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**REPORT**

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

**JANUARY-AUGUST 2020**

**MARKET DEVELOPMENT DEPARTMENT**

**October 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 69 508,2 million kWh of electricity in January-August 2020, which is 1.1% 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-August** | **Δ, %** |
| **2019** | **2020** |
| **Kazakhstan** | **Total**  | **68725,2** | **69508,2** | **1,1%** |
| *TPP* | *55236,2* | *54961,8* | *-0,5%* |
| *GTPP* | *5909,9* | *6362,7* | *7,7%* |
| *HPP* | *6923,8* | *6637,2* | *-4,1%* |
| *WPP* | *410,2* | *646,1* | *57,5%* |
| *SES* | *242,9* | *897,4* | *269,5%* |
| *BSU*  | *2,2* | *3,0* | *36,4%* |
| **North** | **Total** | **52621,6** | **52885,5** | **0,5%** |
| *TPP* | *45778,9* | *45648,5* | *-0,3%* |
| *GTPP* | *2000,9* | *2187,3* | *9,3%* |
| *HPP* | *4619,2* | *4418,1* | *-4,4%* |
| *WPP* | *108,5* | *296,7* | *173,5%* |
| *SES* | *111,9* | *331,9* | *196,6%* |
| *BSU*  | *2,2* | *3,0* | *36,4%* |
| **South** | **Total** | **7274,5** | **7641,0** | **5,0%** |
| *TPP* | *4548,4* | *4584,8* | *0,8%* |
| *GTPP* | *139,6* | *116,5* | *-16,5%* |
| *HPP* | *2304,6* | *2219,1* | *-3,7%* |
| *WPP* | *153,1* | *157,3* | *2,7%* |
| *SES* | *128,8* | *563,3* | *337,3%* |
| **Western** | **Total** | **8829,1** | **8981,7** | **1,7%** |
| *TPP* | *4908,9* | *4728,5* | *-3,7%* |
| *GTPP* | *3769,4* | *4058,9* | *7,7%* |
| *WPP* | *148,6* | *192,1* | *29,3%* |
| *SES* | *2,2* | *2,2* | *0,0%* |

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

In January-August 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 and North Kazakhstan regions.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Region** | **January-August** | **Δ, %** |
| **2019** | **2020** |
| 1 | Akmola |  2 824,9  |  2 965,1  | 5,0% |
| 2 | Aktobe |  2 538,4  |  2 661,2  | 4,8% |
| 3 | Almaty |  4 662,1  |  4 792,6  | 2,8% |
| 4 | Atyrau |  3 827,8  |  4 104,0  | 7,2% |
| 5 | East Kazakhstan |  6 457,0  |  6 252,8  | -3,2% |
| 6 | Zhambyl |  1 517,6  |  1 498,4  | -1,3% |
| 7 | West Kazakhstan |  1 460,0  |  1 504,8  | 3,1% |
| 8 | Karaganda |  10 804,8  |  10 949,0  | 1,3% |
| 9 | Kostanay |  566,2  |  700,3  | 23,7% |
| 10 | Kyzylorda |  271,1  |  337,6  | 24,5% |
| 11 | Mangystau |  3 541,3  |  3 372,9  | -4,8% |
| 12 | Pavlodar |  27 275,5  |  27 225,8  | -0,2% |
| 13 | North Kazakhstan |  2 154,8  |  2 131,3  | -1,1% |
| 14 | Turkestan |  823,7  |  1 012,4  | 22,9% |
|  | **Total for RoK** |  **68 725,2**  | **69 508,2** | **1,1%** |

# *Electricity generation by associated generation*

In January-August 2020, electricity production from associated generation totaled 34.5 billion kWh, which is comparable to the same period in 2019 (34.6 billion kWh). Meanwhile, compared to January-August 2019, the share of associated generation increased slightly to 49.7% of the total electricity generation in Kazakhstan.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** |
| **January-August** | **share in the Republic of Kazakhstan, %** | **January-August** | **share in RoK, %** |
| 1 | ERG | **12 603,4** | **18,3%** | **12 655,9** | **18,2%** |
| 2 | Kazakhmys Energy LLP | **4 961,8** | **7,2%** | **4 962,7** | **7,1%** |
| 3 | Kazzinc LLP | **2 057,4** | **3,0%** | **1 944,2** | **2,8%** |
| 4 | Arcellor Mittal JSC | **1 744,1** | **2,5%** | **1 892,1** | **2,7%** |
| 5 | KKS LLP | **4 248,3** | **6,2%** | **4 141,9** | **6,0%** |
| 6 | CAEC | **4 430,3** | **6,4%** | **4 558,5** | **6,6%** |
| 7 | Zhambyl GRES JSC | **1 187,3** | **1,7%** | **1 127,8** | **1,6%** |
| 8 | Oil and gas enterprises | **3 437,6** | **5,0%** | **3 240,4** | **4,7%** |
|  | **TOTAL** | **34 670,2** | **50,4%** | **34 523,5** | **49,7%** |

The volume of electricity production by the energy producing organizations of Samruk-Energy JSC in January-August 2020 amounted to18 625,7mln/kWh, or an increase of -0.6% compared to the same period of 2019.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Δ2020/2019** |
| **January-August** | **share in RoK, %** | **January-August** | **share in RoK %** |  **mln kWh** | **%** |
|  | **Samruk-Energy JSC** | **18 740,7** | **27,3%** | **18 625,7** | **26,8%** | **-115,0** | **-0,6%** |
| *1* |  *AlES JSC* | *3 530* | *5,1%* | *3 488,6* | *5,0%* | *-41,8* | *-1,2%* |
| *2* | *Ekibastuz GRES-1 LLP* | *10 801,2* | *15,7%* | *11 263,0* | *16,2%* | *461,8* | *4,3%* |
| *3* |  *Ekibastuz GRES JSC-2 JSC* | *3 261,9* | *4,7%* | *2 717,7* | *3,9%* | *-544,3* | *-16,7%* |
| *4* |  *Shardara HPP JSC* | *345,7* | *0,5%* | *410,5* | *0,6%* | *64,9* | *18,8%* |
| *5* | *Moinak HPP JSC* | *703,6* | *1,0%* | *641,2* | *0,9%* | *-62,4* | *-8,9%* |
| *6* | *Samruk-Green Energy LLP* | *2,5* | *0,004%* | *2,9* | *0,004%* | *0,43* | *17,4%* |
| *7* | *First Wind Power Station LLP* | *95,4* | *0,1%* | *101,8* | *0,1%* | *6,5* | *6,8%* |

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

# *Electricity consumption by zones and regions*

According to the data of the System Operator, in January-August 2020, there was an increase by 1% in the electricity consumption in the Republic compared to the indicators of January-August 2019. Thus, in the northern zone consumption increased by 1%, western zone by 2%, and in the southern zone by 0.5%.

 *million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Name** | **January- August 2019** | **January-August 2020** | **Δ, million kWh** | **Δ, %** |
| **I** | **Kazakhstan** | **68 557,9** | **69 437,3** | **879,4** | **1%** |
| 1 | Northern zone | 44 958,2 | 45 626,3 | 668,1 | 1% |
| 2 | Western zone  | 8 880,8 | 9 023,3 | 142,5 | 2% |
| 3 | Southern zone | 14 718,9 | 14 787,7 | 68,8 | 0,5% |
|  | ***including by region*** |  |  |  |  |
| 1 | East Kazakhstan  | 6 109,4 | 6 062,9 | -46,5 | -1% |
| 2 | Karaganda  | 11 737,3 | 12 005,1 | 267,8 | 2% |
| 3 | Akmola  | 5 905 | 5 743,6 | -161,4 | -3% |
| 4 | North Kazakhstan | 1 129,4 | 1 055,3 | -74,1 | -7% |
| 5 | Kostanay  | 3 093,9 | 2 942,7 | -151,2 | -5% |
| 6 | Pavlodar  | 12 739,1 | 13 465,8 | 726,7 | 6% |
| 7 | Atyrau  | 4 126,4 | 4 185,8 | 59,4 | 1% |
| 8 | Mangystau  | 3 427,8 | 3 364,3 | -63,5 | -2% |
| 9 | Aktobe  | 4 244,2 | 4 350,9 | 106,7 | 3% |
| 10 | West Kazakhstan  | 1 326,6 | 1 473,2 | 146,6 | 11% |
| 11 | Almaty  | 7 329,8 | 7 174,1 | -155,7 | -2% |
| 12 | Turkestan | 3 363,4 | 3 334,2 | -29,2 | -1% |
| 13 | Zhambyl  | 2 872,8 | 3 174 | 301,2 | 10% |
| 14 | Kyzylorda  | 1 152,9 | 1 105,4 | -47,5 | -4% |

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

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

In January-August 2020 compared to January-August 2019, the index of industrial production amounted to 100.4%. 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 Kostanay region, extraction of iron ore concentrates increased, production of flour, bars and rods of steel, cars and trucks increased (107.2%).

In North-Kazakhstan region there was an increase in extraction of uranium ores, production of unrefined rapeseed oil, processed milk, butter, flour and non-self-propelled freight cars increased (106.8%).

In Nur-Sultan city, production of soft drinks, refined gold, diesel locomotives and railroad cars increased (105.5%).

In Akmola region, production of copper and gold concentrates increased, production of flour, portland cement, gold in gold doré alloy, unprocessed gold and tractors increased (104.9%).

In Almaty region, production of confectionery and chocolate, soft drinks, cigarettes, medicines, assembly panels and instrument panels increased (104.8%).

In Almaty city the production of beer, leather shoes, medicines, cans of ferrous metals and other aluminum metal products increased (103%).

In Karaganda region there was an increase in production of copper and zinc concentrates, production of flat rolled products, refined gold, rough and refined copper increased (102.6%).

In West-Kazakhstan region due to increase in gas condensate production index of industrial production amounted to 102.4%.

In Turkestan region there was an increase in production of processed cotton, oil bitumen, commodity concrete and distribution power boards and boxes (102.2%).

In Zhambyl oblast there was an increase in the extraction of gold-bearing ores and phosphate raw materials, production of phosphorus, orthophosphoric acid and phosphate fertilizers increased (101.6%).

In Atyrau region due to the increase in crude oil production, the index of industrial production amounted to 100.7%.

In Pavlodar region, production of copper concentrates increased, production of part of railroad locomotives, streetcar motor cars and rolling stock increased (100.5%).

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 98.5%.

In Shymkent city due to reduction of production of kerosene, diesel fuel, fuel oil and vacuum gasoil the index of industrial production amounted to 98.2%.

Index of industrial production in Aktobe region amounted to 97.1%, Mangistau region 94.1% and Kyzylorda region 88.5% mainly due to a decrease in crude oil production.

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

# *Electricity consumption by large consumers in Kazakhstan*

In January-August 2020, electricity consumption by large consumers decreased by 2.5% compared to the same period in 2019.

*million kWh*

|  |  |  |
| --- | --- | --- |
| **№** | **Consumer** | **January-August** |
| **2019** | **2020** | **Δ, %** |
| 1 | Arcelor Mittal Temirtau JSC | 2 450,0  | 2 484,4 | -1% |
| 2 | AZF (Aksu) TNK Kazchrome JSC | 3 878,2  | 3 733,8 | 4% |
| 3 | Kazakhmys Smelting LLP  | 800,9  | 793,1 | 1% |
| 4 | Kazzinc LLP | 1 892,7  | 1 916,7 | -1% |
| 5 | Kazzinc JSCSokolovsko-Sarbay State Enterprise | 1 107,8  | 1 187,6 | -7% |
| 6 | Kazakhmys Corporation LLP  | 854,0  | 807,0 | 6% |
| 7 | AZF (Aktobe) TNK Kazchrome JSC | 2 138,1  | 2 101,8 | 2% |
| 8 | RSE Kanal im. Satpayev | 157,4  | 141,4 | 11% |
| 9 | Kazphosphate LLP | 1 457,5  | 1 428,1 | 2% |
| 10 | NDFZ JSC (part of Kazphosphate LLP) | 1 280,5  | 1 248,4 | 3% |
| 11 | Taraz Metallurgical Plant LLP | 152,3  | 111,4 | 37% |
| 12 | Ust-Kamenogorsk Titanium and Magnesium Combine JSC | 528,2  | 564,7 | -6% |
| 13 | Ust-Kamenogorsk Titanium and Magnesium Combine JSCTengizchevroil | 1 227,1  | 1 258,0 | -2% |
| 14 | JSC " PAZ "(Pavlodar Aluminum Plant) | 637,0  | 630,3 | 1% |
| 15 | JSC " KEZ "(Kazakhstan Electrolysis Plant) | 2 506,9  | 2 498,5 | 0% |
| 16 | Temirzholenergo LLP | 927,2  | 1 037,9 | -11% |
| 17 | JSC "KEGOC" | 2 868,3  | 3 487,9 | -18% |
| **Total** | **23 583,5** | **24 182,6** | **-2,48%** |

# **Coal**

# *Steam coal production in Kazakhstan*

According to information from the Statistics Committee of the Ministry of Energy of Kazakhstan, Kazakhstan produced 69 037 mln tons of hard coal in the period January-August 2020, which is equal to the same period in 2019 (69 098 mln tons).

|  |  |  |  |
| --- | --- | --- | --- |
| **№**  | **Oblast** | **January-August** | **Δ, %** |
| **2019**  | **2020**  |
| 1 | Pavlodarskaya | 43 302,2 | 42 788,1 | 99% |
| 2 | Karagandinskaya | 20 999,8 | 21 725,7 | 103% |
| 3 | East Kazakhstan | 4 599,8 | 4 445 | 97% |
|  | **Total in RoK** | **69 098,3** | **69 036,7** | **100%** |

# *Coal production by Samruk-Energy JSC*

In January-August 2020, Bogatyr Komir LLP produced 27 942 thousand tons, which is 1.5% more than in the corresponding period of 2019 (28 369 thousand tons).

# *Coal sales by Samruk-Energy JSC*

In January-August 2020, 27 625 thousand tons were sold, including:

- 20 999 thousand tons were delivered to the domestic market of the Republic of Kazakhstan, which is 0.9% less than in the corresponding period of 2019 (21 185 thousand tons);

- exported to Russia – 6 626 million tons, which is 7.4% more than in the corresponding period of 2019 (7 159 thousand tons).

*thousand tonnes*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Region** | **Sales volume, thousand tonnes** | **Δ, %** |
| **January-August 2019** | **January-August 2020** |
| Total exports to the domestic market of the Republic of Kazakhstan | **21 185** | **20 999** | **99,1%** |
| Total exports to the Russian Federation | **7 159** | **6 626** | **92,6%** |

As per the figures for January-August 2020, as compared to the same period in 2019, the Company has seen an increase in coal sales by 2.5%.

# **Renewable energy sources**

The volume of electricity produced by renewable energy facilities (SES, wind farms, BGS, small hydroelectric power plants) in January-August 2020 amounted to 2 107.9 million kWh. Compared to January-August 2019 (1 233.9 million kWh), the increase was 70.8%.

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Deviation 2020/2019** |
| **January-August** | **share in the Republic of Kazakhstan, %** | **January-August** | **share in the Republic of Kazakhstan, %** |  **mln kWh** | **%** |
|  | **Total output in the Republic of Kazakhstan** | **68725,3** | **100%** | **69508,1** | **100,0%** | **782,8** | **1,1%** |
| **I** | **Total RES in the Republic of Kazakhstan, including by zones**  | **1233,9** | **1,8%** | **2107,9** | **3,0%** | **874,0** | **70,8%** |
| 1. | *Northern Zone* | *336,4* | *27,3%* | *721,1* | *34,2%* | *384,7* | *114,4%* |
| 2. | *Southern zone* | *746,7* | *60,5%* | *1138,8* | *54,0%* | *392,1* | *52,5%* |
| 3. | *Western Zone* | *150,8* | *0,0%* | *248,0* | *11,8%* | *97,2* | *0,0%* |
| **II** | **Total RES in the Republic of Kazakhstan, including by type**  | **1233,9** | **1,8%** | **2107,9** | **3,0%** | **874,0** | **70,8%** |
| 1. | *SES* | *243,0* | *19,7%* | *951,0* | *45,1%* | *708,0* | *291,4%* |
| 2. | *Wind farms* | *410,2* | *33,2%* | *643,6* | *30,5%* | *233,4* | *56,9%* |
| 3. | *Small hydroelectric* | *578,5* | *46,9%* | *510,3* | *24,2%* | *-68,2* | *-11,8%* |
| 4. | *Biogas plants* | *2,2* | *0,2%* | *3,0* | *0,1%* | *0,8* | *0,0%* |

In January-August 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-August** | **share in the Republic of Kazakhstan, %** | **January-August** | **share in the Republic of Kazakhstan, %** | **mln kWh%** | **%** |
|  | ***Electricity production in the Unified Energy System of the Republic of Kazakhstan*** | **68725,3** | **100,0%** | **69508,1** | **100%** | **782,8** | **1,1%** |
| 1. | Production of "clean" electricity (RES + Large hydroelectric power plants)  | *7355,3* | *10,7%* | *8149,2* | *11,7%* | *793,9* | *10,8%* |
| 2. | Production of "clean" electricity (RES excluding Large hydroelectric power plants) | *1233,9* | *1,8%* | *2107,9* | *3,0%* | *874,0* | *70,8%* |

Electricity generation by RES facilities of Samruk-Energy JSC (SES, WES, small HPPs) for January-August 2020 amounted to 221.4 mln kWh or 10.5% of the total volume of electricity generated by RES facilities, which is lower by -5.7% compared to the same period of 2019 (for January-August 2019, RES generation of the Company amounted to 234.7 mln kWh, and the share of RES of the Company was 19%).

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-August 2020 decreased by -4% (1992.1 mln. kWh) compared to the same period of 2019. (2,074.5 million kWh).

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Deviation 2020/20/2019.** |
| **January-August** | **share in the Republic of Kazakhstan, %** | **January-August** | **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)  | 2074,5 | 28,2% | 1992,1 | 24,4% | -82,4 | -4,0% |
| 2. | Production of "clean" electricity by JSC "Samruk-Energy" (SES, wind farms and small hydroelectric power plants), incl.: | 234,7 | 19% | 221,4 | 10,5% | -13,3 | -5,7% |
| 3. |  *Cascade of small hydroelectric power plants of "AlES" JSC* | *136,8* | *11,1%* | *116,8* | *5,5%* | *-20* | *-14,6%* |
| 4. | *Samruk-Green Energy LLP* | *2,4* | *0,2%* | *2,8* | *0,1%* | *0,4* | *17%* |
| 5. | *First Wind Power Station LLP* | *95,5* | *7,7%* | *101,8* | *4,8%* | *6,3* | *6,6%* |

# **Centralized electricity trading by KOREM JSC**

*(Information provided by KOREM JSC)*

*General results of the trades*

According to the results of centralized trading in electricity in August 2020, 2 deals were concluded in the volume of 3,456 thousand kWh for a total amount of 20,673.6 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 - 1 deal was concluded in the volume of 2,280 thousand kWh for the total amount of 19,380 thousand tenge (excluding VAT). The minimum price at spot trades in "day-ahead" mode was 8.5 tenge/kWh (excluding VAT), the maximum price was 8.5 tenge/kWh (excluding VAT);

- spot trades "during operational days" - no deals were concluded.

- trades in electricity for medium- and long-term periods - 1 deal was concluded in the volume of 1,176 thousand kWh for a total amount of 1,293.6 thousand tenge (excluding VAT). The minimum and maximum price for this type of centralized bidding was 1.1 tenge/kWh (excluding VAT).

For the same period of 2019, the total volume of centralized bidding amounted to 930,073 thousand kWh. The table below shows the dynamics of prices of transactions concluded at centralized trades in August 2019-2020.

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

|  |  |  |  |
| --- | --- | --- | --- |
| **August** | **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** | **6,5** | **7,31** | **1,1** | **8,7** | **8,4** | **8,4** |
| **2020** | **8,5** | **8,5** | **1,1** | **1,1** | **-** | **-** |

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

According to the results of spot trades held in August 2020, 1 deal was concluded in the volume of 2280 thousand kWh for a total amount of 19,380 thousand tenge (excluding VAT). The minimum price at spot trades in the "day-ahead" mode was 8.5 tenge/kWh (excluding VAT), the maximum price was 8.5 tenge/kWh (excluding VAT).

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



The table shows that the total demand amounted to 8280 thousand kWh, while the supply amounted to 7800 thousand kWh. The unsatisfied volume of demand in August 2020 amounted to 6000 thousand kWh, and the unsatisfied supply amounted to 5520 thousand kWh. In the process of spot trading, the total number of bids accepted into the trading system was -8, including 5 bids from buyers and 3 bids from sellers.

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

According to the results of the trades held in August 2020, no deals were concluded. According to the results of spot trades held in August 2019, 48 transactions in the volume of 432 thousand kWh were concluded. The minimum and maximum price for this type of centralized trading was 8.4 tg/kWh (excluding VAT).

# ***Results of bidding for medium- and long-term period***

According to the results of bidding for medium- and long-term periods in August 2020, 1 deal was concluded in the volume of 1,176 thousand kWh for a total amount of 1,293.6 thousand tenge (excluding VAT). The minimum and maximum price for this type of centralized bidding was - 1.1 tenge/kWh (excluding VAT). The transaction was registered based on the results of centralized trading in electricity with a delivery period of one week.

Compared to the same period of 2019 in August 2020, there was a 686-fold decrease in the volume of trades for the medium- and long-term period.

In August 2019, 45 transactions with the volume of 806,616 thousand kWh were concluded in the bidding for the medium- and long-term period. The minimum price for this type of centralized bidding was 1.1 tg/kWh (excluding VAT), the maximum price was 8.7 tg/kWh (excluding VAT).

# **Export-import of electric energy**

In January-August 2020, the main direction of electricity export-import of the RK was the Russian Federation (export to the Russian Federation – 685.3 mln kWh, import from the Russian Federation –643.4 mln kWh). KEGOC – 758.3 mln kWh in order to balance electricity production-consumption. Electricity import from the Russian Federation in the reporting period in the amount of 588.5 mln kWh was carried out in order to balance production-consumption of electricity.

million kWh

| **Name** | **January-August** | **Δ 2020/2019гг.** |
| --- | --- | --- |
| **2019** | **2020** |  **mln kWh** | **%** |
| **Kazakhstan's exports** | **4 017,8** | **1 144,0** | **-2 873,7** | **-71,5%** |
| **to Russia** | *4 014,9* | *682,3* | *-3 332,5* | *-83,0%* |
| **to Central Asian ECO** | *2,9* | *461,7* | *458,8* | *15755%* |
| **Kazakhstan's imports** | **929,1** | **1 073,1** | **144,0** | **15,5%** |
| **from Russia** | *913,6* | *758,3* | *-155,3* | *-17,0%* |
| **from Central Asian ECO** | *15,5* | *314,8* | *299,4* | *1936,6%* |
| **Balance-flow " + "deficit," - " excess** | **-3 088,7** | **-70,9** | **3 017,8** | **-97,7%** |

# **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 August 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 August 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 (August 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 August 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**

**Overhaul of overhead lines with a total length of 25 km is planned for 2020 (09.07.2020)**

In 2020 according to the plan on 25 km of overhead lines and 12 auxiliary stations should carry out major repairs. This was announced on July 9 by the director of the Naryn branch of the National Electric Grid of Kyrgyzstan, Zholdosh Ibraev, during a broadcast on the NESC website.

According to him, at 12 auxiliary stations and 1 thousand 55 km of overhead lines should make current repair work. At the moment, construction works are also underway, 6 surge arresters of a new type with 110 kV voltage are installed.

As he said, starting from 2017 until 2021, works on replacement of porcelain insulators with glass insulators are carried out on a planned basis. In 2020, according to the plan, 7.5 thousand porcelain insulators should be replaced, of which 3.7 thousand have been replaced in 6 months.

At the moment, construction of the service building at the Ugut auxiliary station has started. In 2020 on the basis of the Ural automobile base were provided with an autohydraulic elevator. In power grids, insulators and overhead lines with high voltage are considered the most important elements, he said.

"Now active work is underway to prepare for the fall and winter period, there is no lagging behind the plan," he concluded.

**For June, electricity losses in the energy system of the Kyrgyz Republic amounted to more than 96 million kWh - KERC (25.07.2020)**

In June, electricity losses in the Kyrgyz energy system amounted to 96 million 590,179 thousand kWh, the Kyrgyz Energy Settlement Center (KERC) reports.

A total of 884 million 710,604 thousand kWh of electricity was generated in the Kyrgyz energy system in June.

Of this, JSC "Electric Power Plants" generated 871 million 726,102 thousand kWh, other suppliers (Small HPPs) - 12 million 984,502 thousand kWh.

Kyrgyzstan's networks received 876 million 161,309 thousand kWh of electricity.

President S. Jeenbekov approved amendments providing for Kyrgyzstan's inclusion in the EAEU interstate electricity transmission system

August 06, 2020.

President Sooronbai Jeenbekov signed the law "On ratification of the Protocol on Amendments to the Treaty on the Eurasian Economic Union of May 29, 2014 in connection with the accession of the Kyrgyz Republic, signed on May 29, 2019 in the city of Nur-Sultan". This was reported on August 5 by the press service of the presidential staff.

The law was adopted by the Jogorku Kenesh of the Kyrgyz Republic on June 25, 2020.

The Protocol amends the Methodology for the implementation of interstate transmission of electric energy (capacity) between the EAEU member states (annex to the Protocol on ensuring access to the services of natural monopolies in the electricity sector, including the basis of pricing and tariff policy), which is Annex No. 21 to the EAEU Treaty of May 29, 2014).

The Protocol introduces relevant amendments providing for the inclusion of the Kyrgyz Republic in the system of interstate transmission of electricity within the Union and additions defining the procedure, principles and rules of access to the services of domestic entities of natural monopolies in the electricity sector, including the basis of pricing and tariff policy.

The amendments are aimed at forming a regulatory framework for the common electric power market of the EAEU, which, according to the plan approved by the decision of the Supreme Eurasian Economic Council of December 20, 2019, will start functioning in 2025.

The law comes into force from the day of its official publication.

**For half a year 39 transformer substations with voltage of 10/4 kV were put into operation in Kyrgyzstan (07.08.2020)**

For 6 months of 2020, 39 complete transformer substations with voltage of 10/4 kV were put into operation in Kyrgyzstan, power lines with voltage of 0.4 kV - 23.18 kilometers, 6-20 kV - 16.67 kilometers. This is stated in the materials of the National Statistical Committee.

For this period, the volume of disbursed funds directed to the construction and reconstruction of facilities for the provision of electricity, gas, steam and conditioned air, compared to January-June 2019 increased by 1.6%, amounting to 1.8 million soms.

At the same time, construction was carried out mainly at the expense of direct foreign investments, funds of enterprises and organizations, foreign loans, as well as foreign grants and humanitarian aid - 99.6%.

**It remains to select trading platforms and test the technical basis of the common energy market - EEC (09.08.2020)**

The full-fledged launch of the Union's EDM can lead to an increase in the volume of mutual trade in electricity, will create prerequisites for strengthening the economies of the EAEU countries. This was stated by Emil Kaikiev, member of the Board (Minister) for Energy and Infrastructure of the EEC.

The general plan of the implemented measures was approved by the heads of the EAEU member states back on December 20, 2019. It is considered to be one of the main ones in terms of the formation of a common electricity market. This document sets deadlines for the adoption of various rules and regulations, as well as organizational measures. It remains to select trading platforms and test the technological basis of the common market.

However, in the process of power industry integration it is important to optimize the sequence of processes as much as possible. For this purpose, the intermediate stages of development and approval of draft documents have been defined. The latest proposed draft roadmap is a document with a specified timeframe for approval by the advisory committee and regulatory impact assessment.

The countries have significantly advanced in the development of draft rules for determining and distributing the capacity of interstate power transmission lines.

**Kyrgyzstan will take back electricity from Kazakhstan from September 20 to January 10 as part of the commodity exchange between the countries, - GPKEN (23.08.2020)**

Tazabek - Kyrgyzstan will take back electricity from Kazakhstan from September 20 to January 10 within the framework of commodity exchange between the countries. Emil Osmonbetov, Chairman of the State Committee for Industry and Subsoil Use, said this during a live broadcast of Birinchi Radio.

According to him, the commodity exchange with Kazakhstan to date is carried out within the framework of the order, was launched on June 24 and should be completed on August 21.

To date, 292 million kWh have been supplied, we will bring it to 300. We will take back this volume at a convenient time for us, that is, in the fall period - from September 20 to November 10.

**SCPEN informed on the progress of implementation of 4 energy projects: 2 phases of rehabilitation of Toktogul HPP, reconstruction of At-Bashi HPP and "CASA-1000" (24.08.2020 г.)**

Implementation of 4 projects in the energy sector continues in the fuel and energy sector, reported in the State Committee for Industry, Energy and Subsoil Use.

1. Project "Rehabilitation of Toktogul HPP Phase 2". In March 2020, the equipment - Cranes for the upper embankment arrived. The cargo is located at the Toktogul HPP. Due to the coronavirus pandemic, the arrival of the Chief Engineer for the installation of the Upstream Crane has been postponed at this time until the pandemic situation is mitigated and the borders are opened for human movement.

2. Toktogul HPP Rehabilitation Phase 3 Project. A tender was issued on March 10, 2020 for consulting services for project supervision. By April 8, 2020, expressions of interest were received from 19 companies. On May 22, the evaluation of the bids received was completed, resulting in the preparation of a shortlisted tender committee minutes. Conditional approval was received from ADB on May 28.

3. On the project "Reconstruction of At-Bashinsk HPP" by now the installation works of GA generator #3 on water supply system, control cabinet, fire extinguishing system, braking, excitation, control cables, top slabs, repair of disk gate have been completed. Work has also begun on repair of the GA generator #4 suction pipe gate, dehumidification system, T-1 transformer and T-1 fire suppression system.

4. Under the CASA-1000 project, the route of 125 and 325 kilometers overhead power lines was approved on the terrain map. In addition, the route of overhead power line 125 with coordinates of supports has been agreed with local administrations. At the moment the contracting company is designing the design and type of supports in accordance with the technical specifications of the tender documentation. Testing of two types of supports has been carried out and work is underway to prepare the remaining type tests of supports, wire, fiber optic cable, insulators and other equipment.

In addition, the draft Regulation "On the Conditions and Procedure for the Implementation of Activities on Generation and Supply of Electric Power Using Renewable Energy Sources" is currently being prepared for approval. At the final stage there is a project on amendments to some decisions of the RPC in the field of granting land plots for construction of power plants using renewable energy sources"

In addition, the issue of acceptance of completed construction of RES facilities and their further connection to the national power grids of energy companies has been resolved, i.e. a unified approach and the same acceptance procedure has been chosen, in accordance with the Regulation "On the procedure for issuance of documents for design, construction and other modifications of real estate objects and conformity assessment of commissioned completed construction objects in the Kyrgyz Republic".

**Republic of Tajikistan**

**Tajikistan exported electricity worth 40 million dollars (14.07.2020)**

Since the beginning of this year, more than 23 million dollars worth of electricity has been exported to Afghanistan

Tajikistan exported about 912.4 million kWh of electricity to neighboring countries for six months of the current year, First Deputy Minister of Energy and Water Resources of the republic Jamshed Shoimzoda said.

The deputy minister noted that this is 345 million kWh less than the indicator of the same period of 2019.

According to him, most of the mentioned volume of electricity was exported to Afghanistan.

A total of 10.3 billion kWh of electricity was produced in the country in the first half of the year, which is 112 million kWh more than in the same period last year.

The total amount received for the export of electricity in the reporting period amounted to 40 million dollars. Electricity worth over 23 million dollars was exported to Afghanistan and 7.2 million dollars to Uzbekistan.

Earlier it was reported that Tajikistan for the first five months of this year reduced electricity exports to neighboring countries by 40%.

Meanwhile, it was previously reported that Tajikistan plans to increase electricity production. Thus, in 2020 Tajikistan intends to increase electricity production to 21 billion kWh.

**Tajikistan reduced the volume of electricity exports to Afghanistan and Uzbekistan (27.07.2020)**

Tajikistan's electricity exports to Afghanistan have been reduced to 40 MW. This was announced by Mirzo Ismoilzoda, head of Barki Tojik UAHC, at a meeting with journalists in Dushanbe on Monday. Electricity exports to Uzbekistan have also decreased, he said. This is due to reduced water inflow on the Vakhsh River and redistribution of grids in Afghanistan.

Water inflow has decreased by nearly 30%, according to the agency. If 320 MW were exported to Afghanistan daily, today this figure has decreased to 40 MW. For the last two days, the water level on the Vakhsh River has increased, which will increase the volume of electricity exports. The reduction of electricity supply to Uzbekistan began on July 16.

Afghanistan exported 546.6 million kWh of electricity in six months. This figure to Uzbekistan amounted to 358.3 million kWh.

**Tajikistan will receive another 18.6 million euros for the construction of the Sebzor HPP (23.07.2020)**

The Ministry of Economic Development and Trade of Tajikistan, as co-chair of the Intergovernmental Commission of Tajikistan with the European Union, Germany and Switzerland, has raised $55.2 million for the construction of the Sebzor HPP and its energy infrastructure in the Roshtal district of GBAO, with a capacity of 11 MW.

On July 22 this year, Minister of Economic Development and Trade of RT Zavki Zavkizoda signed a trilateral grant agreement with the German Development Bank for the construction of Sebzor HPP in the amount of 18.6 million euros, which is a grant provided by the European Union.

As the press service of the Ministry of Economic Development recalls, on August 2, 2019, the governments of Tajikistan and Germany signed an Agreement on Financial Cooperation, according to which Germany provided a grant of 17 million euros for the construction of Sebzor HPP.

Also, on December 2, 2019, the governments of Tajikistan and Switzerland signed a grant agreement for $9.55 million to finance the construction of the Sebzor-Khorog 110 kV transmission line, 110 kV open switchgear, and climate change mitigation measures.

At the same time, the World Bank allocated a grant of $1.9 million to prepare a feasibility study of the 110 kV Khorog-Ishkashim transmission line and $3 million was allocated by the United States Agency for International Development (USAID) to conduct the necessary studies and increase the capacity of Pamir Energy.

An agreement was also signed on the allocation of 1 million euros by Germany to Tajikistan to cover the needs of the republic in the fight against coronavirus. The funds will be allocated by the German Development Bank - KfW.

Within the framework of this ceremony, an agreement was also signed on granting a grant of 1 million euros for medical purposes, including training of medical personnel in preventing the spread of COVID-19.

Over 1.3 billion somoni (29.07.2020) spent on Rogun hydroelectric power plant in six months of this year

Over 1.3 billion TJS ($127.7 million) was spent on the Rogun hydroelectric power plant project in the first six months of this year. Tajik Finance Minister Faiziddin Kakhkhorzoda said this at a meeting with journalists.

According to him, about 1 billion 297.3 million TJS was allocated from the state budget and 19.7 million TJS from the remaining proceeds from the sale of government bonds (Eurobonds).

Faiziddin Kahkhorzoda also said that the project will be financed within the funds provided by the state budget for the current year. It is envisaged to allocate 2.1 billion somoni for this purpose this year.

"The reduction of minor expenses in the construction sphere from the state budget this year will amount to 789 million TJS. These funds will be consolidated and directed to other expenditures. If necessary, these funds will be used to continue the construction of Rogun HPP," the minister said.

The head of the Ministry of Finance also commented on the maintenance of government bonds (Eurobonds), the total amount of which is $500 million. Payment on Eurobonds is made annually in March and September. For the current year, $34 million will be spent on servicing Eurobonds, half of which has already been paid.

"There is no question of restructuring the payment on Eurobonds. In addition, this process will take a long time," - said Faiziddin Kahkhorzoda.

Recall that in 2017 Tajikistan put up for sale securities worth $500 million to raise funds for the completion of Rogun HPP on a par with the state financing of the facility.

Government bonds of the Republic of Tajikistan by type of investors were sold to fund managers (85%), hedge funds (9%), banks and other financial organizations (6%).

Geographically, the bonds were purchased by investors from the United States (38%), the United Kingdom (24%), European Union countries (35) and Asia (3%). Tajikistan has issued 10-year bonds worth $500 mln. and the maturity schedule of these securities is expected to start from 2025.

According to the Ministry of Finance, the amount of funds raised through the sale of Rogun HPP shares within the country amounted to 980 million TJS, which was spent on purchasing equipment for the HPP.

**Tajikistan introduces energy limit (29.07.2020)**

Tajikistan has introduced a restriction on electricity supply. This is stated in the government's address to the people, published on the official website of the country's president.

The appeal begins by pointing out the achievements in recent years in the energy sector, and then it is already said why the restrictions are introduced.

"In the fall and winter of 2019-2020, too little snow fell in the formation zone of the Vakhsh and Panj river beds, which amounted to 50 percent of the volume of previous years. This situation in Tajikistan occurred for the first time. Today, the water in the bed of the Panj River is 2 thousand cubic meters less than in previous years, including 800 cubic meters less in the Vakhsh River, that is, by 50 percent. This volume is a clear sign that there are too few snow reserves in the mountains," the appeal says.

It is further emphasized that "today the water reserves in the Nurek reservoir are 17 meters less than last year. If this situation continues, the water reserves in the reservoir will decrease, and serious problems will arise in the winter period to provide electricity to the population and sectors of the national economy".

The government asks the population to use electricity rationally, in order to avoid difficulties in winter.

"In this regard, the Government of the Republic of Tajikistan appeals to the population of the country and asks to correctly perceive the restriction imposed by the company "Barki Tojik" for the sole purpose of reserving water in the Nurek reservoir," the appeal says.

It goes on to say that "today we were even forced to stop supplying electricity to the Republic of Uzbekistan and the Islamic Republic of Afghanistan before the deadline established by international treaties".

The Government of the Republic of Tajikistan appeals to all residents of the country with a request to treat this decision with understanding. In the current situation, this is the only way for us to avoid problems in the winter period.

The government claims that it is taking all necessary measures to ensure that the population of the country does not face problems in the fall-winter period.

The statement did not specify at what time of day the power cuts were planned.

**"Barki Tojik prematurely terminates electricity export contract to Uzbekistan and Afghanistan (04.08.2020)**

Barki Tojik" does not impose restrictions on electricity consumption in Tajikistan and hopes that the reservoir of the Nurek HPP will be filled with enough water to avoid the introduction of energy limits.

As NIAT Khovar reports with reference to Nozirjon Yedgori, spokesman for the state energy holding Barki Tojik, "no restrictions on electricity supply have been introduced in Tajikistan until today.

He noted that Tajikistan is indeed experiencing low water levels, especially in the Vakhsh River, which is the main source of water for electricity generation in the country. This is due to low snow reserves at the sources of the country's rivers. In order to provide the population and sectors of the country's national economy with electricity on behalf of the government of Tajikistan, Barki Tojik OAHC has early terminated the contract of exporting electricity to Uzbekistan and Afghanistan.

"Fortunately, the bed of the Vakhsh River today facilitates the daily inflow of water and its reservation in the necessary volumes in the reservoir of the Nurek HPP for the upcoming winter. Barki Tojik specialists are confident that the reservoir will be filled with water up to the required level by mid-September and there will be no need to impose restrictions on electricity supply to the country's residents," Nozirjon Yodgori said.

Along with this, it is very important that the population of the Republic of Tajikistan in response to the appeal of the Government of the Republic of Tajikistan to the people of the country to use electricity rationally.

"Each kilowatt/hour of saved electricity will allow to provide the population with electricity in the upcoming winter period", - said in conclusion the official representative of OAHC "Barki Tojik".

**The Nurek HPP reservoir. 15 meters left to the required mark (11.08.2020)**

In Tajikistan in the first ten days of August 2020, the water level in the Nurek HPP reservoir was just over 895 meters above sea level, which is 13.5 meters lower compared to the same period in 2019.

To fully fill the Nurek HPP reservoir, the water level should reach the 910 meter mark. Thus, there are 15 meters left to the required mark. However, power engineers note that the reservoir will be filled by early October.

As "Avesta" was informed in the energy sector of the republic, the flow of water on the Vakhsh River near the Nurek reservoir the day before was 1,384 cubic meters per second, which is also 545 cubic meters less than the same period last year.

According to the source, more than 47.7 million kWh of electricity is generated every day on average in the country.

Earlier, Barki Tojik reported that the export of electricity to Afghanistan and Uzbekistan was stopped due to low water levels. This is due to reduced water inflow on the Vakhsh River and redistribution of networks in Afghanistan.

According to the agency, 546.6 million kWh of electricity was exported to Afghanistan over six months. The figure to Uzbekistan amounted to 358.3 million kWh.

**In Tajikistan, an average of 47 million kWh of electricity is produced every day (14.08.2020 г.)**

In Tajikistan, in the first ten days of August 2020, the water level in the Nurek HPP reservoir was just over 895 meters above sea level, which is 13.5 meters lower compared to the same period in 2019.

To fully fill the Nurek HPP reservoir, the water level must reach the 910 meter mark. Thus, there are 15 meters left to the required mark. However, power engineers note that the reservoir will be filled by early October.

Water flow in the Vakhsh River near the Nurek reservoir on August 11 was 1,241 cubic meters per second, which is also 707 cubic meters less than the same period last year.

Every day in the country, on average, more than 46.5 million kWh of electricity is generated.

Due to low water, the export of electricity to neighboring countries - Afghanistan and Uzbekistan - has been stopped. This is due to reduced water inflow on the Vakhsh River and redistribution of grids in Afghanistan.

In six months, 546.6 million kWh of electricity was exported to Afghanistan. The indicator of electricity export to Uzbekistan amounted to 358.3 million kWh.

Electricity production in Tajikistan decreased by 1.5% (21.08.2020)

Tajikistan has reduced the production and export of electricity. The republic's energy sector told Avesta that in the first seven months of 2020, the country produced 12 bln. 49.8 million kWh of electricity, down by 189.3 million kWh or 1.5% compared to the same period last year.

According to the source, electricity exports also decreased during the period. Compared to January-July 2019, the amount of electricity sales to neighboring countries decreased by more than $13.5 million or 23.4% and amounted to over $44.4 million. At the same time, it is not reported on the volume of electricity exports for seven months.

Earlier, Mirzo Ismoilzoda, head of Barki Tojik energy holding Mirzo Ismoilzoda confirmed that since July 27 the volume of Tajik electricity exports to neighboring Afghanistan has decreased. The reason was a decrease in water inflow in the Vakhsh River, he said at the time.

However, in early August, in order to provide the population and sectors of the country's national economy with electricity on behalf of the Tajik government, Barki Tojik prematurely terminated electricity export contracts with Uzbekistan and Afghanistan.

According to the source, Tajikistan is indeed experiencing low water levels on an annual average basis, especially on the Vakhsh River, which is the main source of water for electricity generation in the country. This is due to low snow reserves at the source of the country's rivers.

According to Barki Tojik, 546 million kWh of electricity was exported to Afghanistan in the first half of this year, while 358 million kWh was exported to Uzbekistan.

**Afghanistan and Uzbekistan agreed to sign an agreement on electricity supplies (08/28/2020)**

Acting Afghan Foreign Minister Muhammad Hanif Atmar held talks with his Uzbek counterpart Abdulaziz Kamilov in Tashkent, the press service of the Afghan Foreign Ministry reported.

"The parties agreed to sign an agreement on electricity supplies between the Afghan energy company Breshna and the Uzbek Ministry of Energy," the report said. It is noted that the parties also discussed issues of expanding cooperation in trade and transportation.

It is noted that Kamilov spoke about the important role of Afghanistan in Uzbekistan's foreign policy, emphasizing Uzbekistan's support for the Afghan-led peace process, as well as the position of the government of the Islamic Republic of Afghanistan. Kamilov expressed hope for the immediate start of negotiations between the Islamic Republic of Afghanistan and the Taliban.

In his turn, Atmar thanked Uzbekistan for supporting the peace process and the position of the Islamic Republic, and said it is necessary to start peace talks as soon as possible and preserve the republican system, as well as the achievements of the last 19 years.

He assured that the leadership of the Islamic Republic of Afghanistan is determined to strengthen relations with Uzbekistan.

Uzbekistan intends to launch full-fledged operation of energy ring in Central Asia by connecting Tajikistan (28.08.2020)

Uzbekistan intends to resume full operation of the unified energy ring in Central Asia by connecting Tajikistan and, in the future, Turkmenistan to it, Podrobno.uz reports citing Deputy Energy Minister Sherzod Khodjaev.

"Recently we have intensified regional integration in the electricity sector. In summer time we traditionally work with our neighbors to purchase and sell electricity, but in the last year and a half we have started to cooperate year-round. This happened because the energy structures of the countries in the region have come to understand what, who needs it and when. In this regard, Uzbekistan benefits from its position in the heart of Central Asia," the deputy minister told Podrobno.uz correspondent.

According to him, export-import operations within the so-called unified energy ring in Central Asia will increase from year to year.

"By 2030, we plan that these figures will at least double, and now I see no reason for this not to happen, as the operation of the ring will provide a great benefit to all participants of the project," the interlocutor said.

Kazakhstan, Uzbekistan and Kyrgyzstan are now fully operational within the energy ring. Now, Khodzhayev added, work is underway to connect Tajikistan, which is scheduled for completion in 2021.

"Another important point is the full-fledged inclusion of the Tajik energy system. Now we do not work with them in parallel mode, that is, we import electricity only seasonally - from May to August. As soon as the ring is fully restored, we will be able to work with Tajikistan all year round," Khodzhayev emphasized.

He also added that the nearest plans include the construction of a new power line to the border with Tajikistan.

"We are currently studying the proposals that were submitted as part of the tender for this project. This year we expect to start construction of the line, there is serious work to be done there, as the territory through which it will run is quite complicated in terms of landscape, there are many elevations. We are planning a test launch in spring and a full-fledged launch by the end of next year," he emphasized.

**Republic of Armenia**

**IFC, EBRD and EU sign agreement to support Armenia's first industrial-scale solar power plant "Masrik" (15.07.2020)**

ArmInfo.The International Finance Corporation (IFC), the European Bank for Reconstruction and Development (EBRD) and the European Union Partner Program (EU Partner) signed an agreement on supporting Armenia's first industrial-scale solar power plant "Masrik".

The 55 megawatt power plant, located in the Mets Masrik municipality of Gegharkunik region, will stimulate the supply of renewable energy and help the country reduce its dependence on imported fuel. The facility is being built by Fotowatio Renewable Ventures (FRV), part of Abdul Latif Jameel Energy, a global leader in industrial-scale renewable energy projects.

Under the agreement, the company will receive a $35.4 million debt financing package consisting of two long-term loans of

17.7 million dollars each from IFC and EBRD. The project will also receive a €3 million investment grant from the European Union.

The IFC financing package includes a loan of $8.9 million from its own funds and another loan of $8.9 million from the IFC and Finland's Climate Conservation Blended Finance Program.

The Masrik solar power plant is expected to generate more than 128 gigawatt-hours of electricity per year at a competitive tariff of €4.19 per kilowatt-hour, the statement said. The electricity will be sold under a power purchase agreement with the Electricity Networks of Armenia. The project will neutralize the output of 40,000 tons of carbon emissions per year.

Currently, nearly 70 percent of Armenia's electricity production relies on imported fossil fuels. "As the country's demand for electricity grows, renewable energy is expected to provide a sustainable and low-cost alternative energy source, and the Masrik venture is intended to serve as an example for the rest of the Caucasus," the report said.

"Armenia has great potential when it comes to renewable energy development, particularly solar energy, and the country is a strategic priority for FRV," said Miquel de Irala, managing director for Middle East and Africa at FRV Corporation. "The financial completion of our first solar project in the Caucasus region is an important milestone for FRV, and it allows us to expand our capabilities and continue to lead the utility-scale solar industry globally. In connection with this project, we are extremely proud to contribute to the country's sustainable economic growth and job creation, thereby helping to build a more sustainable future."

Aida Sitdikova, EBRD Eurasia Energy Director, Sustainable Infrastructure Group, in her turn emphasized that "The EBRD is pleased to support this landmark project, which builds on our active policy engagement and investment in Armenia's energy sector since 1993. Following the EBRD's financing of grid-connected, private generation companies, we are pleased to provide financing for this first industrial scale solar project. We are working with the Armenian authorities to develop further renewable energy projects - wind and solar. We are deeply grateful to our partner, the European Union, for co-financing this remarkable project."

"The Masrika solar project will play a fundamental role in helping Armenia achieve its energy and climate goals in line with the EU-Armenia Comprehensive and Enhanced Partnership Agreement (CEPA) and the Sustainable Development Goals. The country has the potential to create a number of new jobs, create new industrial opportunities in the region and contribute to economic growth," said Andrea Victorin, EU Ambassador to Armenia.

It should be noted that the construction of Masrik-1, an industrial-scale solar power plant, is currently underway in Armenia, which is being built by the winning consortium of Photowatio Renewable Ventures B.V, a Dutch company with Spanish roots, and FSL Solar S.L., a Spanish company. (FSL Solar SL). In order to realize the project, the consortium established Efarvi Masrik Company in Armenia. The approximate cost of the investment program will exceed $55 million.

**Solar power plants are being installed in Armenia's Noyemberyan (29.07.2020)**

 The Territorial Development Fund of the Ministry of Territorial Administration and Infrastructure of Armenia with the assistance of the United States Agency for International Development (USAID) is implementing a local government reform program, which, among many other investments, envisages the implementation of AMD 30 million for the installation of solar power plants in the enlarged community of Noyemberyan.

As the press service of the RA Ministry of Territorial Administration and Infrastructure reports, the first solar power station has already been installed on the roof of the cultural house of Noyemberyan. Its capacity is 20 kilowatts. The station will annually produce about 25 thousand kilowatt/hours of electricity.

By September, it is planned to put into operation four more stations with a total installed capacity of 80 kilowatts, two of which will be installed at the pumping stations supplying drinking water to the border village of Barekamavan. Upon successful completion of the project, the enlarged community of Noyembkryan will save about five million drams per year.

It should be noted that in addition to USAID, the idea of developing alternative energy in Armenia is also actively supported by the European Union, which has allocated 80 million euros for this purpose. Another 300 million euros will be allocated by the EU and European financial institutions to improve the security of the country's energy complex and diversify the energy sector.

of the country's energy complex and diversification of energy sources. Most of the funds will come in the form of loans, while the other part will come in the form of grants. At the same time, priority will be given to energy efficiency projects, which should be aimed at reducing dependence on energy imports, smoothing the growing demand for energy and providing more affordable, cost-effective as well as environmentally friendly energy solutions. Currently, residential buildings represent the largest energy consuming sector in Armenia - about 40% of electricity and gas. The objective of the EU and the Armenian authorities is to reduce this figure in the short term to 20%, and in the long term - until 2030 - to reach almost zero-net-zero energy consumption (NZEB) using renewable energy sources. A long-term roadmap is also being developed with the goal of 100% NZEB compliance of all new public buildings in Armenia by mid-century. An eco-labeling certification procedure for "green buildings" is also being developed.

**IFC, EBRD and EU to become institutional investors of Masrik-1 solar power plant construction project in Armenia (13.08.2020)**

International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD) and European Union will become institutional investors of "Masrik-1" solar power plant construction project in Armenia. The RA Government at the session on August 13 approved the letters of direct contract between EBRD and IFC for signing.

As it is noted in the reference substantiating the draft decision, the RA Minister of Territorial Administration and Infrastructure is charged to make amendments to the cover letter and sign it on behalf of the RA Government.

WB Group member International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD) and the European Union announced support for the construction of a solar power plant of industrial importance in Armenia. The plant with a peak capacity of 55 MW, which will be located in the village of Metz Masrik in Gegharkunik region, will increase Armenia's renewable energy capacity and help the country reduce its dependence on imported energy carriers. The station will be built by Fotowatio Renewable Ventures (FRV), a Dutch-Spanish consortium that won an international tender. The company will receive a loan package of $35.4 million, of which $17.1 is long-term financing from the IFC and EBRD through one-off loans. The program will also receive an investment grant of

EUR 3 million from the EU, which will be mobilized by the EBRD. The IFC financing package includes an $8.9 million loan from the corporation's own funds and $8.9 million from co-financing from Finland and the IFC Climate Program. In turn, Ameriabank will provide financing for additional tax costs.

The Masrik solar power plant is planned to generate electricity at a competitive tariff of 4.19 cents per 1 kWh. Electricity will be purchased from Electric Networks of Armenia CJSC. Implementation of the program will reduce annual carbon dioxide emissions by 40 thousand tons. The expected amount of investments will be about $50 million. The capacity of the station will allow producing up to 120 million kWh of electricity annually. The winner of the tender has six months to finalize the project financing agreements, followed by two years for the construction of the Lichk power plant and power transmission line.

Armenian NPP is connected to the power system of Armenia (25.08.2020)

Turbine generators No. 3 and 4 of the second power unit of the Armenian NPP after scheduled preventive maintenance (PPR-2020) have reached the power level and are connected to the unified power system of Armenia.

Within the framework of the program, works in the reactor and turbine shops, as well as in the centralized repair shop were completed. Instrumental inspection of the reactor control and protection system drives was carried out, as well as inspection of metal non-destructive testing devices. The performed works allowed to significantly increase the level of safety and reliability of the power unit operation.

The maintenance and repair work at the Armenian NPP was completed ahead of schedule - 12 days ahead of schedule. This became possible due to the clear organization of the process, the focus of the Armenian NPP personnel on the result, as well as mutual understanding and effective business relations with the involved organizations, which have developed during the fruitful joint work. JSC Rusatom Service, a specialized service company that is a part of the power division of Rosatom State Corporation, acts as the general contractor for the implementation of works within the framework of maintenance and modernization of the equipment of the Armenian NPP.

For the fifth year already, Armenian NPP combines preventive maintenance with the implementation of the Plant Life Extension Program, since most of the activities in this direction are technologically available only at the shutdown power unit. After the scheduled preventive maintenance is completed, the works on extension of the service life of the power unit No. 2 of the Armenian NPP will be continued.

It should be reminded that the Armenian NPP was shut down for the next scheduled preventive maintenance since July 1. It was envisaged that the works on the second power unit of the Armenian NPP would last 65 days. The activities at the NPP are carried out within the framework of modernization and extension of the operation life of the second power unit of the NPP in order to improve the efficiency and reliability of the plant. A budget loan of 63.2 billion drams (about $130 million) will be provided to complete the extension program of the Armenian Nuclear Power Plant. The state budget funds will be provided for the completion of the program on prolongation of the operation life of the second power unit of the ANPP. Earlier Armenia attracted a loan of $270 million and a grant of $30 million from the Russian Federation for the implementation of the program, and according to the situation as of today the residual resource of these funds amounted to $107 million. For objective and subjective reasons it was not possible to agree with the Russian partners on this residual resource. For this reason, a decision was made to attract a budget loan of 63 billion drams. In 2020 the Armenian NPP will receive AMD 18.7 billion from these funds, in 2021 - AMD 31.5 billion and in 2022 - AMD 13 billion. The repayment period of each tranche will be 12 years, of which the first 2 years will be favorable. The interest rate will be equivalent to the interest rate of the borrowed funds of the Russian Federation attracted earlier. The loan will be repaid twice a year in equal proportions on June 25 and December 25 of each year, and interest will be paid from December 25, 2020 with semi-annual payments on June 25 and December 25 of each year. The loan is provided without collateral. The country's Ministry of Finance will issue state treasury bonds under the program. The project also provides for the formation of an interdepartmental tender commission, which will carry out all tender procedures and control the process of program implementation.

The most powerful power substation is ready for the launch of BelNPP (08.07.2020)

The country's most powerful power distribution substation is ready for the launch of the Belarusian NPP. A large-scale reconstruction has been completed here.

The Belorusskaya substation transmits electricity to the regions, as well as connects the energy system of our country with Russia and the Baltic States.

The modernization made it possible to switch to modern technologies and replace the switchgear equipment.

This is the highest voltage power line in Belarus with a voltage of 750 kilovolts. It will make it possible to transmit electricity with the least losses.

Pavel Drozd, Director General of Belenergo:

We have completely reconstructed the 750-kilovolt switchgear, installed new modern European equipment, thus increasing the reliability of equipment operation. And this is primarily due to the fact that we have the Belorusskaya substation, and the entire emergency control system of the Belarusian energy system is tied to it. The reconstruction of the Belarusian substation is connected with the program of NPP integration, so today we have a 750 kilovolt line with Smolensk NPP, so that there is a possibility to transfer power, if necessary, from Russia or from Smolensk NPP here, to our country, and from us, if necessary, to them.

Zivorad Smiljkovic, Head of the representative office of the company - the general contractor of the project (Slovenia): Modern European technology has been applied here, which is jointly developed with Belarusian enterprises. The technology is one of the most advanced and newest, which makes it possible to use it for a minimum of 35-50 years without any reconstruction.

The reconstruction of the power station is part of a large-scale program to integrate BelNPP into the energy system of the country. Similar substations have appeared in many regions of Belarus. They are all necessary to maintain the energy balance and efficient distribution of electricity, which will be provided by the peaceful atom.

The first hydroelectric power plant in the region was launched in Homel region.

A new modern hydroelectric power plant with online control has been erected at the site of the first Belarusian hydroelectric power plant. The investment project was implemented by Dobgidroinvest LLC on the Iput River in Dobrush. The operating maximum of the new hydropower plant is 450 kWh. However, it is not the smallest hydropower plant by Belarusian standards. The launch of the station became a significant event for the 20-thousand people of Dobrush. In the same place, 120 years ago, under Prince Paskevich, the first hydroelectric power plant in Belarus was launched, thanks to which the local paper mill started to work.

Electric perspectives.

Promising infrastructure projects for the use of electric energy in various spheres of the Belarusian economy were discussed by power engineers, scientists, and other experts at a press conference held on July 23 in Minsk as part of the Energy Efficiency Leader 2020 contest. "The commissioning of the Belarusian NPP is a step forward that will allow Belarus to increase GDP, reduce its energy intensity, attract and introduce new technologies, materials and equipment into the country," said Mikhail MALASHENKO, Deputy Chairman of the State Standard - Director of the Department of Energy Efficiency, in his opening speech. Mikhail Petrovich reminded that Belarus is now implementing a special plan to increase electricity consumption in various areas of the national economy - industry, housing and utilities, construction, transport... "In total, this plan will be implemented approximately 178 measures that will increase annual electricity consumption by 2 billion 800 million kWh," Mikhail MALASHENKO emphasized.

"Power engineers have already taken a number of measures to integrate the Belarusian NPP into the energy system," continued Vladimir BOBROV, First Deputy General Director - Chief Engineer of Belenergo State Production Association. - One of the main measures - construction of electric boilers - is aimed at improving the reliability of equipment operation and equalizing the daily load schedule. Overall, Belarus plans to commission electric boilers with an installed capacity of up to 1,116 MW, of which 916 MW is accounted for by power system facilities - 760 MW at power plants and 156 MW at boiler houses. "In addition to soft passing of night dips in electric load, the construction of electric boilers will sharply increase the technical maneuverability of our equipment," Vladimir Vladimirovich emphasized. - Calculations of specialists on modes show that the presence of electric boilers will sharply reduce the number of equipment start-ups and shutdowns, reducing the consumption of fuel and energy resources for start-up operations. Besides, electric boilers will help to organize additional redundancy by types of fuel: all our CHPPs have an opportunity to operate on two types of fuel (gas and fuel oil), and a third one - electric energy - will be added to them. Besides, the appearance of electric boilers at large energy sources will improve the ecological situation in the cities". Today, electric boilers with a total capacity of 170 MW at CHPPs and 26 MW at boiler houses have already been put into operation in the republic. Certain delays related to the coronavirus pandemic and the impossibility of entry to Belarus of chief engineers of equipment manufacturing plants have been overcome (adjustment was sometimes carried out remotely - with the help of a laptop and a webcam), and by the end of this year the energy sector plans to implement all the projects.

"From the technical point of view of construction electric boilers are not complicated projects, - said Alexander SIVAK, Assistant Director of RUE "BELTEI" for perspective development. - Specialists of our enterprise designed six such facilities - at five boiler houses and one mini-CHP in Pinsk. The installed capacity of electric boilers ranged from 10 to 40 MW. The peculiarity of the projects was the presence of accumulator tanks from 500 to 1000 m3: I would not say that this is a new technical solution, but it has not been widely used in our country. At the design stage we discovered unexpectedly large volumes of additional network construction, which required the construction of new electrical substations, and one facility even had to be abandoned because the cost of network construction was too high". Alexander Vladimirovich also said that certain issues were related to the joint operation of the existing and new equipment. However, all the problems were solved in a working order and in time. "The introduction of electric boilers is not just an infrastructure project aimed at saving fuel and improving the environmental friendliness of energy production. Electric boilers are also a reliable component in increasing the maneuverability and operational safety of the Belarusian energy system," summed up Vladimir Bobrov, reminding that next year the power engineers are facing another important task - construction and commissioning of peak-reserve sources.

The meeting of the Presidium of the Council of Belenergo discussed the results of the work of the association's organizations for the first half of 2020.

On August 14, the Presidium of the Council of Belenergo held a meeting in Minsk. The collegial management of the association is carried out by a permanent body - the Council. The Presidium of the Council is its collegial, operational working body. The Presidium of the Council includes the Director General of Belenergo and his deputies, Director Generals of RUE-oblenergo, Director Generals of a number of state enterprises.

Tamara Antropova, Head of the Production and Technical Department of Belenergo, reported on the fulfillment of the key performance indicators set by Belenergo for 2020 to ensure the implementation of social and economic development objectives, the requirements of the Directive of the President of the Republic of Belarus No. 3, technical and economic performance indicators of the energy system, and energy saving targets.

Electricity generation by Belenergo sources in the first half of 2020 amounted to 16.73 billion kWh. Electricity consumption amounted to 18.54 billion kWh.

Deputy General Directors of Belenergo for supervised areas and heads of energy supplying organizations made reports on the results of the first half of the year.

The meeting was attended by Viktor Karankevich, Minister of Energy, Alexander Zhilko, Deputy Chairman of the Republican Committee of the Belarusian Trade Union of Energy, Gas and Fuel Industry Workers, and Nikolai Bulyga, Chairman of the Republican Public Association of Veteran Power Engineers.

Pavel Drozd, Director General of Belenergo, opened the meeting. In his report he paid special attention to the implementation of the requirements of the Directive of the President of the Republic of Belarus No. 1 of March 11, 2004. "On Measures to Strengthen Public Safety and Discipline", the state of labor protection and safety.

Repairs, construction, replacement of heating and electrical equipment, heating and electrical networks are carried out according to the schedules. Repairs of 6 power boilers, 4 turbines, 11 hot-water boilers and 9 steam boilers were performed. Replacement and construction of heat networks in the volume of 100.073 km in one-pipe calculation was performed. Overhauls of 5 generators, 1 switch of 220-330 kV voltage class, comprehensive overhaul of 23 35-110 kV substations were performed. 796.85 km of 0.4-330 kV transmission lines were put into operation.

Implementation of projects continues:

- Reconstruction of 330 kV substation Mogilev-330;

- Minsk CHPP-3. Reconstruction of 14 MPa line;

- Reconstruction of PS-220 kV "Stolbtsy" with transfer to 330 kV voltage and construction of 330 kV overhead line "Stolbtsy-Baranovichi" (3rd and 4th stages of construction).

In the 1st quarter of 2020, Belenergo organizations mastered investments in fixed assets in the amount of 865,927 thousand rubles.

The meeting also addressed the issues of organization of work on the implementation of administrative procedures on applications of citizens, legal entities and individual entrepreneurs in the field of electricity and heat supply and sales activities.

The participants of the meeting discussed the progress of preparation of energy supplying organizations to work in the autumn-winter period of 2020/2021.

Summarizing the results, Viktor Karankevich, Minister of Energy, noted the need for timely and high-quality implementation of measures to integrate the Belarusian NPP into the energy system of the Republic of Belarus, implementation of comprehensive measures to increase power consumption. He noted that at each new stage there are various difficulties and challenges, but power engineers are ready to cope with them.

Belarus resumes electricity imports from Ukraine.

Belarus has resumed importing electricity from Ukraine, the Energy Ministry told BELTA.

"We are talking about mutually beneficial cooperation on a parity basis, when mutually beneficial supplies of electricity are made within the energy systems of our countries if technically possible and economically feasible," the press service said.

According to the National Atomic Energy Generating Company of Ukraine "Energoatom," the export of electricity produced at Ukrainian NPPs to Belarus began at midnight on July 22.

The volume sold at the Ukrainian Energy Exchange - 12 thousand MWh of base-load electricity delivered in the period from July 22 to July 31 at a weighted average price of 948 UAH/MWh - was sent to Belarus.

With the commissioning of BelNPP it is planned to set lower electricity tariffs for the real sector of economy (13.08.2020).

With the commissioning of BelNPP and the growth of electricity consumption for the real sector of the economy it is planned to set lower tariffs for electricity. This was announced today by Energy Minister Viktor Karankevich after a meeting with the head of state, BelTA correspondent reports.

It is planned to set lower tariffs for the real sector of the economy, taking into account the growth of electricity consumption in the country.

August 7, nuclear fuel loading started in the reactor of the first power unit at BelNPP. This work is scheduled to be completed on August 13 - all 163 fuel assemblies should be loaded. Next is the assembly of the reactor, its compaction and reaching the minimum operating power. The equipment will be connected to the grid and electricity will be supplied to the country's consumers in the fourth quarter.

In parallel, work is underway to increase electricity consumption. An inter-sectoral set of measures is being implemented, which will increase electricity consumption in the real sector of the economy by 2.7 billion kWh by 2026. Now the Ministry of Energy and the Ministry of Antimonopoly Regulation and Trade are working on a system of incentive tariffs based on the volume of consumption: the higher the volume of consumption, the lower the tariffs.

The use of "green" electricity is growing in Belarus (14.08.2020)

The use of "green" electricity is growing in Belarus, BELTA was informed by the press service of the Department of Energy Efficiency of the State Standard.

Under the state program "Energy Saving" for 2016-2020, 280.5 MW of renewable energy source (RES) installations producing "green" electricity were put into operation in Belarus by the beginning of the third quarter of this year.

As of July 1, the total installed electric capacity of RES installations amounted to 418 MW, which is almost five times higher than the figure of six years ago - 88 MW as of January 1, 2014.

The largest share in the RES structure by installed capacity is occupied by solar power plants with a total capacity of 159 MW (38%), wind power plants - 109.1 MW (26%), hydroelectric power plants (HPP) - 96.1 MW (23%). The share of biogas plants amounted to 9.2% (38.6 MW), biomass-based mini-CHPs - 3.7% (15.5 MW).

In the structure of electricity generation from RES installations, taking into account different installed capacity utilization rates by RES types, the situation is different. "Here, since 2016, hydroelectric power plants have been holding the lead, wind power plants are in second place, followed by solar power plants (in 2018 they were ahead of wind power plants). If in 2016, 0.3 billion kWh were generated from RES, in 2019 - already 0.9 billion kWh," the specialists noted.

The Department of Energy Efficiency also presented data on the development of RES by region. Thus, Gomel region has the most developed potential of solar energy, but the region is not rich in water resources (the only hydroelectric power plant for 0.45 MW is built on the river Iput in 2020) and has no wind power plants. Here, the total installed RES capacity is the largest in the country - 102 MW. In the Grodno region with evenly developed use of wind, solar and water energy - 97.5 MW.

After the planned commissioning of the Cherikov solar power plant with an installed capacity of 109 MW in 2020, Mogilev Oblast (currently 89 MW) will remain the leader on the way to a carbon-neutral future for a long time. Minsk (29 MW) and Brest (16 MW) oblasts have the most developed potential for biogas energy, Vitebsk (76 MW) - water energy. Minsk organizations, where there are installations with a total capacity of 8.8 MW, exploit all types of RES, except wind.

Republic of Moldova

Three photovoltaic solar parks to be built in Moldova (26.08.2020)

Three photovoltaic solar parks with a total capacity of 28 MW will be built in the Republic of Moldova. The draft of this investment plan was presented during the working visit of the Minister of Economy and Infrastructure, Serghei Rylian, to the largest photovoltaic solar park in the Republic of Moldova - Fly Ren. During his visit, Serghei Railean discussed with the company's administration the production capacities of the PV park, as well as the problems and obstacles they are currently facing.

According to Fly Ren representatives, the solar park has a capacity of 1 MW and is located on an area of about 2 hectares. It currently has about 3,700 solar panels on its site. During a calendar year, 1.2 million kWh is generated. In the future, the company intends to build three more PV parks: in Bulboaca, Carpineni and Nisporeni. The largest solar panel park will be built in Moldova "The Republic of Moldova should develop alternative energy sources in order to utilize its potential in the renewable energy sector. This goal can be achieved by actively involving the business environment in new renewable energy projects. The construction of three more photovoltaic parks with a total capacity of about 28 MW will increase the capacity of renewable energy production on the national market," said Serghei Rylian. The Minister also visited the call center of the 112 Emergency Service in Bachoi commune, which is located near the solar park. This is the first call center in Europe that is 100% powered by green energy from the photovoltaic park. About 85% of the renewable energy produced by the PV park is supplied to the central electricity supplier S.A. "Energocom.

ANRE reduced the electricity tariff for residential customers served by Premier Energy by 11.1% to Bt168 per 1 kWh.

The decision was made at the July 31 meeting of the Admin Council of the National Energy Regulatory Agency. For consumers served by Premier Energy and connected to medium-voltage networks (6;10 kW), the tariff has been reduced by 13.8% to 132 bani per 1 kWh; and for those connected to high-voltage networks (35-110 kW) - by 14.9% to 117 bani per 1 kWh.

The tariff reduction was possible due to: a 10% reduction in the average price of electricity purchase from the central supplier (from 163 to 146 bani per 1 kWh); positive tariff deviations accumulated until July 1, 2020; change in the average annual exchange rate of the national currency from 17.58 lei per $1 (included in the current tariff) to 17.9 lei per $1 for 2020. At the same time, ANRE lowered the electricity tariff for residential consumers in the northern regions served by Furnizarea Energiei Electrice Nord by 3.8%, to 214 bani per 1 kWh. For consumers served by Premier Energy and connected to medium voltage networks (6;10 kW), the tariff has been reduced by 3.9% to 157 bani per 1 kWh. The tariffs will come into force upon publication in Monitorul Oficial. //31.07.2020 - InfoMarket.

Moldova's energy imports in January-April 2020 in monetary terms amounted to $234.88 million, decreasing by 28.5%, compared to the same period of 2019.

In the first 4 months. 2020 г., compared to the same period of the previous year, imports of oil and oil products in value terms decreased by 24.6% - to $126.56 mln, and natural gas - decreased by 30% - to $96.91 mln. Imports of electricity decreased by 49.6%, amounting to $8.11 mln. Supplies of coal, coke and briquettes for the same period decreased by 43.7% - to $3.29 million. The share of mineral fuels in the total volume of Moldovan imports in January-April 2020 amounted to 14.23% against 17.45% in the same period a year earlier. Import of energy resources took the 4th place in the total structure of product supplies to Moldova in 4M. 2020 г. At the same time, the import of oil products in the structure of total imports amounted to 7.67%, natural gas - 5.87%, electricity - 0.49%, coal - 0.2%.

In Moldova, reduced electricity tariffs for the country's end consumers came into force on August 7. (07.08.2020г.)

The corresponding decision, which was adopted on July 31 by the Administrative Council of the National Energy Regulatory Agency, came into force after its publication in Monitorul oficial.

According to ANRE's decision, in particular, for Premier Energy end-users, whose electrical installations are connected to low-voltage (0.4 kV) distribution networks, the tariff was reduced by 21 bani (-11.1%), to 168 bani per 1 kWh (excluding VAT). For Premier Energy customers connected to medium-voltage networks (6;10 kV), the tariff was reduced by 21 bani (-13.8%) to 132 bani per 1 kWh, while for those connected to high-voltage networks (35; 110 kV), the tariff was reduced by 20.6 bani (-14.9%) to 117 bani per 1 kWh. At the same time, for Furnizarea Energiei Electrice Nord customers whose electrical installations are connected to low-voltage (0.4 kV) distribution networks, the tariff was reduced by 8.5 bani (-3.8%), to 214 bani per 1 kWh, while for Furnizarea Energiei Electrice Nord customers connected to medium-voltage (6;10 kV) networks, the tariff was reduced by 6.4 bani (-3.9%), to 157 bani per 1 kWh. As ANRE reported earlier, the reduction of electricity tariffs for end consumers was possible due to the following objective factors: reduction of the average electricity purchase price from the central electricity supplier from 163 to 146 bani per 1 kWh (-10%), reduction of electricity purchase price by 7%, positive tariff deviations accumulated until July 1, 2020, new forecast of the annual average exchange rate of the national currency against the US dollar for 2020 at the level of 17.9 lei, compared to the previous annual average exchange rate of 17.58 lei per US dollar included in the tariffs/prices in force (+1.8%).

Sales revenue of Moldova TPP in H1 2020 in Russian rubles amounted to 5 bln 491 mln ($75.3 mln at the current CBR exchange rate), increasing by 16.8%, compared to the same period of 2019 (18.08.2020).

Such data is contained in the financial statements for the above period of Inter RAO Group, which includes Moldova TPP, located in the Transnistrian region (Dnestrovsk). In January-June last year, sales revenue from Moldavskaya GRES amounted to RUB 4 bln 702 mln. According to Inter RAO reports, EBITDA (earnings before interest, taxes, depreciation and amortization) of Moldavskaya GRES increased by 13.4% - from RUB 1 billion 392 million in January-June 2019 to RUB 1 billion 579 million in the same period of 2020.

According to Inter RAO, Moldavskaya GRES showed positive dynamics in the first half of 2020 due to an increase in the volume and prices of electricity supplies. As previously reported by InfoMarket, Moldova TPP in the first half of 2020, compared to the same period of 2019, increased electricity production by 9.1% to 2 billion 105.3 kWh. Sales revenue of Moldavskaya GRES in 2019 amounted to 10 billion 391 million Russian rubles and increased by 22.4% year-on-year, while EBITDA increased by 11.8% year-on-year, from 2 billion 804 million rubles in 2018 to 3 billion 136 million rubles in 2019. Moldavskaya GRES is located in Transnistria on the western bank of the Kuchurgan estuary. The power plant has an installed capacity of 2,520 MW. Moldavskaya GRES consists of 12 power units and operates on three types of fuel: coal, gas and fuel oil. CJSC Moldavskaya GRES is 100% owned by Inter RAO Group, a diversified energy holding company present in various segments of the power industry in Russia and abroad. The company holds leading positions in Russia in the field of electricity export and import, is actively increasing its presence in the generation and sales segments, as well as developing new business areas.

Republic of Kazakhstan

Big future of small HPPs (source KOREM JSC)

Ensuring energy security is a key priority for Kazakhstan.

There is a strong political impetus in the country to move towards a green economy. Thus, the Strategy "Kazakhstan-2050" and other strategic program documents state ambitious goals to achieve a 50 percent share of alternative and renewable energy by 2050 in its power generation sector, as well as to reduce the energy intensity of GDP by 25 percent by 2020 compared to the 2008 baseline. We asked Lidia Parkhomchik, an expert at the Institute of World Economy and Politics under the Nursultan Nazarbayev Foundation, to talk about how realizable these tasks are.

The total potential of renewable energy sources (RES) in Kazakhstan is very significant and is estimated at more than 1 trillion kWh per year. The most promising for development are wind energy (technical potential - 929 billion kWh). The total hydropower potential of Kazakhstan is 170 billion kWh per year, with 62 billion kWh of technical potential, of which 30 billion kWh per year is economically feasible for use. Nevertheless, Kazakhstan generates on average about 8-9 billion kWh per year, which indicates that the country's hydropower resources are underutilized.

Electricity generation at HPPs

Today, it is the hydropower segment that is the most developed renewable and alternative energy source in Kazakhstan. Hydroelectric power plants installed both in the Soviet and post-Soviet periods play an important role in the country's energy balance. Gross electricity production from hydroelectric power plants in Kazakhstan increased from 7.3 billion kWh in 1990 to 9.9 billion kWh in 2019.

However, a number of nuances need to be taken into account here. For example, over the past three years, the share of electricity produced by large HPPs has tended to decline. In 2017, hydroelectric facilities accounted for 11.1 billion kWh of electricity produced, while in 2018 this indicator decreased to 10.3 billion kWh. Accordingly, there is a systematic decline in the share of hydroelectric power plants in total electricity production from 10.9 percent in 2017 to 9.7 percent in 2018 and 9.4 percent in 2019. If we take into account the 1st quarter of 2020, this indicator amounted to 7.1 percent.

In general, it should be noted that, according to the International Renewable Energy Agency (IRENA), in 2019, the installed capacity of hydroelectric power plants in Kazakhstan amounted to 2,779 MW. In fact, our country ranks third among Central Asian countries after Tajikistan (5,631 MW) and Kyrgyzstan (3,673 MW) in terms of installed hydropower capacity.

The mode of operation of Kazakhstan's HPPs was determined by the water balance and hydrological situation. The decrease in generation in 2019 compared to last year at hydroelectric power plants in Kazakhstan (-358.1mn kWh or -3.5%) is due to lower water consumption at HPPs, including the Irtysh HPP cascade and hydroelectric power plants in Almaty region.

It should be noted that, despite the decrease in the productivity of large HPPs, the general trend of steady growth is noted in the field of electricity consumption, which amounted to 105.1 billion kWh (1.9 percent growth by 2018). At the same time, Kazakhstan is still able to cover the country's needs through its own electricity generation - in 2019, electricity production amounted to 106 billion kWh (a decrease of 0.7 percent compared to 2018).

Hydropotential of Kazakhstan

Kazakhstan has three hydropower-rich regions: the Irtysh River basin with large hydropower plants (Bukhtarma, Shulbinsk, Ust-Kamenogorsk), the Ili River basin (Kapshagai, Moynak) and the Syr Darya, Talas and Chu River basins (Shardarinsk).

It is estimated that more than 66 percent of total water withdrawals in Kazakhstan (mainly from the Syr Darya, Ili, Chu, Talas and Irtysh rivers) are used for agriculture, including irrigation and livestock, and 30 percent for industry. The remaining 4 percent is used for human consumption. In fact, at present Kazakhstan faces the need to improve the regional water strategy and strengthen measures to preserve the resource potential of the river system and its environmental safety.

It is worth noting that water resources are extremely disproportionately distributed within the country and are characterized by significant seasonal dynamics. For example, the Balkhash-Alakol and Irtysh river basins in the eastern and north-eastern regions account for almost 75 percent of surface water resources generated within the country. While in the western and southwestern regions there is a significant water deficit.

It should be noted that about 90 percent of all rivers in the country are small, which makes the construction of small hydropower plants economically feasible. Projects related to their commissioning are systematically implemented. In total, there are 2174 rivers in Kazakhstan. The number of rivers with a length of 10 to 50 kilometers is 1,889 (86.9 percent), from 50 to 100 kilometers - 130 (6 percent), more than 100 kilometers - 155 (7.1 percent).

Recently established small hydropower plants are classified as renewable energy sources by the Kazakh authorities. At the same time, large and medium-sized hydropower plants are classified separately. However, such a gradation is quite understandable and correlates with the national approach to transition to a green economy.

As of 2019, Kazakhstan had 90 RES facilities with installed capacity of 1,050 MW. At the same time, the share of alternative energy sources in the country's total energy balance increased from 1.26 percent in 2018 to 2.3 percent in 2019. 12 companies have signed agreements with the Single Power Purchaser of RES for a period of 15 years. The share of RES in Kazakhstan should increase to three percent by 2020, 10 percent by 2030 and 50 percent by 2050.

According to statistical data, Kazakhstan has managed to gradually put new small hydropower plants into operation. Electricity generation by small hydropower plants in the country increased from 649.1 million kWh in 2017 to 807.4 million kWh in 2018. In 2019, this indicator amounted to 1105.3mn kW\*h. At the same time, the installed capacity of small hydropower plants increased to 222.2MW. In fact, among all RES sources, small HPPs are leading in terms of electricity generation.

Starting from 2018, the country introduced an auction mechanism in the selection of projects, which made it possible to reduce tariffs for RES support. The transition to auctions can be considered a "breakthrough" decision for the entire sector. According to the results of the auctions for the selection of RES projects for 2019, two projects with a capacity of 7 MW accounted for the share of small HPPs. In total, 13 RES projects with a total installed capacity of 212.89 MW were selected. At the same time, it is small HPPs that continue to maintain the lowest starting price for auctions - 15.48 tg/kWh. It is important to note that for 2020, out of 250 MW of total auctioned installed capacity, 120 MW will be small hydropower plants.

Introduction of small hydropower plants

Sufficiently low production costs, reliability and environmental friendliness are strong arguments in favor of building small hydropower projects. Turkestan, Zhambyl and Almaty Oblasts are the leaders in implementing relevant initiatives.

To address the issue of energy deficit in the Turkestan region, it is planned to build 10 small HPPs with a capacity of 25 MW. To date, 6 RES projects with a total capacity of 29 MW have been implemented in the region, 4 of which are small HPPs. Ryshzhan HPP with capacity of 2 MW in Saryagash district, HPP in Mankent village of Sairam district with capacity of 2.5 MW, HPP with capacity of 1 MW in Kazygurt district, Kenes HPP in Tolebi district with capacity of 2.5 MW are operating in the region. In total, more than 43 potential sites for small HPPs on 20 rivers of Turkestan region have been identified with a total capacity of 119.84 MW.

The leadership of Almaty region has already formed a special program for the development of hydropower potential. Thus, until 2025, 28 facilities will be constructed in the region, which will additionally produce more than 850 MW of own electricity. Such hydropower projects as Karash HPP and Verkhne-Baskan HPP-1 with the capacity of 125 kW and 4.2 MW respectively have already been implemented in the region. In 2016, the Almaty Oblast authorities launched a 17 MW hydropower plant located on the Lepsy River in the Sarkan district. In 2019, HPP-1 with a capacity of 5 MW was built on the Issyk River in Yenbekshikazakh district of Almaty region. Earlier, HPP-2 was put into operation.

Two more HPPs with a total capacity of 13 MW will be put into operation in Almaty region. Their construction is planned to be completed in 2020. We are talking about the construction of Verkhne-Baskan HPP-2 with a capacity of 8.8 MW and Verkhne-Baskan HPP-3 with a capacity of 4.2 MW.

Zhambyl Oblast has also already confirmed its intention to install four small hydropower chains in the Koksay district of Zhualyn, in addition to the 9.2 MW Tasotkel reservoir hydropower plant, two 1.5 MW Merken HPPs and a 2.3 MW Karakystak HPP.

The hydropower sector remains a key element of the country's energy security. After decades of ups and downs, the total energy production generated by large HPPs in Kazakhstan has so far remained stable, although it is on a downward trend. The increasing deployment of small HPP technologies may offset this decline over time. Although the new HPPs in Kazakhstan have relatively small capacity, their operation is aimed at regulating the distribution of electricity load, realigning power supply during periods of peak consumption.

After Kazakhstan adopted a decree in February 2020 granting priority status to RES projects, investors were given the opportunity to receive tax preferences (CIT, land tax rates, property tax). Such innovations should serve as an additional incentive for the development of RES in general and small hydropower in particular.

New marginal tariffs for electricity in Kazakhstan were approved by the Ministry of Energy of Kazakhstan - the order was published on June 30. According to market participants, even after the increase, the tariffs will cover only the current costs of power supplying plants in 2020. Further growth in the cost of fuel and an increase in the guaranteed volume of purchases from renewable energy producers may lead to a new revision of tariffs.

Power companies have massively applied for an increase in the established marginal tariffs in April 2020 - 35 out of 44 operating energy producing organizations in the country have applied for tariff adjustment. Aydos Daribayev, Director of the Department of Electricity Development of the Ministry of Energy, explained: although in October last year it was approved to increase the marginal tariffs of energy producing organizations by an average of 15%, and the tariffs for electricity in accordance with current legislation are set for seven years, but at the same time electricity producers have the right to apply for an extraordinary increase in case of an actual increase in costs. And it was the actual increase in costs, according to the representative of the Ministry of Energy, that became the reason for applying for tariff adjustment.

Expensive sources

"Since the beginning of 2020, fuel purchase costs have increased by 9.9%, tariffs for electricity from renewable energy sources have increased by 9.3%, while the volume of energy generated from RES has doubled. Also, the share of payments to the budget and payment for the services of the system operator increased in the tariff," Daribayev listed all force majeure circumstances. According to him, the share of fuel costs in the cost of electricity is 35% in coal-fired generation and 60% in gas-fired generation. At the same time, another 11% of traditional power producers' costs are spent on purchasing power from renewable energy sources at a very high tariff. According to market participants, a kilowatt of green electricity now costs them 43 tenge, and they are forced to sell it to the end consumer at a price that does not exceed their marginal tariff.

To understand the difference: the maximum value of the marginal tariff until now was at MAEK-Kazatomprom LLP and was equal to 11.64 tenge per kilowatt-hour. And if earlier the traditional energy sector of the country was still coping with the role of sponsor of alternative energy, then now, together with other factors, the twofold growth in the volume of these purchases has become one of the reasons for the increase in tariffs.

"On renewable sources we have an annual growth of purchased volume, all stations of traditional generation put these costs into the cost price. This year, in fact, the share from the purchase of electricity from RES in the cost price of a kilowatt-hour has reached one tenge, increased from 45-50 tiyn to 95 tiyn - 1 tenge in the structure of the cost price of one kilowatt for the energy producing organizations of Samruk-Energy; the same thing probably happened on the market," says Aidar Rys¬kulov, Managing Director for Finance - Member of the Management Board of Samruk-Energy JSC. - The second equal reason is the growth of fuel prices and the increase in the cost of its transportation. The main supplier of thermal coal is Bogatyr Komir. Due to the fact that it is also in the portfolio of Samruk-Energy, last year we agreed on an increase of 9.9%, in the cost structure it gave a 2% increase in the cost of a kilowatt - it is, roughly speaking, up to 50 tiyn," he added.

As a result of the increase in these components, many power plants began to operate at a loss: according to Valery Dontsov, director of Stepnogorsk CHPP LLP, the cost of electricity generated at the limit tariff of 7.1 tenge per kWh set for his plant actually exceeded 8 tenge. At the same time, power engineers need to index the salaries of their staff, as the industry is already experiencing staff starvation: its enterprises are simply uncompetitive in the regional labor markets. "Our average salary at the station is 117 thousand tenge, while the average salary in the industry is 191 thousand tenge and the average salary at industrial enterprises in the region is over 200 thousand tenge," Dontsov said. - How can we retain people with such a difference if we've been working at a loss for the past six months?

There's still not enough money for modernization

The Energy Ministry has agreed to increase the marginal tariffs of energy-producing organizations by an average of 16%, which in the fourth quarter of 2020 will result in an increase of 200 KZT per month to current bills for end users. At the same time, according to experts, the current increase in tariffs will only allow the plants to reach zero expenses in the current year, but it will not help to solve the problem of wear and tear of the equipment of the plants by 60%. With modernization of generating capacities in the country in general now everything is quite difficult, states Dusenbai Turganov, First Deputy General Director of Central Asian Electric Power Corporation JSC.

"As you know, the electricity tariff from 2019 is divided into two components with the introduction of the electricity capacity market," recalls Turganov. - It was assumed that the capacity tariff would be used for investments, which was initially supposed to be 700 thousand tenge/MW\*month, which was clearly insufficient for the implementation of investment programs. As a result, this tariff was approved at KZT 590 thousand/MW\*month, which only aggravated the situation. The decision to apply zero profitability could finally put an end to the future of the country's power industry, given that many power companies have taken out large loans to reconstruct and modernize equipment, which must be repaid, while there are virtually no funds for investment programs," he adds.

According to Marat Uldanov, managing director for development and sales - member of the board of Samruk-Energy JSC, the country needs not only modernization of existing, but also commissioning of new capacities of traditional generation.

Electricity consumption in Kazakhstan grows by 3-5% annually, by 3 billion kWh. "Now generating capacities cover this growth, but the peak hours of consumption, from 18.00 to 22.00, when it grows by 30% of the norm, it is already hard for us to cover - we do not have enough reserves in Kazakhstan. And there is no money to create these reserves," Uldanov said. He recalls that in 2024, a new 500-megawatt unit will be launched at Ekibastuz GRES, and another such unit will be launched there in 2027. Each of them will be able to produce 2.5 billion kWh per year, i.e. at the current rate of consumption growth Kazakhstan needs to commission one such unit annually. And its cost ranges from 90 billion tenge (with the existing infrastructure) to 300 billion tenge (if built from scratch). Obviously, the current tariff will not give such money to energy companies, but without the current increase, the stations would use their revenues received on the capacity market and intended for modernization to cover their current costs, says independent expert Anuar Koshkarbayev.

The current increase in tariffs is not a solution to all the problems of power plants that exist today - it is only a restoration of those conditions of operation of power plants, when their tariffs for electricity allow them to fully cover their costs for its production," the expert notes. - But it should be understood that without such measures, in three or four years we may come to the same situation that we had in 2008, when the power system was facing a capacity shortage due to a long-lasting lack of funds. We all remember what happened after 2008: a program of "marginal tariffs" was promptly adopted, which began to grow sharply - there was no other way out. So, there is no doubt that the growth of tariffs will continue, because the expansion of capacity requires even more investment, but now there is still an opportunity to come to this growth gradually," he concludes

One of the largest wind farms in the country has successfully worked in Aktobe region (28.08.2020)

In unprecedented conditions of COVID-19 pandemic, the Badamsha wind farm was launched in northwest Kazakhstan

The project belongs to ArmWind LLP, a subsidiary of the largest Italian energy company Eni. As part of the project, ArmWind LLP and GE Renewable Energy signed a contract for the supply of wind turbines, while the leader of Kazakhstan's construction industry, BI Group Holding, acted as the general contractor under the CCD (design, procurement, construction) contract.

According to BI Group experts, project manager Mamyrkhan Kasymov and division director Victor Bogma, the 48 MW Badamsha wind farm will annually provide the region with electricity in the amount of

195 GWh and will reduce carbon dioxide emissions into the atmosphere by 172 thousand tons annually.

The Badamsha wind farm is the first wind farm in the Aktobe region and is Eni's first and largest investment in the world in the wind energy sector and the first step towards the development of the RES sector in Kazakhstan, fully financed from private sources. In turn, for GE Renewable Energy, this is a pilot project in Kazakhstan and the first experience of cooperation with Eni, backed by the agreement between Eni and GE Renewable Energy for the supply of wind turbines signed in 2018.

For BI Group's builders, the wind farm project was a unique experience in the field of RES. Thus, working in difficult field conditions, Kazakhstani builders managed to ensure continuous concrete pouring. The project involved 450 people from 25 different countries, 80% of whom were citizens of Kazakhstan.

This project is Eni's contribution to Kazakhstan's ambitious goal of securing 50% of its energy from renewable energy sources by 2050. The Badamsha project is the result of a fruitful cooperation between Eni, GE and the Ministry of Energy of Kazakhstan within the framework of a memorandum of understanding signed in 2017.

BI Group also shares this strategy and aims to contribute to the fulfillment of Kazakhstan's green economy objectives through participation in RES projects. According to Aydyn Rakhimbayev, Chairman of the Board of Directors of BI Group, developing countries are expanding the use of RES on the way to a sustainable future, and these steps will help prevent the global climate crisis. The future lies in RES, affordable clean energy for every Kazakhstani home.

Background Information:

BI Group is a leader in Kazakhstan's real estate market. The construction holding has been operating since 1995 and has earned a reputation of a professional and reliable partner. BI Group today is a multi-profile corporation, the structure of which consists of subdivisions and directorates in various spheres of construction, development and engineering.

Eni, an Italian integrated energy company, has been operating in Kazakhstan since 1992 and is the joint operator of the Karachaganak field, with interests in various projects in the North Caspian, including the Kashagan field. Eni is joint operator with KMG of the Isatay and Abay offshore exploration blocks. The company's own production is currently 180,000 barrels of oil equivalent per day. The company operates in more than 66 countries and is a Fortune Global 500 Top 100 company. The Badamsha wind farm was Eni's first wind farm project in the world.

GE Renewable Energy brings together one of the broadest portfolios of energy products and digital services in the renewable energy industry. Combining onshore and offshore wind, propeller, hydropower and innovative technologies such as hybrid systems and concentrated solar power, GE Renewable Energy has installed more than 400 gigawatts of capacity worldwide. GE Renewable Energy, which employs more than 22,000 people in 80 countries, is working on new ways to bring energy to the world's largest economies.

**Implementation of a new model of integrated safety management continues at power plants**

The goal of the Transformation Program project is to reduce the rate of occupational injuries by 30%.

Almaty Power Plants JSC (APP), Alatau Zharyk Company JSC (AZK) and solar power plant SamrukGreenEnergy LLP (SGE), where more than 6 thousand people work, entered the perimeter of the third wave of the project on implementation of a new model of integrated safety management of the Transformation Program of Samruk-Energy JSC. The new approaches are aimed at improving safety culture and reducing injuries at work by preventing incidents.

The start of the project "Implementation of a new model for integrated safety management" was announced at the kick-off online meeting with participation of top managers of the energy holding and line managers of Samruk-Energy JSC SDCs responsible for labor safety issues.

"I would like to note the priority of labor safety issues. This project is under special control of the Chairman of the Management Board of Samruk-Kazyna JSC Akhmetzhan Yesimov. The project sponsor in Samruk-Energy JSC is also the first head of the Chairman of the Board Bakitzhan-Zhulamanov", - said Co-Sponsor of the Project, Managing Director for Business Transformation Yedil Kopenov.

The project includes the introduction of new standards and practical tools that will help employees of power plants to change their attitude to compliance with safety rules, raise awareness and change outdated approaches.

As practice shows, risk prevention work makes it possible to prevent accidents at work. For the first half of 2020, 6 accidents were registered in the group of companies of Samruk-Energy JSC. Whereas for the same period of 2019, 7 unfortunate events occurred at the enterprises, including 1 fatal one. Since 2019, a transparent incident registration system has been implemented, where potentially dangerous accidents that did not lead to injuries are registered and investigated. Responsibility for concealing accidents has also been strengthened, and monetary incentives are provided for reporting potentially dangerous situations. In the first half of 2020, 16 potentially dangerous accidents were registered and investigated. In the same period last year, 23 incidents were recorded.