *17.9%* |
|  | *WES* | *1052.7* | *44.2%* | *1897.5* | *56.2%* | *844.8* | *80.3%* |
|  | *Small HPPs* | *478.7* | *20.1%* | *474.5* | *14.1%* | *-4.2* | *-0.9%* |
|  | *BSU* | *-* | *-* | *1.3* | *0.0%* | *1.3* | *-* |

# *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 a qualified conditional consumer LLP "GRES Topar " in the amount of 0.87 tenge / kWh without VAT.

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

“Samruk-Energy” JSC (SPP, WPP and small hydropower plants) in January-June 2023 amounted to 276 million kWh, which is 58.9% higher compared to the same period in 2022 (173.7 million kWh). kWh ).

The share of RES electricity of Samruk-Energo JSC, taking into account small HPPs, in January-June 2023 amounted to 8.2% of the volume of electricity generated by RES facilities in the Republic of Kazakhstan, while in 2022 this figure was 7.3%.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.**  | **Name** | **2022** | **2023** | **Δ, million kWh** | **Δ, %** |
| **January June** | **share in Kazakhstan, %** | **January June** | **share in Kazakhstan, %** |
|  | **RES S-E, including:** | **173.7** | **7.3%** | **276.0** | **8.2%** | **102.3** | **58.9%** |
| 1 | *Cascade of small HPPs of AlES JSC 43.7 MW* | *85.5* | *3.6%* | *77.5* | *2.3%* | *-8.0* | *-9.4%* |
| 2 | *Samruk - Green LLP Energy » SPP 2MW + SPP 1MW + SPP 0.4MW* | *10.2* | *0.4%* | *3.0* | *0.1%* | *-7.2* | *-70.6%* |
| 3 | *Samruk - Green Energy LLP WPP Shelek 5 MW* | *0.0* |  | *8.1* | *0.2%* |  |  |
| 4 | *First Wind Power Plant LLP WPP 45 MW* | *78.0* | *3.3%* | *75.3* | *2.2%* | *-2.7* | *-3.5%* |
| 5 | *Energy Semirechye LLP WPP Shelek 60 MW* | *-* | *-* | *112.1* | *-* | *-* | *-* |

# **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**

**"Green" energy of the Republic of Kazakhstan: RES generated 59% more electricity at once than a year earlier**

According to the results of the first quarter of this year, the installed capacity of renewable energy sources in Kazakhstan amounted to 2.5 thousand MW, which is immediately 22.3% more than a year earlier.

Most of the installed capacity came from solar power plants: 45.5% or 1.1 thousand MW, an annual growth of 5.1%.

Another 43.9% of all renewable energy sources in the Republic of Kazakhstan were occupied by wind power plants: 1.1 thousand MW, plus 61.9% per year.

The remaining capacities were distributed to small hydroelectric power plants (267.4 MW, minus 4.8% per year) and bioelectric power plants (total 1.8 MW, an annual reduction of 4.4 times).

Electricity generation by renewable energy facilities in the first quarter of 2023 amounted to 1.5 billion kWh , which is 58.5% more than a year earlier.

Despite the fact that solar power plants have the largest installed capacity, wind farms generate the largest amount of electricity in the country: 1 billion kWh in the first quarter, up 84.1% for the year.

In turn, solar power plants generated 350.3 million kWh of electricity, 26% more than a year earlier.

Electricity generation by small hydropower plants increased by 13.2% over the year, to 124.2 million kWh , bioelectric power plants - 2.8 times, to 1.1 million kWh .

The share of electricity generated by RES in the total electricity production in the Republic of Kazakhstan amounted to 4.8%, against 3% a year earlier (plus 1.8 p.p.).

tenge in 2021 , 13.7% less than a year earlier.

The largest volume fell on the Zhambyl region: 52.4 billion tenge , annual growth - 8.3 times. The top three also included Aktobe (25.6 billion tenge , annual growth - 2.6 times) and Akmola (11.2 billion tenge , minus 81.5% per year) regions.

Meanwhile, this year, the Asian Infrastructure Investment Bank (AIIB) is preparing to finance the 100 MW Shokpar wind farm project . The goal of the project is to support Kazakhstan's energy transition by increasing the installed capacity of wind farms.

**A single purchaser of electrical energy has been determined in the Republic of Kazakhstan**

The Minister of Energy of the Republic of Kazakhstan approved the order dated June 6, 2023 "On the definition of a single purchaser of electrical energy".

In accordance with the order, the limited liability partnership "Settlement and Financial Center for the Support of Renewable Energy Sources" was determined as a single purchaser of electrical energy.

The Ministry of Energy received the authority to determine a single purchaser in accordance with the adopted amendments on administrative reform in the Republic of Kazakhstan.

The unified purchaser of electricity will carry out the planned purchase of electricity from domestic power plants a day in advance by holding centralized tenders on the electronic platform of centralized tenders.

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 order comes into force on July 1, 2023.

**Astana hosted the Forum of Energy Veterans of Kazakhstan and the CIS**

On June 15, Astana hosted the Forum of Energy Veterans of Kazakhstan and the CIS with the participation of the heads of power grid companies and representatives of industry government agencies. The forum was organized by KEGOC JSC and the Council of Veteran Power Engineers of the Kazakhstan Electric Power Association (KEA).

Veterans of the power industry of Kazakhstan, as well as their colleagues from Belarus, Kyrgyzstan and Russia, gathered to discuss the most pressing problems of the electric power industry.

During the forum, Chairman of the Board of KEGOC JSC Kanysh Moldabayev briefed the participants on the current situation in the electric power industry of Kazakhstan, and also informed about the long-term development plans of KEGOC JSC.

The head of KEGOC drew attention to the fact that the most important challenge for the industry in the next few years is a possible shortage of electricity and capacity. In order to cover the projected deficit, the Ministry of Energy of Kazakhstan approved the Energy Balance of the Republic of Kazakhstan until 2035, which provides for the modernization of existing and construction of new generating capacities, as well as projects of KEGOC to strengthen energy ties and integrate the Western Zone with the Unified Electricity System of Kazakhstan.

At the meeting, an exchange of views took place around another acute problem of the industry - the issues of qualified personnel. About 139,000 people currently work in the energy sector, and there are difficulties in supplying the industry with qualified personnel. One of the main factors influencing the growth of staff turnover is the salary level, which is 13.8% below the national average salary.

In addition to analyzing the current situation in the electric power industry and ways to solve them, issues of continuity of generations and care for those who devoted their entire lives to the development of domestic energy were discussed. The older generation of power engineers believes that the fruitful activity of the Ministry of Energy of the Kazakh SSR should become a truly worthy example for young modern leaders of successful management of the most important energy sector of the country.

The issues submitted for consideration by the forum were widely discussed by the delegates, and relevant proposals and wishes were adopted on the issues raised by the industry, which are reflected in the adopted resolution.

At the end of the meeting, a number of veterans were awarded badges " Ardager Power Engineer of KEA", as well as honorary titles and diplomas of KEA.

**Russia**

**In Russia, for the first time, the standard for technical requirements for solar power plants with a capacity of 5 MW and above has been approved**

The Federal Agency for Technical Regulation and Metrology ( Rosstandart ) approved GOST R 70787-2023 "Unified Energy System and Isolated Energy Systems. Renewable energy sources. Technical requirements for photovoltaic solar stations.

For the first time in Russia, a standard has been adopted that establishes the technical requirements for solar power plants (SPS) when they operate as part of the Unified Energy System and technologically isolated territorial electric power systems.

The standard was developed by the Hevel Group of Companies within the framework of the activities of the subcommittee PK-5 "Distributed generation (including RES)", which is part of the technical committee for standardization TC 016 "Power industry" of the Federal Agency for Technical Regulation and Metrology. SO UES JSC acts as the base organization of the committee, which also performs the functions of the secretariat of TC 016. The system operator took an active part in all stages of the development of this standard, ensuring the correctness of the system technical requirements for SES when they work as part of the power system and consistency with the rules for the technological functioning of electric power systems .

GOST R 70787-2023 was developed to ensure the design, construction (reconstruction, modernization, technical re-equipment) and operation of photovoltaic solar power plants intended for the production of electrical energy.

The provisions of the new standard apply to photovoltaic solar power plants of all types with an installed capacity of 5 MW and above for newly commissioned, reconstructed or technically re-equipped solar power plants. Its requirements must be taken into account by the owners and other legal owners of solar power plants, other organizations operating them, as well as design, research and other organizations engaged in the design of construction, reconstruction, modernization, technical re-equipment of solar power plants, the development of their power distribution schemes.

Hevel group of companies , one of the leading participants in the renewable energy industry in Russia, in various areas related to the safe integration of renewable energy sources into the energy system, their reliable and efficient operation. It is logical that our cooperation in the development of remote control of solar power plants from dispatch centers for the purposes of managing the regime and optimizing the operational and technological management of solar power plants, a joint study of the use of electricity storage devices at solar power plants resulted in a fundamental regulatory and technical document that establishes technical requirements for this type RES generation,” said Sergey Pavlushko , First Deputy Chairman of the Board of SO UES JSC, Chairman of TC 016 Electric Power Industry .

GOST R 70787-2023 comes into force on August 1, 2023. After publication, the official text of the national standard will be available for review on the website of Rosstandart , as well as for ordering in the online store of the authorized organization of the Federal State Budgetary Institution "Standardization Institute".

**The Ministry of Energy of the Russian Federation lowered the forecast for the share of renewable energy sources in the energy balance of the Russian Federation to 3% by 2035 and 9% by 2050**

The share of renewable energy sources (RES) in the energy balance of the Russian Federation will be less than previous expectations: by 2035 it may be 3%, and by 2050 - 9%.

**The planned production of electricity at nuclear power plants in the Russian Federation in 2023 will amount to 214.2 billion kWh**

The planned production of electricity at nuclear power plants in Russia in 2023 will amount to 214.2 billion kWh , follows from the annual report of Atomenergoprom (part of Rosatom , which consolidates all civilian assets of the Russian nuclear industry) last year.

“The planned volume of electricity generation at nuclear power plants in 2023 is set at 214.2 billion kWh (the balance of the Federal Antimonopoly Service of Russia, the indicator of the state program “Development of the nuclear power industry complex”),” the report says.

Due to the planned retirement of generating capacities, Russian nuclear power plants will reduce the total output in 2023, Andrey Petrov, CEO of the Rosenergoatom concern (part of the electric power division of Rosatom), said at the beginning of this year . According to him, this trend will continue until 2027, and then a new increase in generation is expected in connection with the launch of new NPP units.

Nuclear power plants in Russia set a new electricity generation record in 2022, delivering 223.4 billion kWh .

Today, the Rosenergoatom concern, as its branches, includes 11 operating nuclear power plants, 37 power units are in operation (including a floating nuclear thermal power plant consisting of two reactor plants) with a total installed capacity of over 29.5 GW. Currently, the share of nuclear generation is about 20% of the total electricity generation in the Russian Federation.

By 2045, the share of nuclear generation in Russia should grow to 25%.

**Kyrgyzstan**

**Electricity generation in Kyrgyzstan increased by 10% in May**

In Kyrgyzstan, electricity generation increased by 10% in May. Such data are provided by the National Statistical Committee .

In May, 960.5 million kWh were generated .

The volume of electricity production in January-May 2023 increased by 17% - up to 6.5 billion kWh .

According to the forecast of the National Energy Holding , electricity consumption in Kyrgyzstan in 2023 will reach a record 17.2 billion kWh . The need is planned to be covered by generation (14.7 billion kWh ) and imports (2.5 billion kWh ).

**Ministry of Energy informs about the progress of construction of CASA-1000 in Kyrgyzstan**

As part of the implementation of the CASA-1000 project in Kyrgyzstan, construction work continues on a 500 kV transmission line and a 500 kV cell at the Datka substation .

At the moment, work has been completed on laying access roads to the supports, digging pits and pouring concrete foundations for all 1243 supports. Work is underway on the installation of poles, where 1,125 poles have already been installed, and wires have been suspended at 186.8 km.

In total, 456 kilometers of transmission lines will be laid in Kyrgyzstan from a
500 kV cell at the Datka substation .

**Rosatom will build a unique small nuclear power plant in Kyrgyzstan**

Rosatom plans to build its first small nuclear power plant (MAES) outside of Russia - construction will begin in Kyrgyzstan . This information was confirmed by the head of the state corporation Alexei Likhachev during the Eurasian Congress.

Likhachev noted that Kyrgyzstan is very active in implementing a project to build a small nuclear power plant based on Russian technology. He called this export delivery a flagship one and noted that it would be the first of its kind for the world market.

According to the annual report of Atomenergoprom , Rosatom plans to complete the preliminary feasibility study (pre-feasibility study) of the MAPP for Kyrgyzstan and Myanmar this year. In addition, before the end of the year, the state corporation will hand over the pre-feasibility study of the MAES to Indian partners.

At the stand of Rosatom , the delegations were provided with information about the joint project of the nuclear power plant of Russia and Belarus, which is considered the most efficient in the world. Alexei Likhachev emphasized that this is a world-class project, consisting of two powerful units with a capacity of 1,200 megawatts each. At present, the first block of the Belarusian NPP has already been put into operation, and the second is at the testing stage.

**Armenia**

**Prime Minister N. Pashinyan : Armenia can become a unique regional power industry center**

Indicators of economic growth and economic activity in Armenia create favorable conditions for the formation of very optimistic expectations, both in the current year and in the near future. This was announced on June 9, speaking at the Eurasian Congress, by the Prime Minister of the Republic of Armenia Nikol Pashinyan .

According to him, in 2022, the Armenian economy recorded impressive economic growth. GDP growth compared to 2021 was 12.6%, the highest since 2008. In many ways, GDP growth was due to the growth of industry, trade, including trade services and construction, and export growth amounted to 77.7%, moreover, exports to the EAEU countries grew almost three times. “But I note that this is not the limit for us, sustainable development is possible if there are three main components: economic growth, social responsibility and environmental balance. Eurasia has great potential for economic growth,” the head of the Armenian government noted.

He continued that ensuring logistical security is one of the most important factors in the development of the national economies of the Eurasian states. Strengthening the potential of national economies is also due to a competent approach to ensuring energy security. Based on modern geopolitical realities, a new approach to the energy agenda is needed. “Currently, Armenia is actively working on the gradual liberalization of the electricity market, which creates new opportunities and favorable conditions for interstate electricity trade. We are developing production capacities, carrying out large-scale reconstruction of substations and transmission lines, and building high-voltage lines Armenia-Iran and Armenia-Georgia, which will contribute to the formation of the North-South energy corridor and create new opportunities for the export, import, transit or seasonal exchange of electricity. Thus, Armenia can become a unique regional power industry center,” Pashinyan stressed .

He considers it essential to continue working towards achieving carbon neutrality and advancing the green agenda. “Green economy is an alternative to the dominant economic model, which causes a shortage of resources and poses a threat to the environment. It is no coincidence that these issues have firmly entered not only the environmental, but also the economic agenda. The green energy policy of Armenia is primarily aimed at decarbonizing and limiting greenhouse gas emissions, developing renewable and alternative sources for energy production, introducing energy efficient and resource-saving technologies, introducing scientific and innovative technologies, as well as fulfilling international obligations under the global climate agenda. In this context, the development and maximum use of the potential of renewable energy is an interesting topic for discussion. Renewable energy sources such as solar, wind and hydro power have great potential in terms of promoting economic growth and sustainable development in the region. Investments in renewable energy sources can contribute to global efforts to combat climate change,” Pashinyan stressed .

In addition to the development of renewable energy sources, the Prime Minister of the Republic of Armenia also drew attention to nuclear energy, which is clean energy. The development of nuclear energy is also important from the point of view of ensuring energy security and independence of the EAEU countries. “To this end, we continue to take steps towards the promising use of nuclear energy, extending the life of the 2nd power unit of the Armenian NPP and working on the construction of a new power unit,” said the head of the Armenian Cabinet .

He also noted that a key component of ensuring equal economic competition at the global level is the effective development of advanced digital tools and technologies. “In particular, I want to touch on artificial intelligence, a rapidly developing field that can change many areas of human life. Experts predict that in the future AI algorithms will become more personalized, more advanced and integrated into society. Overall, the future of artificial intelligence is extremely attractive, but it is important to consider the ethical implications and ensure that artificial intelligence is developed and used in a responsible and useful manner. At the same time, we must not forget that innovations are primarily people who create them, their creative energy and will, therefore the development of human potential is of great importance,” the Prime Minister of the Republic of Armenia stressed.