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**REPORT**

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

**JANUARY-JULY 2020**

**MARKET DEVELOPMENT DEPARTMENT**

**August 2020**

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# **SECTION I**

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

According to the System Operator, Republic of Kazakhstan’s power plants generated 61 472.9 million kWh of electricity in January-July 2020, which is 1.7% more than in the same period of 2019. The increase in generation was observed in all zones of the UES of Kazakhstan.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **Zone** | **Generation type** | **January-July** | **Δ, %** |
| **2019** | **2020** |
| **Kazakhstan** | **Total**  | **60425,6** | **61472,9** | **1,7%** |
| *TPP* | *48654,9* | *48765,2* | *0,2%* |
| *GTPP* | *5208,7* | *5606,2* | *7,6%* |
| *HPP* | *6016,6* | *5788,1* | *-3,8%* |
| *WPP* | *349,5* | *562,2* | *60,9%* |
| *SES* | *193,9* | *748,6* | *286,1%* |
| *BSU*  | *2,0* | *2,6* | *30,0%* |
| **North** | **Total** | 46208,0 | 46717,6 | 1,1% |
| *TPP* | *40224,3* | *40383,5* | *0,4%* |
| *GTPP* | *1751,4* | *1919,6* | *9,6%* |
| *HPP* | *4053,2* | *3875,1* | *-4,4%* |
| *WPP* | *88,1* | *260,7* | *195,9%* |
| *SES* | *89,0* | *276,1* | *210,2%* |
| *BSU*  | *2,0* | *2,6* | *30,0%* |
| **South** | **Total** | *6446,9* | *6781,9* | *5,2%* |
| *TPP* | *4125,8* | *4154,4* | *0,7%* |
| *GTPP* | *122,5* | *109,3* | *-10,8%* |
| *HPP* | *1963,4* | *1913,0* | *-2,6%* |
| *WPP* | *132,2* | *134,6* | *1,8%* |
| *SES* | *103,0* | *470,6* | *356,9%* |
| **Western** | **Total** | 7770,7 | 7973,4 | 2,6% |
| *TPP* | *4304,8* | *4227,3* | *-1,8%* |
| *GTPP* | *3334,8* | *3577,3* | *7,3%* |
| *WPP* | *129,2* | *166,9* | *29,2%* |
| *SES* | *1,9* | *1,9* | *0,0%* |

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

In January-July 2020, compared to the same period of 2019, electricity production increased significantly (20% growth and above) in Kostanay, Turkestan and Kyzylorda regions. At the same time, a decrease in electricity production was observed in Zhambyl, Mangistau and East Kazakhstan regions.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Region** | **January-July** | **Δ, %** |
| **2019** | **2020** |
| 1 | Akmola |  2 516,2  |  2 671,0  | 6,2% |
| 2 | Aktobe |  2 243,5  |  2 346,3  | 4,6% |
| 3 | Almaty |  4 115,3  |  4 238,1  | 3,0% |
| 4 | Atyrau |  3 369,2  |  3 620,0  | 7,4% |
| 5 | East Kazakhstan |  5 684,9  |  5 523,3  | -2,8% |
| 6 | Zhambyl |  1 347,8  |  1 321,1  | -2,0% |
| 7 | West Kazakhstan |  1 298,6  |  1 340,2  | 3,2% |
| 8 | Karaganda |  9 517,4  |  9 679,9  | 1,7% |
| 9 | Kostanay |  528,5  |  675,1  | 27,7% |
| 10 | Kyzylorda |  243,3  |  306,8  | 26,1% |
| 11 | Mangystau |  3 102,9  |  3 013,2  | -2,9% |
| 12 | Pavlodar |  23 802,6  |  23 901,8  | 0,4% |
| 13 | North Kazakhstan |  1 914,9  |  1 920,2  | 0,3% |
| 14 | Turkestan |  740,5  |  915,9  | 23,7% |
|  | **Total for RoK** |  **60 425,6**  | **61 472,9** | **1,7%** |

# *Electricity generation by associated generation*

In January-July 2020, electricity production from associated generation totaled 31.7 billion kWh, which is comparable to the same period in 2019 (22.8 billion kWh). Meanwhile, compared to January-July 2019, the share of associated generation increased slightly to 51.6% of the total electricity generation in Kazakhstan.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** |
| **January-July** | **share in the Republic of Kazakhstan, %** | **January-July** | **share in RoK, %** |
| 1 | ERG | **11 367,7** | **18,8%** | **11 192,1** | **18,2%** |
| 2 | Kazakhmys Energy LLP | **4 365,3** | **7,2%** | **4 423,3** | **7,2%** |
| 3 | Kazzinc LLP | **1 783,5** | **3,0%** | **1 684,1** | **2,7%** |
| 4 | Arcellor Mittal JSC | **1 221,8** | **2,0%** | **1 636,2** | **2,7%** |
| 5 | KKS LLP | **3 766,0** | **6,2%** | **3 669,3** | **6,0%** |
| 6 | CAEC | **3 921,2** | **6,5%** | **4 095,1** | **6,7%** |
| 7 | Zhambyl GRES JSC | **1 057,1** | **1,7%** | **989,4** | **1,6%** |
| 8 | Oil and gas enterprises | **3 032,1** | **5,0%** | **4 012,4** | **6,5%** |
|  | **TOTAL** | **30 514,7** | **50,5%** | **31 701,9** | **51,6%** |

The volume of electricity production by the energy producing organizations of Samruk-Energy JSC in January-July 2020 amounted to16 382,6mln/kWh, or an increase of 1.8% compared to the same period of 2019.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Δ2020/2019** |
| **January-July** | **share in RoK, %** | **January-July** | **share in RoK %** |  **mln kWh** | **%** |
|  | **Samruk-Energy JSC** | **16 088,9** | **26,6%** | **16 382,6** | **26,7%** | **293,7** | **1,8%** |
| *1* |  *AlES JSC* | *3 152* | *5,2%* | *3 153,8* | *5,1%* | *1,9* | *0,1%* |
| *2* | *Ekibastuz GRES-1 LLP* | *8 960,6* | *14,8%* | *9 819,2* | *16,0%* | *858,7* | *9,6%* |
| *3* |  *Ekibastuz GRES JSC-2 JSC* | *2 973,9* | *4,9%* | *2 396,2* | *3,9%* | *-577,7* | *-19,4%* |
| *4* |  *Shardara HPP JSC* | *309,3* | *0,5%* | *382,1* | *0,6%* | *72,7* | *23,5%* |
| *5* | *Moinak HPP JSC* | *605,1* | *1,0%* | *536,2* | *0,9%* | *-68,9* | *-11,4%* |
| *6* | *Samruk-Green Energy LLP* | *2,1* | *0,003%* | *2,5* | *0,004%* | *0,38* | *18,1%* |
| *7* | *First Wind Power Station LLP* | *86,1* | *0,1%* | *92,7* | *0,2%* | *6,6* | *7,7%* |

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

# *Electricity consumption by zones and regions*

According to the data of the System Operator, in January-July 2020, there was an increase by 2% in the electricity consumption in the Republic compared to the indicators of January-July 2019. Thus, in the northern zone consumption increased by 2%, western zone by 2%, and in the southern zone by 1%.

 *million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Name** | **January- July 2019** | **January-July 2020** | **Δ, million kWh** | **Δ, %** |
| **I** | **Kazakhstan** | **60 327,2** | **61 280,5** | **953,3** | **2%** |
| 1 | Northern zone | **39 616,4** | **40 276,2** | **659,8** | **2%** |
| 2 | Western zone  | **7 818,4** | **8 008,2** | **189,8** | **2%** |
| 3 | Southern zone | **12 892,5** | **12 996,1** | **103,6** | **1%** |
|  | ***including by region*** |  |  |  |  |
| 1 | East Kazakhstan  | 5 399,6 | 5 405,1 | 5,5 | 0,1% |
| 2 | Karaganda  | 10 299,5 | 10 588,8 | 289,3 | 3% |
| 3 | Akmola  | 5 270,4 | 5 126,2 | -144,2 | -3% |
| 4 | North Kazakhstan | 1 008,9 | 938,2 | -70,7 | -7% |
| 5 | Kostanay  | 2 740,2 | 2 600,8 | -139,4 | -5% |
| 6 | Pavlodar  | 11 163,7 | 11 808,6 | 644,9 | 6% |
| 7 | Atyrau  | 3 638,3 | 3 725,7 | 87,4 | 2% |
| 8 | Mangystau  | 3 007,2 | 2 977,2 | -30,0 | -1% |
| 9 | Aktobe  | 3 734,0 | 3 808,5 | 74,5 | 2% |
| 10 | West Kazakhstan  | 1 172,9 | 1 305,3 | 132,4 | 11% |
| 11 | Almaty  | 6 438,1 | 6 338,7 | -99,4 | -2% |
| 12 | Turkestan | 2 922,1 | 2 919,3 | -2,8 | -0,1% |
| 13 | Zhambyl  | 2 515,8 | 2 758,9 | 243,1 | 10% |
| 14 | Kyzylorda  | 1 016,4 | 979,2 | -37,2 | -4% |

# **Industry results for January-July 2020**

*(express information of the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan)*

In January-July 2020 compared to January-July 2019, the index of industrial production amounted to 101.3%. Increase in production volumes was recorded in 12 regions of the republic, decrease was observed in Kyzylorda, Aktobe, Mangistau, East Kazakhstan regions and Shymkent city.

**Change in industrial output by region**

*as a percentage of the corresponding period of the previous year*

In North-Kazakhstan region there was an increase in uranium ore mining, production of unrefined rapeseed oil, processed milk, butter and flour increased (108.1%).

In Nur-Sultan city the production of soft drinks, refined gold, diesel locomotives and railroad cars increased (106.5%).

In Kostanay region, production of iron ore concentrates increased, production of flour, bars and rods of steel, cars and trucks increased (106.5%).

In Almaty oblast, production of confectionery and chocolate, soft drinks, cigarettes, medicines, mounting panels and instrument panels increased (105%).

In Akmola oblast there was an increase in production of copper and gold concentrates, production of flour, portland cement, gold in gold doré alloy, unprocessed gold and tractors (104.1%).

In Turkestan region there was an increase in production of processed cotton, oil bitumen, commodity concrete and distribution power boards and boxes (103.8%).

In Karaganda region there was an increase in production of copper and zinc concentrates, production of flat rolled products, refined gold, blistered and refined copper increased (103.4%).

In West-Kazakhstan region due to the increase in gas condensate production, the index of industrial production amounted to 103.3%.

In Atyrau region due to the increase in crude oil production, the index of industrial production amounted to 102.8%.

In Zhambyl oblast, extraction of gold-containing ores and phosphate raw materials increased, production of phosphorus, orthophosphoric acid and phosphate fertilizers increased (101.4%).

In Almaty city the production of beer, medicines, cans of ferrous metals and other aluminum metal products increased (100.9%).

In Pavlodar oblast, production of copper concentrates increased, production of part of railroad locomotives, streetcar motor cars and rolling stock increased (100.4%).

In East-Kazakhstan region due to decrease in extraction of copper ores and concentrates, decrease in production of coins and medals the index of industrial production amounted to 99.4%.

In Shymkent city due to reduction of production of kerosene, diesel fuel, heating oil and vacuum gasoil the index of industrial production amounted to 99.2%.

Industrial production index in Aktobe region amounted to 96.7%, Mangistau region 95.5% and Kyzylorda region 89.6% mainly due to the decrease in crude oil production.

*(Source:* [*www.stat.gov.kz*](http://www.stat.gov.kz)*)*

# *Electricity consumption by large consumers in Kazakhstan*

In January-July 2020, electricity consumption by large consumers decreased by 2.6% compared to the same period in 2019.

*million kWh*

|  |  |  |
| --- | --- | --- |
| **№** | **Consumer** | **January-July** |
| **2019** | **2020** | **Δ, %** |
| 1 | Arcelor Mittal Temirtau JSC | 2 146,1  | 2 172,9 | -1% |
| 2 | AZF (Aksu) TNK Kazchrome JSC | 3 396,3  | 3 257,1 | 4% |
| 3 | Kazakhmys Smelting LLP  | 697,3  | 687,4 | 1% |
| 4 | Kazzinc LLP | 1 662,3  | 1 691,3 | -2% |
| 5 | Kazzinc JSCSokolovsko-Sarbay State Enterprise | 965,6  | 1 041,6 | -7% |
| 6 | Kazakhmys Corporation LLP  | 750,5  | 705,2 | 6% |
| 7 | AZF (Aktobe) TNK Kazchrome JSC | 1 846,1  | 1 836,4 | 1% |
| 8 | RSE Kanal im. Satpayev | 125,1  | 112,3 | 11% |
| 9 | Kazphosphate LLP | 1 262,4  | 1 250,3 | 1% |
| 10 | NDFZ JSC (part of Kazphosphate LLP) | 1 104,0  | 1 092,4 | 1% |
| 11 | Taraz Metallurgical Plant LLP | 130,1  | 97,8 | 33% |
| 12 | Ust-Kamenogorsk Titanium and Magnesium Combine JSC | 499,1  | 490,5 | 2% |
| 13 | Ust-Kamenogorsk Titanium and Magnesium Combine JSCTengizchevroil | 1 076,4  | 1 125,9 | -4% |
| 14 | JSC " PAZ "(Pavlodar Aluminum Plant) | 558,1  | 552,2 | 1% |
| 15 | JSC " KEZ "(Kazakhstan Electrolysis Plant) | 2 192,4  | 2 183,7 | 0% |
| 16 | Temirzholenergo LLP | 814,5  | 919,9 | -11% |
| 17 | JSC "KEGOC" | 2 500,0  | 3 040,9 | -18% |
| **Total** | **20 622,2** | **21 165,4** | **-2,57%** |

# **Coal**

# *Steam coal production in Kazakhstan*

According to information from the Statistics Committee of the Ministry of Energy of Kazakhstan, Kazakhstan produced 60 690,5 thousand tons of hard coal in the period January-July 2020, which is 1% higher than the same period in 2019 (59 966,1 thousand tons).

|  |  |  |  |
| --- | --- | --- | --- |
| **№**  | **Oblast** | **January-July** | **Δ, %** |
| **2019**  | **2020**  |
| 1 | Pavlodarskaya | 37 949,6 | 38 038,5 | 100% |
| 2 | Karagandinskaya | 18 063,7 | 18 865,8 | 104% |
| 3 | East Kazakhstan | 3 801,3 | 3 721,3 | 98% |
|  | **Total in RoK** | **59 966,1** | **60 690,5** | **101%** |

# *Coal production by Samruk-Energy JSC*

In January-July 2020, Bogatyr Komir LLP produced 24 899 thousand tons, which is 1.4% more than in the corresponding period of 2019 (24 564 thousand tons).

# *Coal sales by Samruk-Energy JSC*

In January-July 2020, 24 816 thousand tons were sold, including:

- 18 921 thousand tons were delivered to the domestic market of the Republic of Kazakhstan, which is 3.2% less than in the corresponding period of 2019 (18 338 thousand tons);

- exported to Russia – 5 894 million tons, which is 3% more than in the corresponding period of 2019 (6 076 thousand tons).

*thousand tonnes*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Region** | **Sales volume, thousand tonnes** | **Δ, %** |
| **January-July 2019** | **January-July 2020** |
| Total exports to the domestic market of the Republic of Kazakhstan | **18 338** | **18 921** | **103,2%** |
| Total exports to the Russian Federation | **6 076** | **5 894** | **97%** |

As per the figures for January-July 2020, as compared to the same period in 2019, the Company has seen an increase in coal sales by 1.6%.

# **Renewable energy sources**

The volume of electricity produced by renewable energy facilities (SES, wind farms, BGS, small hydroelectric power plants) in January-July 2020 amounted to 1 784 million kWh. Compared to January-July 2019 (1032.2 million kWh), the increase was 72.8%.

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Deviation 2020/2019** |
| **January-July** | **share in the Republic of Kazakhstan, %** | **January-July** | **share in the Republic of Kazakhstan, %** |  **mln kWh** | **%** |
|  | **Total output in the Republic of Kazakhstan** | **60425,7** | **100%** | **61472,8** | **100,0%** | **1047,1** | **1,7%** |
| **I** | **Total RES in the Republic of Kazakhstan, including by zones**  | **1032,2** | **1,7%** | **1784,0** | **2,9%** | **751,8** | **72,8%** |
| 1. | *Northern Zone* | *278,7* | *27,0%* | *617,6* | *34,6%* | *338,9* | *121,6%* |
| 2. | *Southern zone* | *622,4* | *60,3%* | *943,9* | *52,9%* | *321,5* | *51,7%* |
| 3. | *Western Zone* | *131,1* | *0,0%* | *222,5* | *12,5%* | *91,4* | *0,0%* |
| **II** | **Total RES in the Republic of Kazakhstan, including by type**  | **1032,2** | **1,7%** | **1784,0** | **2,9%** | **751,8** | **72,8%** |
| 1. | *SES* | *194,0* | *18,8%* | *802,2* | *45,0%* | *608,2* | *313,5%* |
| 2. | *Wind farms* | *349,5* | *33,9%* | *559,7* | *31,4%* | *210,2* | *60,1%* |
| 3. | *Small hydroelectric* | *486,7* | *47,2%* | *419,5* | *23,5%* | *-67,2* | *-13,8%* |
| 4. | *Biogas plants* | *2,0* | *0,2%* | *2,6* | *0,1%* | *0,6* | *0,0%* |

In January-July 2020, there is a decrease in electricity production by large and small hydropower plants compared to the same period in 2019, while electricity production by WES, SES and BSU facilities increased.

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Name** | **2019** | **2020** | **Deviation 2020/2019** |
| **January-July** | **share in the Republic of Kazakhstan, %** | **January-July** | **share in the Republic of Kazakhstan, %** | **mln kWh%** | **%** |
|  | ***Electricity production in the Unified Energy System of the Republic of Kazakhstan*** | **60425,7** | **100,0%** | **61472,8** | **100%** | **1047,1** | **1,7%** |
| 1. | Production of "clean" electricity (RES + Large hydroelectric power plants)  | *6338,2* | *10,5%* | *1701,6* | *2,8%* | *-4636,6* | *-73,2%* |
| 2. | Production of "clean" electricity (RES excluding Large hydroelectric power plants) | *1032,200* | *1,7%* | *1784,0* | *2,9%* | *751,8* | *72,8%* |

Electricity generation by RES facilities of Samruk-Energy JSC (SES, WES, small HPPs) in January-July 2020 amounted to 191.5 mln kWh or 10.7% of the total volume of electricity generated by RES facilities, which is lower by -4.3% compared to the same period of 2019 (in January-July 2019, RES generation of the Company amounted to 200.2 mln kWh, and the share of RES of the Company was 19.4%).

The main decrease in the share of the Company's RES power generation is the commissioning of new RES capacities in the RoK.

The Company's share in the production of "clean" electricity (SES, WES, small and large HPPs) for January-July 2020 decreased by -4.2% (1,701.6 mln kWh) compared to the same period of 2019. (1,776.4 mln kWh).

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Deviation 2020/20/2019.** |
| **January-July** | **share in the Republic of Kazakhstan, %** | **January-July** | **share in the Republic of Kazakhstan, %** |  **million kWh** | **%1.** |
|   | Productionof "clean" electricity by JSC "Samruk-Energy" (SES, wind farms, small and large hydroelectric power plants)  | 1776,4 | 28,0% | 1701,6 | 100,0% | -74,8 | -4,2% |
| 2. | Production of "clean" electricity by JSC "Samruk-Energy" (SES, wind farms and small hydroelectric power plants), incl.: | 200,2 | 19,4% | 191,5 | 10,7% | -8,7 | -4,3% |
| 3. |  *Cascade of small hydroelectric power plants of "AlES" JSC* | *112,0* | *10,9%* | *96,4* | *5,4%* | *-15,6* | *-13,9%* |
| 4. | *Samruk-Green Energy LLP* | *2,1* | *0,2%* | *2,4* | *0,1%* | *0,3* | *14,7%* |
| 5. | *First Wind Power Station LLP* | *86,1* | *8,3%* | *92,7* | *5,2%* | *6,6* | *7,7%* |

# **Centralized electricity trading by KOREM JSC**

*(Information provided by KOREM JSC)*

*General results of the trades*

According to the results of centralized electricity trading in June 2020, 17 transactions were concluded in the volume of 115,824 thousand kWh for a total amount of 849,300 thousand tenge (excluding VAT), (including, in the "day-ahead" mode and trading for medium and long-term periods), including:

- spot trades in "day-ahead" mode - 15 deals were concluded in the volume of 55,584 thousand kWh for the total amount of 404,916 thousand tenge. The minimum price at spot trades in "day-ahead" mode amounted to 7.2 tenge/kWh (excluding VAT), and the maximum price amounted to 7.3 tenge/kWh (excluding VAT);

- spot trades "during the operational day" - no deals were concluded.

- trades in electricity for medium- and long-term periods - 2 deals were concluded in the volume of 60,240 thousand kWh for a total amount of 444,384 thousand tenge (excluding VAT). The minimum price for this type of centralized bidding was 1.1 tenge/kWh (excluding VAT), and the maximum price was 7.95 tenge/kWh (excluding VAT).

For the same period of 2019, the total volume of centralized bidding amounted to 3,745,272 thousand kWh. The table below shows the dynamics of transaction prices concluded at centralized bidding in June 2019-2020.

**Dynamics of prices formed as a result of centralized trades**

|  |  |  |  |
| --- | --- | --- | --- |
| **June** | **spot trading in the "day-ahead" mode** | **trading for medium- and long-term periods** | **within the operational day** |
| MIN price  | MAX price | MIN price  | MAX price | MIN price  | MAX price |
| **tg/kWh (excluding VAT)** |
| **2019** | **5** | **7,22** | **5,76** | **8,4** | **-** | **-** |
| **2020** | **7,2** | **7,3** | **1,1** | **7,95** | **-** | **-** |

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

According to the results of spot trades held in June 2020, 15 transactions in the volume of 55,584 thousand kWh were concluded, the minimum clearing price at spot trades in the "day-ahead" mode was 7.2 Tg/kWh (excluding VAT), and the maximum was 7.3 Tg/kWh (excluding VAT).

The table below summarizes volumes and bid-ask prices and final results of spot trades in the "day-ahead" mode in June 2020.



The table shows that the total demand amounted to 95,544 thousand kWh, while the total supply amounted to 60,393 thousand kWh. The unsatisfied demand volume in June 2020 amounted to 38,664 thousand kWh, while the unsatisfied supply volume amounted to 4,809 thousand kWh. In the process of spot trading, the total number of bids accepted into the trading system was -110, including 95 bids from buyers and 15 bids from sellers.

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

According to the results of the trades held in June 2020, no deals were concluded. According to the results of trades held in June 2019, similar to the current period, no deals were concluded.

**Results of trades for medium- and long-term period**

According to the results of bidding for medium- and long-term periods in June 2020, 2 deals were concluded in the volume of 60,240 thousand kWh for a total amount of 444,384 thousand tenge (excluding VAT). The minimum price for this type of centralized bidding was 1.1 tenge/kWh (excluding VAT), and the maximum price was 7.95 tenge/kWh (excluding VAT). One transaction was registered based on the results of centralized trading in electricity with a delivery period of a week, and one transaction was registered with a delivery period of electricity of a quarter.

Compared to the same period of 2019, in June 2020, there was a 98.4% decrease in the volume of trades for the medium- and long-term period.

In June 2019, 55 transactions with the volume of 3,730,368 thousand kWh were concluded in the bidding for the medium- and long-term period. The minimum price for this type of centralized bidding was 5.76 tg/kWh (excluding VAT), the maximum price was 8.4 tg/kWh (excluding VAT).

# **Export-import of electric energy**

In January-July 2020, the main direction of electricity export-import of the RK was the Russian Federation (export to the Russian Federation – 576.7 mln kWh, import from the Russian Federation –643.4 mln kWh). KEGOC – 543.8 mln kWh in order to balance electricity production-consumption. Electricity import from the Russian Federation in the reporting period in the amount of 494.9 mln kWh was carried out in order to balance production-consumption of electricity.

million kWh

| **Name** | **January-July** | **Δ 2020/2019гг.** |
| --- | --- | --- |
| **2019** | **2020** |  **mln kWh** | **%** |
| **Kazakhstan's exports** | **3 878,9** | **1 036,5** | **-2 842,4** | **-73,3%** |
| **to Russia** | *3 876,0* | *576,7* | *-3 299,3* | *-85,1%* |
| **to Central Asian ECO** | *2,9* | *459,8* | *456,9* | *15690%* |
| **Kazakhstan's imports** | **790,1** | **844,1** | **54,0** | **6,8%** |
| **from Russia** | *784,7* | *643,4* | *-141,4* | *-18,0%* |
| **from Central Asian ECO** | *5,4* | *200,7* | *195,3* | *3643,7%* |
| **Balance-flow " + "deficit," - " excess** | **-3 088,8** | **-192,4** | **2 896,4** | **-93,8%** |

# **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 the common electric power market of the Union on the basis of power systems operating in parallel, taking into account the priority provision of electricity 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 EDM will be observed.

On July 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 treaty on the formation of a common electric power market of the Union in the form of the Protocol on Amendments to the Treaty on the Eurasian Economic Union of July 29, 2014 (in terms of the formation of a common electric power market of the Eurasian Economic Union).

On December 20, 2019, the High Council adopted Decision No. 31 "On the plan of measures aimed at the formation of a common electric power market of the Eurasian Economic Union", which establishes, among other things, the deadlines for the approval and entry into force of the rules for the functioning of the common electric power market of the Union, as well as other acts stipulated by the said Protocol.

In 2020, the 13th meeting of the Advisory Committee on Electricity under the EEC Collegium in absentia (July 26, 2020), two meetings of the Subcommittee on the formation of the EEU EDM of the Advisory Committee on Electricity under the EEC Collegium are held, the work on the development and agreement by the EAEU member states of the rules of functioning of the EAEU EDM is carried out (49th meeting on January 23-24, 2020, 50th meeting on May 29, 2020, 51st meeting on July 02, 2020) and one meeting of the Subcommittee members (February 20-21, 2020).

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

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

Since 1992, 53 meetings of the Electricity Council of the Commonwealth of Independent States (hereinafter referred to as the CIS EES) have been held.

By the decision of the CIS Unified Energy System (Protocol No. 50 of 21.10.2016), the Consolidated Schedule for the formation of the common electricity market of the CIS member States was approved.

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Activities** | **Due date** | **Current status** |
| 1 | Implementation of activities in accordance with section II. Action Plan for Cooperation between the EEC and the CIS EES, approved on June 10, 2016. | 2016-2020 | Permanent participation of the EEC representatives at the meetings of the CIS EEC, and representatives of the CIS EEC EC – at the meetings on the formation of the EAEU EER is ensured. |
| 2 | Preparation of a draft Procedure for settling deviations from the agreed values of interstate electric energy flows | 2016-2017. | The decision to develop a procedure for regulating deviations from the agreed values of interstate electric energy flows was made at the 45th meeting of the CIS Unified Energy System. The draft Procedure was considered at the 29th meeting of the Working Group "Formation of the common electricity market of the CIS countries" on September 15, 2016 in Moscow (Russia). In accordance with the Decision of the 47th Session of the CIS EES, the CIS EES Action Plan for 2016 includes the development and approval of draft documents on determining the values of deviations from the agreed values of interstate electricity flows and regulating the values of deviations from the agreed values of interstate electricity flows. Work continues. |
| 3 | Preparation of a draft Procedure for distributing the capacity of interstate cross-sections / export-import cross-sections between participants in export-import activities. | 2018-2020 | By the decision of the 50th meeting of the CIS Unified Energy System, Methodological recommendations on metrological support of measuring systems for electric energy metering on interstatepower transmission lines were approved.By the decision of the 50th session of the CIS Unified Energy System, the Schedule for monitoring the use of regulatory technical documents in the field of metrology of electrical measurements and electricity metering in the production activities of power systems of the CIS member States was approved. |
| 4 | Preparation of a draft Procedure for compensation of costs associated with the implementation of transit/transmission/movement of electricity through the energy systems of the CIS member States. | 2018-2020 | The unified data exchange layout format for recording interstate electricity flows, developed by the Working Group on Metrological Support for the Electricity 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 management bodies of the CIS member States for use in organizing the recording of interstate electricity flows and the exchange of data on interstate flows. |
| 5 | Harmonization of national legislation in the field of electric power, 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 CIS EES approved Conceptual approaches to technical regulation and standardization in the field of electric power. The Regulation on the Working Group "Updating and harmonization of the regulatory and technical framework for Regulating the Electric Power Industry"was also approved. The Work Plan of this Working Group was approved by the decision of the 51st meeting of the CIS EES. |

# **CASA-1000 project implementation status**

*Project Description*

The CASA-1000 project is the first step towards creating a regional electricity market for Central and South Asia (CASAREM), using the significant energy resources of Central Asia to help reduce the energy deficit in South Asia on a mutually beneficial basis.

It is planned to start delivering electricity under the CASA-1000 project in 2021. It is assumed that the transmission line capacity will be about 6 billion cubic meters. kWh per year.

The project financing process is managed by the World Bank.

The project is divided into two main packages:

* construction of power transmission lines in Kyrgyzstan, Tajikistan, Afghanistan and Pakistan;
* Construction of two-terminal high-voltage DC converter substations in Pakistan and Tajikistan.

The construction period after signing the contract is 42 months (2021).

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

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

**Kyrgyz Republic**

**The State Committee for Industry, Energy and Subsoil Use of the Kyrgyz Republic expects to increase electricity production up to 26 billion kWh under the optimistic scenario and up to 17 billion kWh - under the pessimistic scenario (09.07.2020) until 2030.**

In case of effective implementation of tasks and measures envisaged by the Concept of development of fuel and energy complex of the Kyrgyz Republic until 2030, it is expected to develop the energy infrastructure providing electricity supply taking into account the growth of consumption with an increase in electricity production up to 26 billion kWh under the optimistic scenario and up to 17 billion kWh under the pessimistic scenario (if no new HPPs and Kara-Kechinskaya TPP are built).

It is also expected to:

- solving social problems to improve the reliability of electricity supply to households in remote areas by constructing new sections of substations and transmission lines, as well as introducing sources of autonomous power supply by utilizing the potential of RES;

- meeting the electricity demand of electricity-intensive production of mercury, antimony, cement at existing enterprises, as well as the creation of enterprises - light industry, processing and preparation of agricultural products for export to the EAEU countries by improving energy efficiency and achieving energy savings of 11.1 million tons of fuel equivalent by 2030;

- Ensuring the need for fuel and energy resources to develop the construction of new facilities and expand resort areas, cultural and sports and recreational complexes that meet international standards for the full development of all forms of tourism;

- increasing coal production by 30% by utilizing the significant reserves of the Kavak lignite basin through the creation of a fuel and energy cluster based on the use of the balance reserves of the Kara-Keche lignite deposit in 2020-2025, development of the Uzgen hard coal deposit and development of the Karatube and Kok-Keche areas in 2020-2022. - Karatube and Kok-Kiya, in 2025-2030 Beshterek and in 2026. - Beshterek and in 2026-2028. - Chitti-Aksur and production of hard coal, coking coal and semi-anthracite in Osh oblast, increase of coal production in Zhyrgalan coal deposit through construction of +2100 m horizon of Zhyrgalan Mine OJSC and Zhyrgalan-Dorgokomur LLC in Issyk-Kul oblast, further development of Sulukta lignite deposit in Batken oblast;

- increasing the share of RES from 1.7% to 5% by putting into operation small HPPs with capacity of 71.8 MW in Chui oblast, 33.5 MW in Jalal-Abad oblast, 13 MW in Batken oblast, 7.38 MW in Naryn oblast, 7 MW in Issyk-Kul oblast, 6.2 MW in Osh oblast and 1.6 MW in Talas oblast, which will require $314 mln with specific capex of $2000 thou. per 1 MW;

- development of electrification of transport, creation of enterprises for processing of agricultural products for export to EAEU countries with fulfillment of the Paris Agreement standards on non-exceeding of GHG emissions per capita in the amount of 1.58 tons of CO2/person by 2050 and reduction of energy intensity of GDP by 19% by 2030;

- Increase of labor employment of local population at new energy facilities with creation of mining cluster in Batken and Issyk-Kul oblasts, fuel and energy cluster in Jalal-Abad and Naryn oblasts;

- Increasing economic sustainability and solvency of fuel and energy enterprises with minimization of expenses of electric power enterprises, ensuring transparency of business processes and formation of tariffs by categories of consumers, in parallel with the development of a system of measures for targeted social support of vulnerable segments of the population;

- implementation of an effective HR policy, creation of a system for training and retraining of highly qualified personnel;

- creation of mechanisms to reduce corruption risks in the fuel and energy sector.

In order to overcome the expected risks and threats, it is necessary to carefully study the feasibility of creating a separate sectoral state body authorized in the fuel and energy sector in order to strengthen the state energy policy, increase the responsibility of decision-makers in the energy sector and their authority in the international arena, and create structures responsible for overcoming and minimizing the impact of the identified risks, as well as for the development of state programs and strategies with continuous improvement of human resource capacity

**Republic of Uzbekistan**

**The economy of Uzbekistan is planned to save 3.3 billion kWh of electricity and 2.6 billion cubic meters of natural gas in 2 years due to energy efficiency measures (14.07.2020).**

Such parameters are stipulated by the Decree of the President of the country RP-4779 dated July 10, 2020 "On additional measures to reduce the dependence of economic sectors on fuel and energy products by increasing energy efficiency of the economy and use of available resources".

Energy efficiency or, in other words, rational use of energy resources in the economic and social spheres is an important factor in increasing energy saving and profitability and competitiveness of the production sector, which in turn has a serious impact on energy security, job creation, growth of the population's welfare and overall development of the country.

From August 1, the document establishes a tariff for the guaranteed purchase of electricity from newly commissioned solar, wind and biogas power plants, micro and small hydroelectric power plants (HPPs), including excess electricity produced for their own needs.

It is established that investors for the construction and operation of industrial power plants based on renewable energy sources (RES), with the exception of hydroelectric power plants, shall be identified only through tenders.

The document for the period from July 15 to December 31, 2020 establishes benefits for producers who organized the third (night) shift in the form of applying a reduced coefficient of payments for used electricity.

The possibility of reducing the mandatory prepayment requirement (up to 30%) for natural gas and electricity will not be used for companies with a state share of at least 50%.

The decree approved the target parameters for saving fuel and energy resources in sectors of the economy for 2020-2022, which provide for savings of electricity in the amount of 3.3 billion kW \* h, natural gas - 2.6 billion cubic meters, oil products - 16.3 thousand tons.

The document also approved a roadmap to improve energy efficiency at large enterprises and a schedule of energy audits.

The decree approved the structure and identified sources of financing of the previously established off-budget inter-sectoral Energy Saving Fund, which is part of the Ministry of Energy of the Republic of Uzbekistan.

It was established that the resources of the fund are used to: finance the preparation of feasibility studies for energy efficiency projects, including improving the thermal insulation of buildings and apartment buildings; create thematic training centers; develop relevant startups and participate in the authorized capital of enterprises for the production of renewable energy units, heat pumps, condenser batteries and other products aimed at improving energy efficiency.

The resolution gives a number of instructions to responsible structures, including the Ministry of Energy. In particular, it is ordered to ensure the involvement of leading companies (domestic and international) to conduct energy audits at 285 large industrial enterprises within 2 months, as well as to make a proposal to expand their list.

The document provides for the creation of a unified information system of the Ministry of Energy, which is scheduled to be put into operation by the end of 2021. Based on analytical data obtained from the Unified Information System, a mechanism for mandatory energy audits of enterprises with high energy consumption will be introduced.

**Republic of Turkmenistan**

**Construction of a ring energy system has started in Turkmenistan (23.07.2020).**

Turkmenistan is implementing a large-scale project to create a ring energy system. The general contractor - Concern "Turkmenenergostroy" - has started work on the construction of reinforced concrete foundations of the Akhal-Balkan and Balkan-Dashoguz power transmission lines. At the same time, construction of the Serdar-220 electric substation has started.

The length of the first section will be 450 kilometers. In addition, the builders of the ring energy system will have to lay 560 kilometers of overhead power lines with voltage of 500 kV, two substations with voltage of 500/220/110 kV and two with voltage of 220/110 kV will be put into operation.

As the Concern's specialists explained, in order to speed up the works, the whole route will be divided into several segments, where the contractor's units will simultaneously start installation of high-voltage supports and assembly of transmission lines. The project provides for installation of power transformers, circuit breakers, disconnectors, relay protection and automatics - equipment manufactured according to European standards. Telemechanics, communications and SCADA systems for high-voltage transmission lines and stations will be installed by Turkish company Çalik Enerji.

The construction customer - State Electricity Corporation "Türkmenenergo" - has signed contracts and purchased equipment, materials and vehicles necessary for the construction of high-voltage power lines and stations with the funds of a soft loan allocated by the Asian Development Bank.

Implementation of the large-scale project is aimed at increasing energy efficiency and solving energy saving problems, sustainable socio-economic development of the country's regions and growth of the industry's export potential.

**Republic of Tajikistan**

**Tajikistan sold electricity to Afghanistan and Uzbekistan for $40 mln (28.07.2020).**

However, the decrease in water inflow to the Nurek HPP led to a reduction in electricity exports to Uzbekistan and Afghanistan. Tajik electricity exports for the first six months of this year decreased by 324.9 million kWh compared to last year.

The reason for the reduction is a decrease in water inflow to the Nurek hydroelectric power plant, said Mirzo Ismoilzoda, head of Barki Tojik, at a meeting with journalists.

In six months, 546.6m kWh of electricity was exported to Afghanistan, while 358.3m kWh was exported to Uzbekistan, he said. While 320 MW was exported to Afghanistan daily, the figure has now dropped to 40 MW. Electricity exports have also decreased to Uzbekistan. In general, electricity exports for six months of this year compared to last year decreased by 324.9 million kWh. This is due to reduced water inflow in Vakhsh and redistribution of grids in Afghanistan

Electricity worth over 23 million dollars was exported to Afghanistan and over 7.2 million dollars to Uzbekistan.

The water inflow in the Vakhsh River has decreased by almost 30% over the last three months, which also reduced the water inflow to the Nurek HPP. For the last two days, the water level in the Vakhsh has risen, which will increase the volume of electricity exports.

**Work on the CASA-1000 project in Tajikistan will be completed by the end of 2021 (16.07.2020).**

Construction of power transmission lines under the CASA-1000 energy project in Tajikistan will be completed on time. This was announced by Deputy Minister of Energy and Water Resources Jamshed Shoimzoda at a July 14 press conference in Dushanbe.

The coronavirus pandemic that has swept many countries around the world has not affected the progress of construction work under the CASA-1000 project, the Tajik Energy Ministry said.

"The works are being carried out according to the plan. To date, more than 30% of the necessary construction equipment has been delivered to the Republic of Tajikistan. As agreed with the Ministry of Energy, negotiations between contractor Kalpataru and Nokili TALCO on the purchase of 1,780 kilometers of cable for the amount of 9.7 million TJS," Jamshed Shoimzoda said.

 Implementation of the project of the Tajik section of CASA-1000 is planned to be completed by the end of 2021.

The CASA-1000 project involves supplying electricity from Tajikistan and Kyrgyzstan to Afghanistan and Pakistan. It is expected that 70% of electricity, which will be supplied to Afghanistan and Pakistan, will come from Tajikistan and 30% from Kyrgyzstan.

International financial institutions - the World Bank (WB), the European Bank for Reconstruction and Development (EBRD), the Islamic Development Bank (IDB), the UK government and others - are acting as investors in Tajikistan.

 In particular, the WB will allocate $45 million, the IDB - $70 million, the EBRD - $110 million for the realization of the Tajik section of the project.

Swedish company ABB and Indian company Kalpataru Power Transmission Ltd. are engaged in construction of CASA-1000 facilities in Tajikistan.

**Russian Federation**

**"Green" energy industry in Russia has already provided an increase in investment of 177 billion rubles (29.07.2020).**

The "green" energy industry created in Russia from scratch has already provided an increase in investment of 177 billion rubles, by 2024 the amount of investment will reach 633 billion rubles, the Association for the Development of Renewable Energy reported.

Additionally, investments in the creation of new industrial production facilities for generating equipment for solar, wind power and small hydro power plants under capacity supply agreements (RES PPAs, which guarantee the return of investments through increased payments by consumers) amounted to 40 billion rubles.

From 2014 to 2024, Russia has a program to support "green" energy, including the construction of power plants that are selected through a competitive bidding process. They are guaranteed a return on investment within 15 years with a base yield of 12% per annum, adjusted for the yield of federal loan bonds (OFZ). Currently, a decision has been made to extend the renewable energy support program with certain adjustments until 2035, and new selections are planned.