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**REPORT**

**ANALYSIS OF THE ELECTRICITY AND COAL MARKET OF KAZAKHSTAN**

**JANUARY-JUNE 2021**

**DEPARTMENT "MARKET DEVELOPMENT"**

**July, 2021**

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# **SECTION I**

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

According to the System Operator, power plants of the Republic of Kazakhstan in January-June 2021 generated 57,325.4 million kWh of electricity, which is 7.1% more than the same period in 2020. The growth in generation was observed in all zones of the UPS of Kazakhstan.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Zone** | **Generation type** | **January-June** | | **Δ, %**  **2020** |
| **2020** | **2021** |
| **Kazakhstan** | **Total** | **53502.6** | **57325.4** | **7.1%** |
| *TPP* | *42659.1* | *45779.1* | *7.3%* |
| *GTES* | *4865.7* | *5232.1* | *7.5%* |
| *hydroelectric power station* | *4890.6* | *4666.1* | *-4.6%* |
| *WES* | *493.7* | *816.8* | *65.4%* |
| *SES* | *591.4* | *829.7* | *40.3%* |
| *BSU* | *2.1* | *1.6* | *-23.8%* |
| **Northern** | **Total** | **40642.3** | **44044.6** | **8.4%** |
| *TPP* | *35241.5* | *38590.7* | *9.5%* |
| *GTES* | *1646.7* | *1499.1* | *-9.0%* |
| *hydroelectric power station* | *3303.7* | *3283.6* | *-0.6%* |
| *WES* | *230.0* | *387.7* | *68.6%* |
| *SES* | *218.3* | *281.9* | *29.1%* |
| *BSU* | *2.1* | *1.6* | *-23.8%* |
| **South** | **Total** | **5950.1** | **6223.4** | **4.6%** |
| *TPP* | *3774.7* | *3876.4* | *2.7%* |
| *GTES* | *101.7* | *148.2* | *45.7%* |
| *hydroelectric power station* | *1586.9* | *1382.5* | *-12.9%* |
| *WES* | *115.2* | *270.1* | *134.5%* |
| *SES* | *371.6* | *546.2* | *47.0%* |
| **Western** | **Total** | **6910.2** | **7057.4** | **2.1%** |
| *TPP* | *3642.9* | *3312.0* | *-9.1%* |
| *GTES* | *3117.3* | *3584.8* | *15.0%* |
| *WES* | *148.5* | *159.0* | *7.1%* |
| *SES* | *1.5* | *1.6* | *6.7%* |

# 

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

In January-June 2021, compared to the same period in 2020, electricity generation increased significantly (an increase of 15% or more) in the Zhambyl, Kyzylorda, Pavlodar and Turkestan regions. At the same time, a decrease in electricity generation was observed in Aktobe, Almaty, East Kazakhstan, Karaganda, Mangystau, North Kazakhstan regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **January June** | | **Δ, %** |
| **2020** | **2021** |
| 1 | Akmola | 2378.1 | 2,726.5 | 14.7% |
| 2 | Aktobe | 2049.0 | 1910.7 | -6.7% |
| 3 | Almaty | 3,693.8 | 3,548.7 | -3.9% |
| 4 | Atyrau | 3,137.6 | 3,491.5 | 11.3% |
| 5 | East Kazakhstan | 4,775.2 | 4670.4 | -2.2% |
| 6 | Zhambyl | 1,169.4 | 1402.2 | 19.9% |
| 7 | West Kazakhstan | 1,174.2 | 1,196.9 | 1.9% |
| 8 | Karaganda | 8411.8 | 7997.8 | -4.9% |
| 9 | Kostanay | 587.1 | 568.9 | -3.1% |
| 10 | Kyzylorda | 279.8 | 339.9 | 21.5% |
| eleven | Mangistau | 2598.4 | 2369.0 | -8.8% |
| 12 | Pavlodar | 20,711.1 | 24,637.2 | 19.0% |
| 13 | North Kazakhstan | 1730.0 | 1533.1 | -11.4% |
| 14 | Turkestan | 807.0 | 932.6 | 15.6% |
|  | **Total for Kazakhstan** | **53,502.5** | **57,325.4** | **7.1%** |

The volume of electricity production by energy producing organizations of Samruk-Energy JSC for January-June 2021 amounted to 17,891.1million kWh or an increase of 25.8% compared to the same period in 2020.

*million kWh*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Δ 2021/2020** | |
| **January June** | **share in Kazakhstan, %** | **January June** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **Samruk-Energy JSC** | **14,222.7** | **26.6%** | **17,891.1** | **31.2%** | **3668.4** | **25.8%** |
| *1* | *JSC AlES* | *2,815.7* | *5.3%* | 2657.1 | *4.6%* | *-158.6* | *-5.6%* |
| *2* | *LLP "Ekibastuz GRES-1"* | *8483.9* | *15.9%* | 10696.7 | *18.7%* | *2212.8* | *26.1%* |
| *3* | *JSC "Ekibastuz GRES-2"* | *2,079.6* | *3.9%* | 3758.5 | *6.6%* | *1678.9* | *80.7%* |
| *4* | *JSC "Shardara HPP"* | *320.5* | *0.6%* | 307.3 | *0.5%* | *-13.2* | *-4.1%* |
| *5* | *JSC "Moinak HPP"* | *445.7* | *0.8%* | 388.6 | *0.7%* | *-57.1* | *-12.8%* |
| *6* | *Samruk-Green Energy LLP* | *2.0* | *0.004%* | 10.2 | *0.018%* | *8.20* | *410.0%* |
| *7* | *LLP "First wind power plant"* | *75.3* | *0.1%* | 72.7 | *0.1%* | *-2.6* | *-3.5%* |

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

# *Consumption of electrical energy by zones and regions*

According to the System Operator, in January-June 2021, there was an increase in the dynamics of electricity consumption in the republic compared to January-June 2020 by 6%. So, in the northern zone of the republic, consumption increased by 6%, in the southern zone by 10% and in the western zone by 2%.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **Jan - Jun**  **2020** | **Jan - Jun 2021** | **Δ,  million kWh** | **Δ, %** |
| **I** | **Kazakhstan** | **53 134** | **56,396.6** | **3262.6** | **6%** |
| 1 | Northern zone | 34,987.1 | 36,959.6 | 1972.5 | 6% |
| 2 | Western zone | 6936.5 | 7079 | 142.5 | 2% |
| 3 | Southern zone | 11,210.4 | 12 358 | 1,147.6 | 10% |
|  | ***incl . \_ by regions*** |  |  |  |  |
| 1 | East Kazakhstan | 4,719.3 | 4,715.9 | -3.4 | -0.1% |
| 2 | Karaganda | 9210.8 | 9,548.5 | 337.7 | 4% |
| 3 | Akmola | 4528.8 | 5,140.5 | 611.6 | 14% |
| 4 | North Kazakhstan | 825.0 | 883.9 | 59.0 | 7% |
| 5 | Kostanay | 2274.9 | 2419.6 | 144.7 | 6% |
| 6 | Pavlodar | 10,159.8 | 10,864.4 | 704.6 | 7% |
| 7 | Atyrau | 3,241.9 | 3,259.5 | 17.6 | 1% |
| 8 | Mangistau | 2561.8 | 2572.6 | 10.8 | 0.4% |
| 9 | Aktobe | 3268.7 | 3386.8 | 118.1 | 4% |
| 10 | West Kazakhstan | 1,132.7 | 1246.9 | 114.2 | 10% |
| 11 | Almaty | 5,511.9 | 6,083.7 | 571.8 | 10% |
| 12 | Turkestan | 2495.4 | 2,741.3 | 245.9 | 10% |
| 13 | Zhambyl | 2352.4 | 2550.7 | 198.3 | 8% |
| 14 | Kyzylorda | 850.6 | 982.3 | 131.7 | 15% |

# **The results of the industry in January-June 2021**

*(express information of the Bureau of National Statistics ASPR RK)*

January-June 2021 compared to January-June 2020, the industrial production index (hereinafter referred to as IPP) amounted to 101.5%. An increase in production volumes was recorded in 14 regions of the republic, a decrease was observed in Atyrau , West Kazakhstan and Mangystau regions.

**Changes in industrial output by region**

*in % to the corresponding period of the previous year*

In Almaty, due to an increase in the production of confectionery products from chocolate and sugar, ice cream , beer, prepared animal feed, paper products, building prefabricated metal structures, ready-mixed concrete, cars and trucks, buses, the IPP amounted to 119.8%.

In the Almaty region, the IPP amounted to 115.8% due to an increase in the production of tobacco products, the production of beverages, sugar, mortars, Portland cement and electric batteries.

In the city of Nur -Sultan, the IPP was 115.7%, mainly due to the growth in the production of soft drinks, ready-mixed concrete, refined gold, switchboards , prefabricated structures made of cement and concrete, production of railway cars and diesel locomotives.

In the Kostanay region, the IPP amounted to 109.8% due to an increase in the extraction of iron, gold and aluminum ores, iron ore concentrates and pellets, the production of flour, gold in doré, tractors, combines and cars.

In the North Kazakhstan region, due to the growth in the production of milk, flour, butter, confectionery, packaging bags and packages, plastic pipes, an increase in the production of freight cars, the IPP amounted to 108.5%.

In the Aktobe region, the IPP amounted to 108.2% due to an increase in the production of copper and zinc concentrates, an increase in the production of chromium salts and chromium oxide.

In the Akmola region, due to an increase in the extraction of gold ores, the production of pesticides, pipes and hoses made of rubber, natural uranium, the production of combines, tractors and trucks , the IPP amounted to 107.5%.

In the Zhambyl region, due to the growth in the production of phosphate raw materials, the production of sugar, phosphate fertilizers, ferrosilicomanganese and diesel fuel, the IPP amounted to 107.3%.

In the city of Shymkent, due to an increase in the production of soft drinks, sunflower oil, medicines, Portland cement, ready-mixed concrete, fuel oil, motor oil, transformers, electrical wires and cables, the IPP amounted to 107.2%.

In the East Kazakhstan region, the IPP amounted to 107.1% due to an increase in the extraction of copper and gold ores, gold concentrates, the production of finished animal feed, refined gold and silver, blister copper, trucks and tractors.

In the Pavlodar region, the IPP amounted to 105.5% due to the growth in the extraction of copper ores, the production of pesticides, gasoline, diesel fuel, fuel oil and the processing of secondary metal raw materials.

In the Turkestan region, due to the growth in the extraction of uranium and thorium ores, gold-bearing concentrates, the production of flour, sausages, ready-mixed concrete, electrical transformers, automatic switches, the IPP amounted to 101.5%.

In the Karaganda region, the growth of IPP amounted to 101.4% due to an increase in the production of gold concentrates, the production of medicines, unalloyed steel, pig iron , flat and galvanized rolled products.

In the Kyzylorda region, the IPP amounted to 100.5% due to an increase in the production of rice, sulfuric acid, Portland cement, building prefabricated structures made of concrete.

In West Kazakhstan IPP amounted to 93.6% due to a decrease in gas condensate production.

In Atyrau (89%) and Mangistau (94.1 %) regions, the IPP decreased mainly due to a reduction in crude oil production.

# *Electricity consumption by large consumers in Kazakhstan*

In January-June 2021, compared to the same period in 2020, electricity consumption by large consumers remained virtually unchanged (an increase of 0.39%).

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Consumer** | **January June** | | |
| **2020** | **2021** | **Δ, %** |
| 1 | JSC Arcelor Mittal Temirtau" | 1,851.7 | 1,868.3 | 1% |
| 2 | JSC AZF ( Aksuysky ) "TNK Kazchrome " | 2910.8 | 2699.7 | -7% |
| 3 | Kazakhmys LLP Smelting » | 601.1 | 576.8 | -4% |
| 4 | Kazzinc LLP \_ | 1424.4 | 1394.3 | -2% |
| 5 | JSC " Sokolovsko-Sarbayskoye GPO" | 848.5 | 818.9 | -3% |
| 6 | Kazakhmys Corporation LLP | 647.9 | 646.1 | 0% |
| 7 | AZF JSC (Aktobe) "TNK Kazchrome " | 1566.9 | 1554.3 | -1% |
| 8 | RSE “Channel them. Satpaev » | 88.9 | 125.8 | 41% |
| 9 | Kazphosphate LLP \_ | 1,069.2 | 963.3 | -10% |
| 10 | NDFZ JSC (part of Kazphosphate LLP ) | 929.9 | 810.1 | -13% |
| 11 | LLP " Taraz Metallurgical Plant" | 109.3 | 160.5 | 47% |
| 12 | JSC " Ust-Kamenogorsk titanium -magnesium plant" | 454.3 | 302.7 | -33% |
| 13 | Tengizchevroil LLP \_ | 930.7 | 940.0 | 1% |
| 14 | PAZ JSC (Pavlodar Aluminum Smelter) | 479.8 | 471.2 | -2% |
| 15 | JSC "KEZ" (Kazakhstan electrolysis plant) | 1,876.4 | 1,885.1 | 0% |
| 16 | TemirzholEnergo LLP \_ | 705.1 | 777.9 | 10% |
| 17 | JSC "KEGOC" | 2170.4 | 2618.9 | 21% |
| **Total** | | **17735.4** | **17804.0** | **0.39%** |

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Name** | **January-May** | | **Deviation, million kWh** | **Δ , %**  **2020** |
| **2020** | **2021** |
| **I** | **JSC " Samruk-Energy "** | **3574.96** | **3952.5** | **377.5** | **10.6%** |
| *1.* | *LLP "Bogatyr-Komir"* | 152.62 | 151.5 | **-1.1** | **-0.7%** |
| *2.* | *JSC Alatau Zharyk Companies »* | 447.46 | 478.8 | **31.4** | **7.0%** |
| *3.* | *AlmatyEnergoSbyt LLP* | 2974.89 | 3322.2 | **347.3** | **11.7%** |

# **Coal**

# *Thermal coal mining in Kazakhstan*

According to the Bureau of National Statistics, Kazakhstan produced 52,147.2 thousand tons of hard coal in January-June 2021, which is 1% less than in the same period in 2020 (52,661.2 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **January-June** | | **Δ, %** |
| **2020** | **2021** |
| 1 | Pavlodar | 33,606.1 | 32,284.8 | 96% |
| 2 | Karaganda | 15,938.3 | 15,943.5 | 100% |
| 3 | East Kazakhstan | 3,055.1 | 3669.8 | 120% |
|  | **Total for the Republic of Kazakhstan** | **44,951.9** | **44,447.8** | **99%** |

# *Coal mining by Samruk-Energy JSC*

In January-June 2021, Bogatyr Komir LLP produced 22,244 thousand tons, which is 0.7% more than in the corresponding period of 2020 (22,083 thousand tons).

# *Sale of coal by Samruk-Energy JSC*

In January-June 2021, 22,517 thousand tons were sold, including :

- to the domestic market of the Republic of Kazakhstan 18,230 thousand tons, which is 8.1% more than in the corresponding period of 2020 (16,870 thousand tons);

- for export (RF) - 4,287 thousand tons, which is 18.2% less than in the corresponding period of 2020 (5,239 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **Sales volume, thousand tons** | | **Δ, %**  **2021/2020** |
| **January-June 2020** | **January-June 2021** |
| **Total to the domestic market of the Republic of Kazakhstan** | | **16 870** | **18 230** | **108.1%** |
| **Total for export to Russia** | | **5 239** | **4 287** | **81.8%** | **1 144** | **46.8%** |

According to the indicators for January-June 2021, compared to the same period in 2020, the Company has an increase in coal sales by 1.8%.

# **Renewable energy sources**

According to the system operator, the volume of electricity production by renewable energy facilities (SPP, WPP, BGS, small HPPs) of the Republic of Kazakhstan for January-June 2021 amounted to 2005.5 million kWh . Compared to the period January-May 2020 (1470 million kWh ), the increase was 2.7%.

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **20 2 1g** | | **Deviation 20 2 0/2021,** | |
| **January June** | **share in Kazakhstan, %** | **January June** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **Total output in Kazakhstan** | **53502.5** | **100.0%** | **57325.4** | **100%** | **3822.9** | **1.1%** |
| **I** | **Total RES in the Republic of Kazakhstan, incl . by zones** | **1470.0** | **2.7%** | **2005.5** | **3.5%** | **535.5** | **1.4%** |
| 1. | *Northern zone* | *512.7* | *34.9%* | *750.8* | *37.4%* | *238.1* | *1.5%* |
| 2. | *Southern zone* | *753.6* | *51.3%* | *1092.5* | *54.5%* | *338.9* | *1.4%* |
| 3. | *Western zone* | *203.7* | *13.9%* | *162.2* | *0.0%* | *-41.5* | *0.8%* |
| **II** | **Total RES in the Republic of Kazakhstan, incl . by type** | **1470.0** | **2.7%** | **2005.2** | **3.5%** | **535.5** | **1.4%** |
| 1. | *SES* | *645.0* | *43.9%* | *831.3* | *41.5%* | *186.3* | *1.3%* |
| 2. | *WES* | *491.2* | *33.4%* | *816.8* | *40.7%* | *325.6* | *1.7%* |
| 3. | *Small HPPs* | *331.7* | *22.6%* | *353.9* | *17.6%* | *22.2* | *1.1%* |
| 4. | *BiogasInstallations* | *2.1* | *0.1%* | *3.2* | *0.2%* | *1.1* | *1.5%* |

January-June 2021 there is an increase in electricity production by small hydropower plants compared to the same period in 2020.

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Deviation 2020/2021,** | |
| **January June** | **share in Kazakhstan, %** | **January June** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | ***Electricity production in UES RK*** | **53502.5** | **100%** | **57325.4** | **100.0%** | **3822.9** | **1.1%** |
| 1. | Production of "clean" electricity (RES + Large HPPs) | *4498.2* | *8.4%* | *4590.8* | *8.0%* | *92.6* | *1.0%* |
| 2. | Production of "clean" electricity (RES excluding Large HPPs) | *1470.0* | *2.7%* | *2005.5* | *3.5%* | *535.5* | *1.4%* |

Samruk-Energo JSC (SPP, WPP, small HPPs) for January-June 2021 amounted to 156.9 million kWh or 7.8% of the total volume of electricity generated by RES facilities, which is 0.9 % lower compared to the same period in 2020 (in January-June 2020, the Company's RES generation amounted to 170.4 million kWh , RES of the Company 11.6%).

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Deviation 2020/2021,** | |
| **January June** | **share in Kazakhstan, %** | **January June** | **share in Kazakhstan, %** | **million kWh** | **%** |
| 1 | ProductionJSC " Samruk-Energo " "clean" electricity (RES + Large HPPs) | **1317.5** | **29.3%** | **1246.0** | **27.1%** | **-71.5** | **0.9%** |
| 2 | Production of JSC " Samruk-Energo " "clean" electricity (RES excluding Large HPPs), including : | **170.4** | **11.6%** | **156.9** | **7.8%** | **-13.5** | **0.9%** |
|  | *JSC AlES Cascade of small HPPs* | *82.7* | *5.6%* | *74.0* | *3.7%* | *-8.7* | *0.9%* |
|  | *Samruk-Green Energy LLP SPP 2 MW* | *2.0* | *0.1%* | *2.6* | *0.1%* | *0.6* | *1.3%* |
|  | *Samruk-Green Energy LLP WPP Shelek 5 MW* | *0.0* | *0.0%* | *7.6* | *0.0%* | *7.6* |  |
|  | *First Wind Power Plant LLP WPP 45 MW* | *85.7* | *5.8%* | *72.7* | *3.6%* | *-13.0* | *0.8%* |

# **Centralized electricity trading JSC "KOREM"**

*(information of KOREM JSC)*

*General trading results*

Based on the results of the centralized trading in electricity in June 2021, 60 transactions were concluded in the amount of 401,304 thousand kWh for a total amount of 3,432,744.96 thousand tenge (excluding VAT) (including spot trading in the "day ahead" mode and trades for the medium and long term), including:

* spot-trades in the "one day ahead" mode - 51 deals were made in the amount of 53,976 thousand kWh for a total amount of 462,086.4 thousand tenge. The minimum price at spot auctions in the “one day ahead” mode was 8.5 tenge / kWh (excluding VAT), the maximum price was 8.7 tenge / kWh (excluding VAT);
* spot trading “during the trading day” - no deals were made;
* trades in electricity for the medium and long term - 9 transactions were concluded in the amount of 347,328 thousand kWh for a total amount of 2,970,658.56 thousand tenge (excluding VAT). The minimum price for this type of centralized trading was 2.75 tenge / kWh (excluding VAT), the maximum - 10.14 tenge / kWh (excluding VAT).

For the same period in 2020, the total volume of centralized trading amounted to 115,824 thousand kWh. The table below shows the price dynamics of transactions concluded at centralized trading in June 2020-2021.

Dynamics of prices established as a result of centralized trading

in June 2020-2021

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **June** | **spot trading in the "day ahead" mode** | | **trades for medium- and long-term periods** | | **during business days** | |
| MIN price | MAX price | MIN price | MAX price | MIN price | MAX price |
| **tg /kWh ( excluding VAT)** | | | | | |
| **2020** | **7.2** | **7.3** | **1.1** | **7.95** | **-** | **-** |
| **2021** | **8.5** | **8.7** | **2.75** | **10.14** | **-** | **-** |

# 

# ***Results of spot trading in the "day ahead" mode***

Based on the results of the spot trading in June 2021, 51 transactions were concluded in the amount of 53,976 thousand kWh, the minimum clearing price for spot trading in the “one day ahead” mode was 8.5 tenge / kWh ( without VAT), and the maximum is 8.7 tenge / kWh (excluding VAT).

The table below shows the final day-ahead spot trading results for June 2021.



# The table shows that the total demand amounted to 93,552 thousand kWh, while the total supply amounted to 53,976 thousand kWh, with transactions in the amount of 53,976 thousand kWh.

# The unsatisfied volume of demand in June 2021 amounted to 42,960 thousand kWh, and the unsatisfied volume of supply was 0 thousand kWh. In the process of spot trading, 160 orders were accepted into the trading system, of which 136 were from buyers and 24 were from sellers.

# ***Results of spot trading "during the trading day"***

# According to the results of the auctions held in June 2021, no deals were concluded. According to the results of the auctions held in June 2020, no deals were also concluded.

# ***Trading results for the medium and long term***

# In June 2021, following the results of trading for the medium and long term, 9 transactions were concluded with a volume of 347,328 thousand kWh for a total amount of 2,970,658.56 thousand tenge (excluding VAT). The minimum price for this type of centralized trading was 2.75 tenge / kWh (excluding VAT), and the maximum price was 10.14 tenge / kWh (excluding VAT).

# For the same period in 2020, for trading in electricity for the medium and long periods, 2 transactions were concluded in the amount of 60,240 thousand kWh for a total amount of 444,384 thousand tenge (excluding VAT). The minimum price for this type of centralized trading was 1.1 tenge / kWh (excluding VAT), and the maximum price was 7.95 tenge / kWh (excluding VAT).

# **Export-import of electrical energy**

In order to balance the production and consumption of electricity in January-June 2021, exports to the Russian Federation amounted to 612.6 million kWh , imports from the Russian Federation - 668.5 million kWh .

Including export of JSC " KEGOC " - 577.4 million kWh , import of electricity from the Russian Federation for the reporting period in the amount of 526.7 million kWh .

million kWh

| **Name** | **2020** | **2021** | **Δ 2021/2020** | |
| --- | --- | --- | --- | --- |
| **January June** | | **million kWh** | **%** |
| **Export of Kazakhstan** | **-949.6** | **-1,670.4** | **-720.8** | **75.9%** |
| **in Russia** | **-489.8** | **-612.6** | **-122.8** | **25.1%** |
| **in the IPS of Central Asia** | **-459.8** | **-1,057.8** | *-598.0* | 130.1% |
| **Import of Kazakhstan** | **581.0** | **741.5** | **160.5** | **27.6%** |
| **From Russia** | **544.7** | **668.5** | **123.7** | **22.7%** |
| **from IPS Central Asia** | **36.3** | **73.0** | **36.7** | **101.4%** |
| **Balance- flow "+" deficit, "-" excess** | **-368.6** | **-928.9** | **-560.3** | **152.0%** |

# **SECTION II**

# **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.

May 29, 2019 as part of the celebration of the fifth anniversary of the signing of the Treaty on the Eurasian Economic Union 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).

On December 20, 2019, the Supreme Council adopted Decision No. 31 “On the plan of measures aimed at the formation of a common electricity market of the Eurasian Economic Union”, which establishes, among other things, the deadlines for the approval and entry into force of the rules for the functioning of the Union’s common electricity market, as well as other acts provided for by the specified protocol.

At present, the EAEU Member States are working on the development and harmonization of the rules for the functioning of the EAEU CER.

In 2021, one meeting of the Advisory Committee on the Electricity Industry under the EEC Board (hereinafter referred to as the Advisory Committee) was held   
(14th meeting, January 21, 2021) and one meeting of the Subcommittee on the formation of the EAEU ERA of the Advisory Committee on the Electricity Industry under the EEC Board (hereinafter referred to as the Subcommittee) (56th meeting 14 January , 57th meeting 5 February, 58th meeting 25-26 February, 59th meeting 11-12 March, 60th meeting 26 March, 61st meeting 9 April, 63rd 13 May meeting, 64th meeting 7 June, 65th meeting 24-25 June).

Work on the formation of a common electricity market of the Eurasian Economic Union continues.

# **Status of formation of the Electricity market of the CIS**

Since 1992, 55 meetings of the Electric Power Council of the Commonwealth of Independent States (hereinafter - CIS EEC) have been held.

By decision of the EEC of the CIS (Minutes No. 50 dated October 21, 2016), the Consolidated Schedule for the Formation of a Common Electricity Market of the CIS Member States was approved.

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Events** | **Period of execution** | **Current status** |
| 1 | Implementation of activities in accordance with Section II . Action Plan for Cooperation between the EEC and the EEC of the CIS, approved on June 10, 2016. | 2016-2020 | Permanent participation of the EEC representatives at the meetings of the EEC of the CIS, representatives of the EC of the EEC of the CIS - at the meetings on the formation of the EER of the EAEU is ensured. |
| 2 | Preparation of a draft procedure for the settlement of deviations from the agreed values of interstate power flows . | 2016-2017 | The decision to develop a procedure for settling deviations from the agreed values of interstate power flows was taken at the 45th meeting of the EEC of the CIS. The draft Procedure was considered at the 29th meeting of the Working Group "Formation of a common electric power market of the CIS countries" on September 15, 2016 in Moscow (RF). In accordance with the Decision of the 47th meeting of the EEC of the CIS, the Action Plan of the EEC of the CIS for 2016 includes the development and approval of draft documents on determining the magnitude of deviations from the agreed values of interstate electricity flows and the settlement of deviations from the agreed values of interstate electricity flows . Work continues. |
| 3 | Preparation of a draft procedure for the distribution of throughput capacity of interstate sections / export-import sections between participants in export-import activities. | 2018-2020 | By the decision of the 50th meeting of the EEC of the CIS, Methodological recommendations for the metrological support of measuring complexes for metering electric energy at interstate  power lines.  By the decision of the 50th meeting of the EEC of the CIS, the Schedule for monitoring the application of regulatory technical documents in the field of metrology of electrical measurements and electricity metering in the production activities of the energy systems of the CIS member states was approved. |
| 4 | Preparation of a draft procedure for compensation of costs associated with the implementation of the transit / transmission / movement of electricity through the energy systems of the CIS member states. | 2018-2020 | The unified format of the data exchange layout for accounting of interstate electricity flows , developed by the Working Group on metrological support of the electric power industry of the Commonwealth of Independent States, was approved by the decision of the 33rd meeting of the CIS EEC and recommended to the electric power industry management bodies of the CIS member states for use in organizing the accounting of interstate electricity flows and data exchange on interstate flows . |
| 5 | Harmonization of national legislation in the field of electric power industry, development and adoption of national regulatory legal documents necessary for the formation and functioning of the CIS EER. | 2020-2025 | The decision of the 51st meeting of the EEC of the CIS approved the Conceptual approaches to technical regulation and standardization in the field of electric power industry. The Regulations on the Working Group “Updating and Harmonizing the Regulatory and Technical Base for Regulating the Electricity Industry” were also approved. By the decision of the 51st meeting of the CIS EEC, the Work Plan of this Working Group was approved. |

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

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

**REPUBLIC OF ARMENIA.**

Prospects for the development of geothermal energy in Armenia will be considered on June 3 at a conference on the results of the research project "Assessment of Geothermal Energy Resources and Natural Hazards in Armenia", prepared by a joint Armenian-American research group. The project is funded by PEER Science of the US National Academy of Sciences.

It should be noted that research on the development of alternative energy sources, including geothermal energy, began in Armenia in the second half of the 2000s. They were carried out by the Spanish company " Arries " and based on the results of these works, it was decided to create a geothermal station " Karkar " with a capacity of up to 40 MW in the southeast of the country. In April 2017, work began on the development of a feasibility study (feasibility study) for the station construction project based on studies that confirmed the resources of this source. Two wells were drilled to a depth of 1500 meters each, which confirmed the availability of the necessary volumes of hot water with a temperature of 122.5 degrees above zero for the construction of the station. Testing was carried out in the best laboratories in the world. It was originally planned that the program would be put up for international tender before the end of 2018. However, no investors were found, although some interest was shown by the Czech company SUMEG GEOPOWER AG. According to the program, the construction of this energy facility will allow Armenia to receive an additional 200-250 million kWh of electricity. Moreover, the station will become a base station, that is, it will generate electricity around the clock. Preliminarily, the volume of investments in the project is about $50 million. A road was laid to the Karkar area , which was supposed to serve as the construction and operation of a geothermal power plant.

In addition to Karkar , there are other promising sources in Armenia, for example, Jermahbyur , Lidzor , sources on the border with Georgia and in Sisian.

**The program "Caucasian Power Transmission Network" will work at best after 2025.** The program envisaging the construction of a power line and a substation Armenia-Georgia to organize parallel synchronous operation of the energy systems of the two countries will start working after 2025 at best. Difficulties with the organization of parallel operation are associated with the delay in the construction of infrastructure, including the converter station.

However, there are no difficulties in ensuring the island mode of electricity flow . Today, Armenia buys electricity from Georgia in the import regime not due to a shortage, but because of its cheapness, thanks to which, for the first time in recent years, it was possible to ensure “tariff savings” in the amount of 2.6 billion drams in the period from February to early June .

Within the framework of the program "Caucasian Power Transmission Network", work is planned to build a substation " Ddmashen " 400/220/10 kV , an overhead power line 400/500 kV , a converter station " Ayrum ", with the possibility of synchronizing the work of regional power systems.

**The Armenian and Russian sides will discuss the issue of extending the service life of the Armenian NPP until 2031.** The Armenian and Russian sides will soon start discussing the issue of extending the service life of the Armenian NPP until 2031.

The Deputy Minister informed that the concept for extending the service life of the ANPP is already ready and involves increasing the service life of the nuclear power plant after its modernization by 10 years.

A key scheduled preventive maintenance (PPR-2021) has started at the Armenian NPP as part of a project to modernize and extend the life of the plant. The nuclear power plant was shut down for 141 days. This is the longest shutdown since the beginning of the modernization project.

**The Emirates company " Masdar " will build a solar power plant with a capacity of 200 MW in Armenia.** Masdar , a company from the UAE, will build a solar power plant with a capacity of 200 MW in Armenia. The cost of the project will be 175 million US dollars.

The cost of one kilowatt-hour of energy will be $2.90. The beneficiary of 85% of the shares of the program will be the Masdar company , and 15% of the shares will belong to the Armenian State Interests Fund ANIF. Construction will be carried out in 2 years.

**The Aig - 1 solar station with an installed capacity of 200 MW will be put into operation in 2025.** At a meeting of the Cabinet of Ministers , the Government of Armenia approved the results of the pre-qualification competition within the framework of the project for the construction of the AYG-1 photovoltaic industrial station and made changes to the terms of financing the project.

Within the framework of the project, it is planned to build the Aig - 1 solar station with an installed capacity of 200 MW. The station will be located on the territory of Talin and Dashtadem communities Aragatsotn region of Armenia. Competition Winner - Abu Dhabi Future Energy Company PJSC - Masdar , according to him, offered a fairly low tariff from the future solar generation facility - $ 0.0290 electricity excluding VAT per 1 kW / h of electricity. " Masdar " company will become the beneficiary of 85% of the shares of the program , and 15% of the shares will belong to the Armenian State Interests Fund ANIF. The cost of the project will be approximately $174 million, the station will be put into operation in 2025.

# Electricity generation in Armenia in January-May increased by 2% year-on-year. The volume of electricity production, according to operational statistics, for January-May 2021 increased by 2% compared to the same period last year, the National Statistical Committee of the Republic reports.

As noted in the report, the volume of electricity production in January-May 2021 amounted to 3,310.3 million kWh .

At the same time, this indicator in May 2021 decreased by 3.1% compared to May 2020, and decreased by 12.9% compared to April 2021.

# Ardshinbank attracted $20 million in loans from the Global Climate Partnership Fund (GCPF) for the development of green energy. The raised funds will be used to increase lending investments in energy efficiency and renewable energy projects , mainly to finance solar panels.

**REPUBLIC OF BELARUS**

**Novogrudok wind power plant is 5 years old.** The Novogrudok wind power plant (WPP) is serviced by the Lida Electric Networks branch of RUE Grodnoenergo . The first wind turbine was built in 2011. Then RUE " Grodnoenergo " built and put into operation five new wind turbines with a total capacity of 7.5 MW on the Novogrudok Upland . In June 2016, the state commission signed the act of commissioning the Novogrudok wind farms . This date can be officially considered a continuation of the implementation of a large-scale project for the development of renewable energy sources in the Grodno energy system. Taking into account the windmill built earlier, the total capacity of the generating equipment reached 9 MW. Novogrudok wind power plant became the first industrial wind power plant in Belarus.

**A program for the comprehensive modernization of energy production facilities has been approved.** In order to ensure systematic planning of the medium-term development of the electric power industry and the implementation of the Energy Security Concept of the Republic of Belarus, the program of activities of the Government of the Republic of Belarus for the period up to 2025, the Program for the Comprehensive Modernization of Energy Sector Production for 2021– 2025

The goal of the program is to implement in 2021–2025. measures for the comprehensive modernization of power plants and boiler houses, electric and heat networks of organizations that are part of the State Production Association " Belenergo ".

**Reconstruction of Minsk CHPP-3 continues.** As part of the implementation of the Program for the Comprehensive Modernization of Energy Sector Production for 2021–2025. in the branch "Minskaya CHPP-3" RUE " Minskenergo " continues the implementation of the project for the reconstruction of the Minsk CHPP-3 with the replacement of retired capacities of the 14 MPa queue.

**Preparations for the upcoming heating season have begun at Minsk CHPP-4.** Active preparations for the autumn-winter period 2021/2022. started a branch "Minsk CHPP-4" RUE " Minskenergo ". Currently, the boiler and turbine shop No. 2 is undergoing a major overhaul of the power unit st. No. 5. The total duration of the work will be 68 days. During this time, it is planned to overhaul the boiler unit , turbine unit and auxiliary equipment. Testing and recording of operational characteristics of control systems on the stopped turbine of power unit st. No. 6 before repair, the density and equipment of the turbine control system are checked. Also, current repairs of the boiler BKZ-420-140 NGM st. No. 7 and turbines T-110/120-130 st. No. 3. The main task of the overhaul is to ensure the good condition of the equipment, its reliable and economical operation.

**At the final stage, the first stage of construction of peak reserve energy sources at CHPP-5. As part of the implementation of the project for the integration of the Belarusian NPP into the country's energy system, the construction of peak-reserve** energy sources (PREI) is being carried out at four facilities . In particular, work is underway at Minsk CHPP-5 in two phases: installation of a 330/110/35 kV communication autotransformer with a capacity of 200 MVA and construction of a 300 MW PREI. “The first phase is in its final stages. It remains for us to mount the technological overpass, 110 and 330 kV outdoor switchgear , as well as lay control cables. These works are expected to be completed by September. As for the second stage, the foundations for gas turbine units and auxiliary equipment are being prepared at the moment, and the first of these units, Siemens SGT-800, should arrive here in the middle of the month, and there will be six of them with a capacity of 50 MW each. Completion of construction and installation works is scheduled for March 2022,” said the head of the capital construction department of the CHPP-5 branch of RUE Minskenergo

**THE REPUBLIC OF KAZAKHSTAN.**

**The construction of the third power unit at Ekibastuz GRES-2 is being resumed. The date of completion of the facility has been announced - December 2025.** It is planned to start construction in April 2023, according to inbusiness.kz, citing non-technical summaries of the developers.

At present, the installed electric capacity of the plant of JSC Station Ekibastuzskaya GRES-2 is 1000 MW in two-block mode.

After Samruk-Kazyna completed the deal to purchase 50% of Ekibastuz GRES-2 from Inter RAO for % 25 million in December 2019, the station completely came under the control of Kazakhstan and was transferred to the management of Samruk-Energo , which already owned the other 50% Ekibastuz GRES-2.

The construction of the station began in 1979 with the originally planned 8 power units with a capacity of 500 MW each. In 1993, after the commissioning of the second power unit, further development of the station was suspended. In 2011, work began on the construction of the third power unit, which was curtailed five years later due to economic inexpediency against the backdrop of the already observed excess capacity in the region. The situation has changed and in order to cover the growing energy demand , Kazakhstan has returned to the implementation of the project. Now on your own . The project capacity of the unit will be 636 MW.

By the way, the need for construction was mentioned during a recent visit to the region by Prime Minister Askar Mamin.

At the construction of the third power unit, due to the decision to use technological equipment manufactured in China, there were non-standard conditions that required a significant reconstruction of the main building. This, in turn, led to the emergence of significant amounts of dismantling work and the simultaneous installation of the structures of the main building and process equipment.

**What hinders the growth of the renewable energy market in Kazakhstan.** PwC Kazakhstan has published a study of the renewable energy market: ["Renewable Energy Market in Kazakhstan: Potential, Challenges and Prospects"](https://www.pwc.kz/ru/publications/publications-new/esg.html) . The study involved renewable energy producers, representatives of international development banks, the regulator, researchers, analysts and consultants involved in the direct creation of renewable energy facilities in Kazakhstan.

Kazakhstan has committed to expanding the share of renewable energy sources (RES) and alternative energy sources. Since the beginning of 2011, the number of renewable energy facilities in Kazakhstan has increased from 23 to 111. The main drivers of growth: legislation, the guarantee of the "green" tariff and the purchase of electricity and the new strategy (according to the "Concept for the transition of the Republic of Kazakhstan to a green economy"):

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

- 10% share of RES in total electricity generation by 2030;

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

The prerequisites for the development of renewable energy in Kazakhstan are high (as 91% of respondents believe), but the natural potential differs from region to region. For example, in the south of the country (where there has always been a high demand for electricity), solar stations are being intensively developed, which are relatively easy to build and commission.

Investments in alternative energy have led to an increase in RES to a 3% share in the structure of electricity generation in Kazakhstan. At the moment, the main investors investing in RES projects (in terms of capacity) are development banks and foreign companies.

According to the study, the growth of renewable energy in Kazakhstan is constrained by: the legislative framework, which does not correspond to the current stage of development of renewable energy, investment risks (including currency risk), limited balancing capacities, non-competitive tariffs, underdeveloped measures to stimulate microgeneration, as well as problems arising from the integration of renewable energy into the energy system of the country.

The competitiveness of RES with traditional energy in the absence of effective and affordable energy storage solutions caused a discussion among the respondents. According to the study participants, RES can already compete with traditional sources in a number of countries, but traditional energy sources are necessary to maintain the reliability of the energy system.

The current high tariffs for renewable energy compared to conventional electricity tariffs make them uncompetitive without government support. However, according to respondents, the real tariff for traditional energy, which ensures the long-term functioning of the energy system, should be higher. Under the condition of the functioning of market tariffs, the transition of renewable energy sources to a competitive environment is quite probable. All participants in the study agreed on the correctness of measures to increase electricity tariffs, regardless of the source.

The authors of the study also note that alternative energy is becoming more relevant every day, which affects the development of renewable energy sources. The global compound average annual growth rate of installed RES capacity from 2011 to 2020 was 8%, while the share of RES in the installed capacity of the global energy industry has grown from 25% to 37% over the past 10 years.

The regulation of the traditional fuel and energy complex is being tightened, especially in terms of carbon dioxide (CO2) emissions. Investors in an effort to "green" their portfolios are increasingly paying attention to the non-financial performance of enterprises, supporting the trend towards sustainable development. The renewable energy sector is an alternative to traditional energy sources, especially against the backdrop of constant technological progress, due to which there is a rapid decrease in the cost of building such power plants. However, to comply with the Paris Agreement, the pace of transition to alternative energy sources must be much higher. According to IRENA (International Renewable Energy Agency) forecasts, the installed capacity of renewable energy facilities must increase 10 times in order to achieve the goals of the Paris Agreement by 2050, which Kazakhstan ratified in 2016 and committed to reduce greenhouse gas emissions by 15% by 2030 by mobilizing innovative solutions with the participation of the private sector.

**Tariffs for electricity and thermal power will continue to grow, even if the share of renewable energy sources is not increased.** This is due to the commissioning of new capacities, the development and construction of additional infrastructure, modernization and other factors. The current tariff only covers operating costs.

The cost of green energy has plummeted. If we compare the construction of a solar power plant and a coal plant in 2021, then the SPP will be cheaper.

In order to achieve 15% RES in the total electricity industry,annually it is necessary to introduce 300-350 MW of green capacities. On average, it will take $300 million a year. At the same time, the amount of investment depends on the technology.

However, it is not enough to build green power plants. In order for them to function in the common energy system, it is necessary to solve the current problems of the industry, such as reducing the depreciation of power grids, creating infrastructure, and creating flexible capacities.

**In the Republic of Kazakhstan, an investment project is being implemented to expand the Aktobe CHPP. Here, a cogeneration power unit based on a gas turbine with a waste heat steam boiler is being created, which is integrated into the existing technological scheme of the facility. The launch of the gas turbine unit (GTU) is scheduled for 2022.**

The modernization project will significantly improve the technical, economic and environmental performance of the power plant:

- one and a half times (up to 175 MW) electric power will increase; - efficiency factor will increase;

- the specific consumption of standard fuel for energy production will decrease;

- Emissions of nitrogen oxides and carbon monoxide into the atmosphere will be reduced.

In general, the launch of the gas turbine plant will minimize the negative impact on the environment, increase the volume and reliability of energy production, optimize the electricity and heat supply of the city of Aktobe , and reduce the shortage of electricity in the energy system of the Aktobe region.

The basis of the gas turbine is a gas turbine Siemens SGT-800 with a capacity of 50 MW, which provides basic generation. The SGT-800 industrial turbine combines robust design with high efficiency, low emissions and high exhaust energy for efficient use in combined cycles.

From the turbine, exhaust hot gases (products of fuel combustion) enter the waste heat boiler manufactured by Podolsk Machine-Building Plant JSC. KU will produce steam with a pressure of 3.0 MPa and a temperature of 420°C in the amount of 70 tons per hour.

The medium-pressure superheated water vapor received in the CHP is sent to the existing steam turbines of the Aktobe CHPP for secondary generation of electricity (combined-cycle cycle).

Thus, the scheme using combined cycle technology will provide combined power generation, high return on the use of gaseous fuel and the overall efficiency of the power plant. The design capacity of the gas turbine is 57 MW.

Fuel supply to the new power unit will be carried out by the ENERGAS complex system consisting of [a block gas treatment facility](http://energas.ru/products/punkti-podgotovki-gaza/) (BPPG) and a booster compressor station (BCS) of two units. BPPG is designed for filtration, reduction and technological accounting of gas before it is supplied to the BCS. [Booster units](http://energas.ru/products/compressornoe-oborudovanie/) guarantee the required fuel parameters for the turbine - in terms of pressure (3.1 MPa), temperature (+60°C) and flow rate (12,000 kg/h).

Aktobe combined heat and power plant is the only source of district heating for Aktobe , the largest city in Western Kazakhstan. In 2020, Aktobe CHPP generated 927.9 million kWh of electricity , which is more than 12% of the region's consumption. Electrical and thermal power - 118 MW and 878 Gcal / h, respectively.

At the moment there are six steam turbines and nine boiler units . The need for reconstruction and modernization of the station, built in the 40s of the last century, is due to the fact that part of the main and auxiliary equipment has completely exhausted its resource.

**The deputies of the Majilis of the Parliament considered two bills on ratification of the protocols on amending the Treaty on the Eurasian Economic Union dated May 29, 2014 in connection with the accession of the Republic of Armenia and the Kyrgyz Republic to it. The protocols determine the methodology for the implementation of interstate transmission of electrical energy (capacity) between the Member States.**

The ratification of the protocols will ensure the possibility of efficient operation of the energy systems of the Member States of the Union, taking into account the accession of Armenia and Kyrgyzstan.

The subject of regulation of the international agreement is the implementation of interstate transmission of electrical energy (capacity) between the member states of the EAEU, taking into account the accession of Armenia and Kyrgyzstan to the Protocol on ensuring access to the services of natural monopoly entities in the electric power industry, including the basics of pricing and tariff policy.

To date, the protocols have been ratified by Armenia, Belarus, Kyrgyzstan and Russia.

Majilis deputies approved the bills.

**The Eurasian Development Bank (EDB) takes part in the implementation of renewable energy projects (RES) in** [**the Republic of Kazakhstan**](https://www.eprussia.ru/news/base/2021/2211480.htm?sphrase_id=5493388) **. Currently, in total, the EDB's portfolio in Kazakhstan includes several projects totaling $121 million, according to the website of the Russian Wind Industry Association (RAWI).**

One of the supported initiatives is the first bond program of Samruk-Energy JSC for 100 billion tenge ($234.7 million). In November 2018, the EDB purchased bonds of the third issue for 21.73 billion tenge ($65.09 million) with maturity until 2025. The funds were partially directed to the modernization of Shardarinskaya HPP JSC.

Second project – Ereymentau LLP Wind Power - construction of a wind farm (WPP) with a capacity of 50 MW near the city of Yereymentau . The cost of the project is 30 billion tenge ($70.4 million). The amount of the EDB loan is 23.2 billion tenge ($54.4 million). At present, the project is at the stage of construction and development of the EDB loan.

Another is a 100 MW solar power plant (SPP) in the Akmola region, worth 80 million euros and a loan of 65 million euros.

In addition, the EDB takes part in seven solar power plants with a total capacity of 149 MW in the southern regions of Kazakhstan ( Almaty region, South Kazakhstan region, Shymkent, Kyzylorda region). The cost of the project is estimated at 118 million euros, while the loan amount is 95 million euros.

**Ministry of Energy considers electricity tariffs insufficient to repair networks**

**The average depreciation of regional electric networks in Kazakhstan in 2021 increased to 63%.** In 2020, this figure [was 60%](https://lsm.kz/v-kazahstane-pridumali-sposob-spasti-svet) . Depreciation of power plants has reached 53%.

The Ministry of Energy noted that most of the country's energy transmission organizations are privately owned. For them, the problem of depreciation can be solved only within the framework of the investment programs of the subjects, which, together with the marginal tariffs, are approved for a five-year period by the Committee for the Regulation of Natural Monopolies.

The ministry also reported that the current tariffs do not allow for a large-scale reconstruction and modernization of electricity networks. This requires more significant investments.

"Works on the modernization of networks are carried out annually and systematically, but due to the limited funds of energy transmission organizations, it is not possible to modernize electrical networks in a short time. The volume of updates to electrical networks directly depends on the size of the approved tariff," the Ministry of Energy specified.

At the same time, the country has approved a methodology for calculating the level of wear and tear of the main power grid equipment of power transmission organizations.

At the same time, in 2021, 32.9 billion tenge is provided for the development of thermal power in the budget of Kazakhstan. In 2022 - another 5.3 billion tenge, in 2023 - 4.4 billion tenge.

**By 2030, the share of "green" energy in the energy sector of Kazakhstan will be increased to 15 percent. Prime Minister of Kazakhstan Askar Mamin said this during a meeting of the Council for Improving the Investment Climate (CIIC).** “In December 2020, at the Summit on Climate Ambition organized by the UN, President of the Republic of Kazakhstan Kassym-Jomart Tokayev announced the goal of achieving carbon neutrality by Kazakhstan by 2060. We are making consistent efforts to increase the share of renewable energy sources in total energy production. So, as of 2020, this figure was 3 percent, in 2022 it is planned to double it and bring it to 6 percent ,” Mamin said.

The head of government noted that in 2020 an updated Action Plan for the implementation of the "Concept for the transition of the Republic of Kazakhstan to a green economy" for 2021-2030 was adopted. The plan was developed in close cooperation with partners from the EU, it provides for measures to level the most serious environmental challenges facing the country.

The implementation of the planned activities will ensure compliance with Kazakhstan's long-term commitments to "green" growth" while achieving the goal of entering the list of the 30 most developed economies in the world. The Prime Minister stressed that Kazakhstan has taken measures to improve the investment environment for the development of alternative energy.

“We have taken a number of comprehensive measures to support producers of renewable energy sources and improve the investment attractiveness of the market. So, for example, in order to make the demand structure more predictable and significant for producers, renewable energy auctions have been introduced. As a result, over the past 6 years, the installed RES capacity has increased by almost 10 times - from 180 MW in 2014 to 1650 MW in 2020,” A. Mamin said.

In order to implement the objectives of sustainable development in Kazakhstan, a new Environmental Code has been adopted, which will contribute to the accelerated introduction of advanced renewable energy technologies in the country. The 50 largest enterprises in Kazakhstan will be required to expand the use of the best available technologies in their production process.

**In Kazakhstan, electricity tariffs will be reduced from July 1. Order acting . Minister of Energy of the Republic of Kazakhstan dated June 24, 2021, amended the order dated December 14, 2018 “On approval of marginal tariffs for electrical energy”, zakon.kz reports.**

In particular, marginal electricity tariffs for all groups are reduced from 2021 to 2025 inclusive.

Thus, for the first group the tariff will be 5.90 tenge (7.25 tenge in the old version ), for the second - 5.59 tenge (in the old version - 6.94 tenge), for the third group - 8.59 tenge (9. 69 tenge), for the fourth - 7.91 tenge (9.21 tenge), for the fifth - 10.45 tenge (11.41 tenge), for the sixth - 8.78 tenge (9.92 tenge).   
Consumer group I includes household consumers (population) receiving services for the retail sale of commercial gas from the gas distribution system.

II group of consumers - thermal power companies that purchase commercial gas in order to generate thermal energy for the population;

Group III of consumers - thermal power companies that purchase commercial gas in order to generate thermal energy for legal entities;

Group IV of consumers - heat and power companies that purchase commercial gas for the production of electricity;

V consumer group - other consumers not included in I, II, III, IV, VI, VII and VIII consumer groups;

Group VI of consumers - budgetary organizations maintained at the expense of budgetary funds.

**REPUBLIC OF KYRGYZSTAN.**

**The energy sector annually loses 5-6% of income due to inflation, - Deputy Minister of Energy N. Kozhogulov .** The total generation volume is 15 billion 350 million kW / h, but the amount of debt obligations is more than 129 billion soms, he added.   
N. Kozhogulov explained that the peak in payments and loans is in 2025, and the depreciation of assets is 70%.

To date, the cost of electricity is the lowest. Income barely covers costs. About 7 years have passed since the change of tariffs. Inflation rates are also rising every year.

Prices change for everything: services, cost of equipment, project materials, fuel, and so on. It should also not be forgotten that more than 16,000 employees work in the energy sector.

**The Ministry of Energy proposed to increase the tariff for electricity, but it will be the same for everyone.** The Ministry of Energy has developed new tariffs for electricity. In the near future they will be submitted for public discussion. There will be a single tariff for the population, without any division into social groups or residents of the highlands. The limit of 1000 kWh will be the same for the entire population. A different rate will be for all other categories.

A tariff of 1 som 9 tyiyn for the population is proposed, that is, it is proposed to increase the tariff by 32 tyiyn . For residents of high mountainous areas there will be no restrictions on electricity consumption either in winter or in summer. For the general population, it is proposed to leave a threshold of 1000 kWh in winter due to low water. For other types of activities, we propose to increase the tariff to 5 soms 4 tyiyns .

Now in Kyrgyzstan [there is](https://elgezit.kg/2020/11/20/tarify-na-elektroenergiyu-ne-budut-menyatsya/) a tariff of 77 tyiyn per 1 kWh , but it is valid only if users do not exceed the limit (this is 700 kWh for ordinary users and 1000 kWh for high-mountainous regions). Above the limit, they pay 2.16 soms for each extra kWh. Legal entities pay 2.24 soms for 1 kWh, pumping stations pay 77.9 soms, orphanages 1.58 soms.

For mining farms, their own tariff was [set](https://kloop.kg/blog/2020/10/17/gns-vvela-spetsialnyj-nalogovyj-rezhim-na-majning/) at 2.91 soms per 1 kWh. It was installed in October 2020. However, now due to the energy crisis miners have actually become illegal - they [are caught by](http://kabar.kg/news/v-bishkeke-i-chuiskoi-oblasti-vyiavili-nezakonnye-maining-fermy/) the State Committee for National Security as part of the work "to dismantle corruption in the energy sector, and also taking into account the significant shortage of electricity in the republic."

**The Ministry of Energy will merge Severelectro , Oshelectro , Vostokelectro and Jalalabatelectro into one company.** The Ministry of Energy will merge Severelectro , Oshelectro , Vostokelectro and Jalalabatelectro into one company.

There are currently 4 distribution companies in Kyrgyzstan, but only Severelectro is the flagship . Their unification is a matter of time. The first steps have already been taken. The National Energy Holding is engaged in the merger process.

**the Kambar-Ata HPP-2 was signed for 90 million soms .** There is also additional work for 20 million soms. By government decree, the general contractor for the project is Narynhydroenergostroy . A spillway is needed for the safety of the dam.

At the moment, water passes through 1 unit and a spillway. When the second and third units are built, all water will pass only through the turbines.

The design capacity is 360 MW, now there is a 120 MW unit. Of these, it operates at 90 MW, because power output is limited. Under the EDB project, it is planned to put into operation the second unit and the 500 kV outdoor switchgear. Then there will be no locked power. Everything that will be produced will be distributed to the general network.

**The General Director of Electric Stations commented on the construction of the Kambar-Ata HPP-1.** The reservoir capacity of the Kambar-Ata HPP-1 will be 5.4 billion cubic meters. Kambar-Ata HPP-1 will be the counter-regulator Toktogul HPP. This is an important property. Property of long-term regulation and accumulation of water. Together with the Toktogul HPP, it will allow regulating the entire flow of the Naryn River.

The estimated cost of the project according to the feasibility study is $2.9 billion, and the construction period is 12 years.

Former Minister of Energy Doskul Bekmurzaev said that the construction of the Kambar-Ata HPP-1 [may be financed from Kumtor's funds](https://news.myseldon.com/away?to=http%3a%2f%2fwww.tazabek.kg%2fnews%3a1710383) .

Reference:

According to the State Committee for Industry, Energy and Subsoil Use, the cost of the Kambarata HPP-1 construction project is $2 billion 916.4 million.

For this amount, according to the construction project, it was planned that the installed capacity of the hydroelectric power station would be 1900 MW, the annual generation of electrical energy - 5.1 billion kWh . The reservoir with a volume of 4.65 billion cubic meters will carry out seasonal regulation of the flow of the Naryn River in the interests of the energy sector, compensating for the decrease in the winter energy efficiency of HPPs operating under the irrigation regime.

The estimated project implementation period is 2018-2025.

**Today, not only for export, we cannot find electricity for ourselves, - deputy on the CASA-1000 electricity supply project**

“From May to autumn, our electricity simply goes into the water, and in the summer we will not be able to export electricity,” said today, June 21, the deputy of the Zhogorku Kenesh Umbetali Kydyraliev , speaking about the CASA-1000 project at a meeting of the Jogorku Kenesh Committee on Budget and Finance.

If Kyrgyzstan does not have time to implement the project by 2024, then large penalties for non-fulfillment of obligations are envisaged, the deputy explained.

“Today, not only exports, we cannot find electric power for ourselves . What do you think will happen at the end? As a result, we cannot fulfill our obligations,” U.Kydyraliev asked .

Deputy Minister of Energy and Industry Taalaibek Ibraev agreed with him, saying that the question is being raised about how the Kyrgyz Republic will come out of this year, there are intentions to import electricity.

At the same time, the deputy minister said that a memorandum had been signed with German investors on a 125 megawatt solar substation in Tokmok , the land issue had been resolved, a technopark would be built there, which would take half the power of this substation, and the remaining 50% would be purchased by Kyrgyzstan, T. Ibraev said .

Secondly, the land issue on solar batteries on 62 hectares with a total capacity of 300 megawatts in the Issyk-Kul region, in the village of Toru- Aigyr , was resolved, a memorandum was signed with Bishkek Solars , he said.

“Third, KHMZ in Orlovka, you yourself know, silicon is grown there together with the Russians. They also plan to build a solar substation for 200 megawatts,” T. Ibraev said .

Today, problems with renewable energy sources and small hydropower plants are not being solved, because everything depends on land acquisition, he explained.

On this issue, meetings were held with the RES Association, the Deputy Minister explained.

Also on the Kambar-Ata HPP-1, the head of the Cabinet of Ministers was offered to make the project national, he said. The second power generation project is the Kambar-Ata HPP-2.

“If we do not move along with CASA-1000, then we will not be able to fulfill our obligations on the export of electricity,” the deputy minister added.

Reference: The CASA-1000 Electricity Transmission Project in Central Asia and South Asia provides for the export of seasonal surplus hydroelectric power from Central Asian countries to cover the growing demand for electricity in Afghanistan and Pakistan.

**of the National Energy Holding has changed.** Deputy Minister of Energy and Industry Taalaibek Ibraev introduced the newly appointed Chairman of the Board Askhat Berdiev to the staff of the National Energy Holding .

**Power stations: Started returning electricity to Kazakhstan and Uzbekistan.** From June 1, 2021, the return of electric energy to Kazakhstan and Uzbekistan has begun in accordance with previously reached agreements. This was reported in JSC "Electric Stations".

The company recalled that on March 2, 2021, the Ministries of Energy and Industry of Kyrgyzstan and Energy, Ecology, Geology and Natural Resources of Kazakhstan signed a protocol on the exchange of electricity. On March 11, 2021, the same document was signed between the Ministries of Energy and Industry of Kyrgyzstan and Energy and Water Resources of Uzbekistan. In addition, a resolution and order of the Government of the Kyrgyz Republic on the exchange of electricity between Kyrgyzstan and Kazakhstan and between Kyrgyzstan and Uzbekistan were adopted.

“In accordance with the agreements, from March to November 2021, Kazakhstan will supply (import) up to 900 million kilowatt-hours of electricity to Kyrgyzstan. Uzbekistan will supply from March 2021 to April 2022 up to 750 million kilowatt-hours of electricity. The amount of electricity received in the framework of the interchange is only up to 1 billion 650 million kilowatt-hours. Under the terms of the agreements, Kyrgyzstan will return electricity in the amount of up to 550 million kilowatt-hours for three years from June to August from 2021 to 2023. Up to 300 million kilowatt-hours should be supplied to Kazakhstan, up to 250 million kilowatt-hours to Uzbekistan, ”the Electric Stations said.

It is planned to increase the load of the Bishkek thermal power plant in summer up to 155 megawatts and in winter up to 420 megawatts. As a result, the annual volume of electricity generation will be 2.5 billion kilowatt-hours.

From March to May 2021, Kyrgyzstan has already received 675.9 million kilowatt-hours of electricity from Kazakhstan and Uzbekistan.

Including from Kazakhstan, we received 419.8 million kilowatt-hours, from Uzbekistan - 256.1 million kilowatt-hours.

**Turkmenistan is ready to supply Kyrgyzstan with gas and electricity.** Turkmenistan is ready to meet all the needs of Kyrgyzstan for gas and electricity. This became known during bilateral talks between President of Turkmenistan Gurbanguly Berdimuhamedov with President of the Kyrgyz Republic Sadyr Zhaparov in an expanded format in Ashgabat.

Berdimuhamedov outlined bilateral cooperation in the energy sector as an important point in the negotiations . In particular, we are talking about the supply of Turkmen natural gas and electricity to Kyrgyzstan.

According to him, the Turkmen side is ready to meet all the needs of Kyrgyzstan and discuss technical and organizational issues.

It was proposed to hold joint exhibitions on a regular basis, to develop contact with the business community of the two countries.

**THE REPUBLIC OF MOLDOVA**

**M oldavskaya GRES increased electricity generation by 11% in the first quarter.** One of the largest Pridnestrovian enterprises, Moldavskaya GRES, produced 1.121 billion kWh of electricity in the first quarter, which is 11% more than the same period in 2020. Accordingly, the plant's installed capacity utilization factor increased from 18.32% to 20.61%.

The supply of thermal energy increased by 16%, to 46.5 thousand Gcal, due to a decrease in the average level of outdoor air temperature during the heating season by 3.6 ̊С compared to the previous year.

As in the previous year, gas absolutely dominated in the fuel balance of MGRES - 99.9%, while the share of coal was 0%, and fuel oil - 0.1%.

MGRES is one of the largest power plants in Eastern Europe. It was put into operation in 1964. It has 12 power units with a total installed capacity of 2520 MW, of which only three or four are in operation. GRES is the main supplier of electricity to Moldova, which produces only a quarter of the energy consumed. According to the new contract, from April 1, the station will supply it to the energy enterprises of the Republic of Moldova at $53.5 per 1MW/hour.

**Moldova increased electricity consumption by almost 5%.** Electricity supply companies of Moldova ( Gas natural Fenosa furnizare Energie and Furnizare energy electrice Nord ) purchased almost 1.090 billion kWh of electricity in the first quarter - 50.1 million (4.8%) more than a year earlier, paying 1.086 billion lei (-8.3%) for it.

According to the National Agency for Energy Regulation (ANRE), this electricity was supplied to consumers for 1.745 billion lei at an average tariff of 160.2 bani per 1 kWh, while the purchase price was 99.7 bani .

The share of electricity purchased from domestic producers reached 41.4%, or 451 million kWh for 540.8 million lei, and the rest - abroad (in Transnistria and Ukraine - "I."). Moreover, the price of foreign electricity (85.4 bani per 1 kWh) is much cheaper than the Moldovan one (119.9 bani ).

Electricity transportation services brought 156.8 million lei (+4.5%) to energy companies , and 486.1 million lei (-14%) in distribution.

45.5% of the supplied electricity fell on household consumers, and 54.5% - on the rest. The level of settlements for it amounted to 99.7% (+3.2 percentage points ).

### The state company Energocom will allocate 50% of the net profit for 2020 to pay dividends and increase the authorized capital by 10 times - up to 1 million lei. The corresponding decision was made during the annual general meeting of shareholders of the company, which also approved the priority areas of Energocom's activities - a business plan for 2021-2023. and elected new members of the Society Council ( Lilian Krystyuk , Viorica Bezhan , Oleg Filimon, Mikhail Botnari , Andriy Balan).

The meeting approved the annual financial report of Energocom for 2020 and the annual reports of the Board of the company and the Audit Commission for the last year. The shareholders approved the procedure for distributing net profit for 2020, deciding to allocate 50% for the payment of dividends, and also approved the standards for the distribution of profits expected to be received in 2021. They also approved an increase in the authorized capital of the company at the expense of equity capital to 1 million lei increase in the nominal value of the placed shares. In addition, shareholders approved a new version of the company's charter.

InfoMarket agency previously reported , Energocom's net profit in 2020, compared to 2019, decreased by 16.4% and amounted to 24.47 million lei against 29.28 million lei a year earlier. According to the published annual financial statements of the company, in particular, last year its sales revenue decreased by 10.1% - from 4 billion 470.84 million lei in 2019 to 4 billion 019.76 million lei in 2020, and the cost of sales decreased by 10.5% - from 4 billion 430.97 million to 3 billion 965.58 million lei. The administrative expenses of the enterprise in 2020 amounted to 12 million 556.8 thousand lei against 12 million 635.04 thousand lei a year earlier. The total assets of the company increased over the year by 3.2% - from 376.66 million lei in 2019 to 388.66 million lei.

The authorized capital of the company is 100 thousand lei. The company is 100% owned by the state. Energocom is the central electricity supplier. The company supplies electricity at unregulated tariffs for the needs of the domestic market.

### In the first quarter of 2021, the electricity distribution networks of Moldova, compared to the same period in 2020, increased the volume of purchases of electricity in physical terms by 4.8% - up to 1 billion 089.9 kWh. As InfoMarket was informed in the National Agency for Energy Regulation, at the same time, in terms of value, its purchases for the specified period decreased by 8.3% - up to 1 billion 086.5 million lei, which was due to a decrease in its purchase cost on average by 12.5% - from 113.9 to 99.7 bani per kWh. At the same time, the volume of purchases of electricity from its domestic producers in physical terms in January-March 2021, compared to the same period of the previous year, increased by 35.4% - up to 451 million kWh. electricity, and in money terms it increased by 5.9% - up to 540.8 million lei.

At the same time, 639 million kWh were purchased from Ukraine and Moldavskaya GRES in the first quarter of 2021. by 545.7 million lei, which is 9.6% less in physical terms, and 19% less in value terms, compared to the same period in 2020. At the same time, the share of electricity purchases in the domestic market for the year increased from 32% to 41.4%, and in Ukraine and Moldavskaya GRES, respectively, decreased from 68% to 58.6% of the total.

According to ANRE, in particular, in January-March 2021, GNF Furnizare Energie purchased 726 million kWh of electricity (+2.1% compared to the same period in 2020) for 720.3 million lei (-10.9%), FEE Nord - 262.6 million kWh. (+3.7%) by 262.2 million lei (-9.6%), other suppliers -101.3 million kWh. (+34.5%) by 104.1 million lei (+21.1%). In particular, GNF Furnizare Energie bought 294.9 million kWh from domestic producers in Q1 2021. (+37.6%) by 352.3 million lei (+5%), while Ukraine and MoldGRES - 431.1 million kWh. (-13.2%) by 368 million lei (-22.2%).

In turn, FEE Nord purchased 103.1 million kWh from domestic producers. (+33.3%) by 125.8 million lei (+2.9%), while Ukraine and MoldGRES - 159.5 million kWh. (-9.3%) by 136.4 million lei (-18.8%). At the same time, other suppliers in January-March this year . bought from domestic producers 52.9 million kWh. (+27.9%) by 62.7 million lei (+17.9%), while Ukraine and MoldGRES - 48.4 million kWh. (+42.4%) by 41.4 million lei (+26.4%).

**RUSSIAN FEDERATION**

**The energy market becomes common**

*The State Duma adopted a law on the ratification of the protocol on amending the Treaty on the Eurasian Economic Union, which provides for the formation of a common electric power market of the EAEU.*

The agreement is aimed at improving the energy security of the member states of the Eurasian Union and the formation of a legal space in it that will ensure fair competition, create conditions for increasing the efficiency and competitiveness of the economies of the member states of the Union in the electric power industry and strengthen mutually beneficial and equal economic cooperation.

In 2019, the Eurasian Economic Commission reported that the common electricity market of the Eurasian Economic Union (EAEU) would be launched no later than January 1, 2025.

In particular, the document allows using the existing advantages of the parallel operation of the energy systems of the EAEU member countries at a qualitatively new level and defines the main provisions in the field of electricity trade between the subjects of the national electricity markets of the five states.

The rules for the functioning of the common electric power market of the Union are also established. In addition, the document is the basis for the development at the next stages of a number of regulatory documents that regulate the functioning of the common electricity market of the EAEU in more detail.

**The Duma proposed to provide tax incentives for pumped storage power plants**

The Ministry of Energy considered the exemption from income tax to be the most attractive measure for investors in PSPs.

The State Duma Committee on Energy has proposed exempting pumped storage power plants (PSPPs) from taxes on property, profits, and water tax, or reducing their rates.

The document dated May 28, compiled as a result of the round table of the committee, was sent to the relevant departments, a source in the lower house of parliament told the publication.

The Ministry of Energy considered the exemption from income tax to be the most attractive measure for investors in PSPs. For a large pumped storage power plant, this can be in the range of 200-300 million rubles a year. The payment for water is insignificant, also because the PSP works on recycled water, and consumes it from external sources only to compensate for losses due to evaporation from the pools. The rest of the taxes are minor.

A significant measure of support in the Ministry of Energy would consider the exemption of the pumped storage power plant from paying the cost of electricity consumed for injection.

PSP is a hydroelectric power plant for leveling the electrical load in the network. At night, the pumped storage power plant consumes electricity from the network produced by other types of power plants, with its help they pump water from the lower zones of the station to the upper ones. During the daytime, water from the upper zones is dumped down, passes through generators and produces electricity that goes into the grid.

**" Rosseti " are ready to increase debts for the sake of national construction projects. " Rosseti " are preparing in the next decade to increase the volume of investments by more than 30%, mainly due to the construction of networks for the BAM and the Trans-Siberian Railway, follows from the long-term development program of the state holding . Under the current regulation, the company's debt burden will increase significantly, and profits will decrease, however, Rosseti can improve its performance through initiatives that have not yet been approved. Rosseti's long-term plans also exclude the privatization of subsidiaries, provide for the launch of an option program for top management and a change in dividend policy.** The state holding Rosseti , which includes the Federal Grid Company (FGC) and interregional distribution grid companies (MRSK), can increase revenue to 1.686 trillion rubles by 2030, and net profit to 224 billion rubles . This is the basic scenario for the long-term development program of Rosseti until 2030 - according to Kommersant, it was approved by the government commission on the electric power industry on June 10. The baseline scenario assumes an increase in the energy transmission tariff at the level of "inflation minus 1%", after 2024 - "inflation minus 0.1%", as well as innovations in regulation - the introduction of a fee for power reserve and technological connection.

In the pessimistic scenario (with the current regulation parameters), revenue will grow to 1.43 trillion rubles, net profit will fall to 7 billion rubles. from 68 billion rubles. in 2021.

The growth of the holding's financial indicators will be seriously hampered by the financing of works on the construction of power grids for the expansion of the Eastern polygon of Russian Railways. In the negative scenario, the investment program of Rosseti increases from 271 billion rubles. in 2020 to 355 billion rubles. in 2021, reaching a peak of 386 billion rubles. by 2023, and remains at a high level in subsequent years even after the completion of the electrification program for the Eastern test site.

According to the pessimistic scenario, dividends for the Rosseti group , which the parent company receives from IDGCs and FGCs, will be in the range of 26-33 billion rubles on the horizon until 2030. At the same time, payments from the Federal Grid Company will grow: from 18.5 billion rubles. in 2021 to 22-23 billion rubles. by 2030. On the part of IDGCs, payments to shareholders, on the contrary, will decrease from 11 billion rubles. in 2011 to 3.6 billion rubles. in 2024, and then rise again - up to 9.9 billion rubles. in 2030. The debt/EBITDA ratio of Rosseti in this scenario will increase from 2.2 to 4.3 by 2030.

In the base scenario, the volume of the Rosseti investment program will remain at the same level as in the pessimistic scenario. But due to revenue growth, the debt / EBITDA ratio will decrease from 2 to 1.3 by 2030.

Dividends of MRSK and FGC will grow three times: from 34 billion rubles. up to 98.96 billion rubles. in 2030. Including payments from IDGCs will increase from 16 billion rubles. to 76 billion rubles, from FGC they will remain in the range of 18.5-23 billion rubles.

As for the general scheme for the development of Rosseti , the program mentions the need to maintain the state holding's share in subsidiaries at the level of January 2020, which in fact means the refusal to privatize IDGCs until 2030. At the same time, the document does not mention further consolidation of the grid complex, but only notes the need to optimize the management structure "to reduce transaction costs and increase manageability." The company also intends to significantly increase non-tariff revenue through the development of a network of electric filling stations , microgrid services and demand response (demand management systems). As measures that increase the value of the company, the adoption of a program of additional long-term motivation of management based on shares, as well as a new dividend policy, is mentioned.

**For the first time in the backbone networks of Russia, backup power systems based on Li-ion drives have been introduced.** The pilot site of the project was the 220 kV Svarochnaya substation in the Sverdlovsk region, which feeds the Ural Locomotives plant, Lastochka, a manufacturer of freight electric locomotives and high-speed trains.

The innovative backup power system was developed by the Research and Development Center of Rosseti FGC UES. Now, thanks to the use of lithium-ion batteries ( Li-ion ), the charge time will be halved, and environmental safety will increase.

Power engineers carry out work within the framework of the industry national project " Energy Efficient Substation".

Batteries and rectifier-charging devices are used to ensure the operation of relay protection and automation, telemechanics and signaling, including when the substation is completely turned off. With the help of an operational direct current system that feeds relay protection and automation devices (RPA), damaged network elements will be localized, which will ensure uninterrupted power supply to consumers.

The new equipment has significant advantages over traditional lead-acid batteries because it is more compact and does not require special engineering infrastructure. In addition, the introduction of modern automation tools provides the possibility of remote control.

It is expected that after comprehensive testing, which will last until the end of this year, the energy company Rosseti FGC UES will decide to replicate this experience.

**Russia took second place in the ranking of countries with cheap electricity.** Russia took the second place in the ranking of European countries with the cheapest electricity for the population, the leader of the list is Kazakhstan, the most expensive electricity is in Germany, follows from a study by RIA Novosti.

To assess the cost of electricity for the population, RIA Rating experts analyzed its prices in terms of rubles. "The lowest cost of electricity in Kazakhstan. In terms of Russian currency, kWh costs a little more than 2 rubles here. Russia is in second place, in our country the average cost of electricity was 3.6 rubles per kWh . Third place in terms of cheapness of electricity occupied by Ukraine, where electricity in terms of rubles costs 4.5 rubles," the study says.

**Rosseti is introducing renewable energy generators to improve the energy efficiency of main substations.** The pilot energy project was implemented at the 500 kV Astrakhan substation, with a capacity of 501 MVA - the main power supply center of the Astrakhan region, providing electricity to areas with a total population of 320 thousand inhabitants. At the power facility, the specialists of the energy company installed solar and wind generators , as well as lithium-ion batteries, which make it possible to use the accumulated energy in the dark. The key objective of the project was to reduce the consumption of electricity from the network for own needs - cooling of power transformers, lighting and ventilation of premises, heating of certain categories of equipment, etc. Power engineers expect to benefit from the project in the form of savings of up to 90 thousand kWh of electricity per year.

The complex includes 3 blocks of solar panels, consisting of 135 photovoltaic modules, and a wind power plant with a total capacity of 56.3 kW. At the same time, 2 sets of solar panels were placed on special trackers , which change position during the day to maintain maximum efficiency. Li-ion batteries were used to use the accumulated energy .

**THE REPUBLIC OF TAJIKISTAN**

**months of this year, Tajikistan gained more than $11.2 million from the supply of electricity to neighboring countries.** According to the relevant departments of the energy sector of the Republic of Tajikistan, the amount of electricity exports increased by 30.8% compared to the same period in 2020.

Meanwhile, the energy sector did not disclose data on the volume of electricity supplies to neighboring countries during this period and only noted that electricity was supplied to Afghanistan and Uzbekistan.

According to the State Energy Holding , electricity is exported to Afghanistan through two transmission lines - 110 kV and 220 kV. The cost of electricity supplied through a 110 kV transmission line is 3 cents per kilowatt, and for 220 kV - 4.5 cents with an annual increase of 3%.

According to Barki Tojik , the export of electricity in 2020 compared to a year earlier, due to lack of water resources, decreased by more than 48%, amounting to only 1.6 billion kWh in 2020.

It is expected that by the end of this year, more than 3 billion kWh of Tajik electricity will be delivered abroad.

**The energy capacity of Tajikistan has increased by 4 billion kWh over 30 years, but the problem of energy shortage remains.** The energy capacity of Tajikistan over the past 30 years has increased by almost 4 billion kW / h, but the problem of energy shortage in winter has not been fully resolved.

According to the relevant departments of the country's energy sector, more than 2 thousand megawatts of new capacities have been commissioned since independence, and the volume of electricity production from 17 billion kWh in 1991 reached 21 billion kWh in 2019.

In order to ensure energy independence in the future, meet the needs of the population and the national economy in electricity, a number of large and small energy facilities are being built and reconstructed .

Currently, for a total amount of more than 11.3 billion somoni , work continues on the reconstruction of the Nurek, Sarband , Kairakkum hydroelectric power plants , and 500-kilovolt power lines and substations are being reconstructed within the framework of the CASA-1000 project. The construction of the Sebzor hydroelectric power station in the Roshtkala district of the Gorno-Badakhshan Autonomous Region has also begun .

This year, it is planned to complete the reconstruction of the Sarband hydroelectric power station with a capacity of 270 megawatts.

Recall that this year the consumption limit was officially introduced on January 6, although electricity was cut off to the population of the country's regions since October last year.

Power engineers explained the situation by increased consumption, reduced water inflow and lower water levels in the Nurek reservoir. Prior to this, restrictions on the supply of electricity continued from mid-October to December 10 last year, although the introduction of the limit was not officially announced.

For three years (2017-2019), the country stopped the practice of introducing a limited supply of electricity to residents of the country in the autumn-winter period. This was facilitated by the commissioning of CHPP-2 and the launch of the first two units of the Rogun hydroelectric power plant.

**Tajikistan launched a new five-year regional energy program "USAID - Energy in Central Asia" with a budget of $ 39 million. The** United States Agency for International Development (USAID) under this program will assist the five countries of Central Asia in achieving priority national energy goals, the US Embassy reports in Dushanbe.

In addition, the report emphasizes, this program is aimed at "obtaining economic benefits from cross-border trade in energy resources and increasing the level of energy security through greater regional integration."

“Successfully functioning competitive energy markets and energy security are critical to promoting social, economic and political growth in Central Asia,” and. O. USAID Mission Director in Tajikistan Keith Simmons .

The report notes that Central Asia has rich renewable energy sources, including hydropower.

The hydropower potential of Tajikistan is estimated at 527 billion kilowatt-hours per year.

According to this indicator, Tajikistan ranks eighth in the world, after China, Russia, the USA, Brazil, the Democratic Republic of the Congo, India and Canada.

In terms of its ability to export hydropower resources (497 billion kilowatt-hours), Tajikistan ranks third in the world, behind only Russia and the Democratic Republic of the Congo.

**Tajikistan and Uzbekistan to build two HPPs on the Zarafshan River, worth $552 million**

The stations will be built in Tajikistan to meet the needs of Uzbekistan in electricity.

**Uzbekistan and Tajikistan will build two hydroelectric power plants on the Zarafshon River .** The construction of the stations is planned in two stages. First of all, the Yavanskaya HPP will be built, which will generate 800 million kilowatt-hours of electricity per year. The preliminary cost of this station, with a capacity of 140 MW, is estimated at $282 million.

At the second stage, the possibility of building the Fondaryo hydroelectric power station , which will generate an average of 600 million kilowatt-hours of electricity per year, will be studied.

The construction of this station, with a capacity of 135 MW, will require $270 million.

Zarafshon (Zerafshan) is a river in Tajikistan and Uzbekistan. In ancient times, it was a tributary of the Amu Darya, at present it does not reach it due to the analysis of water for irrigation. The current length of the river is 877 kilometers, the length to the Karakul oasis, where the river divides into branches - 803 km.

The implementation of these projects will create a Tajik-Uzbek joint-stock company.

The projects are planned to be financed through loans and grants from international financial institutions, as well as through the two countries' own funds.