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**REPORT**

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

**JANUARY-NOVEMBER 2020**

**MARKET DEVELOPMENT DEPARTMENT**

**December 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 97 083,3 million kWh of electricity in January-November 2020, which is 1.5% 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-November** | | **Δ, %** |
| **2019** | **2020** |
| **Kazakhstan** | **Total** | **95693,0** | **97083,3** | **95693,0** |
| *TPP* | 77345,8 | 77551,1 | 77345,8 |
| *GTPP* | 8095,9 | 8545,1 | 8095,9 |
| *HPP* | 9237,2 | 8806,5 | 9237,2 |
| *WPP* | 625,1 | 970,7 | 625,1 |
| *SES* | 386,2 | 1205,5 | 386,2 |
| *BSU* | 2,8 | 4,4 | 2,8 |
| **North** | **Total** | **73750,4** | **74585,2** | **73750,4** |
| *TPP* | 64282,3 | 64821,6 | 64282,3 |
| *GTPP* | 2772,3 | 2850 | 2772,3 |
| *HPP* | 6324,6 | 6023,4 | 6324,6 |
| *WPP* | 193,9 | 449 | 193,9 |
| *SES* | 174,5 | 436,8 | 174,5 |
| *BSU* | 2,8 | 4,4 | 2,8 |
| **South** | **Total** | **9843,3** | **10332,9** | **9843,3** |
| *TPP* | 6321 | 6392,2 | 6321 |
| *GTPP* | 191 | 145,4 | 191 |
| *HPP* | 2912,6 | 2783,1 | 2912,6 |
| *WPP* | 209,9 | 246,4 | 209,9 |
| *SES* | 208,8 | 765,8 | 208,8 |
| **Western** | **Total** | **12099,3** | **12165,2** | **0,5%** |
| *TPP* | 6742,5 | 6337,3 | -6,0% |
| *GTPP* | 5132,6 | 5549,7 | 8,1% |
| *WPP* | 221,3 | 275,3 | 24,4% |
| *SES* | 2,9 | 2,9 | 0,0% |

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

In January-November 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 Northern and East Kazakhstan regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Region** | **January-November** | | **Δ, %** |
| **2019** | **2020** |
| 1 | Akmola | 3 978,7 | 4 157,0 | 4,5% |
| 2 | Aktobe | 3 485,7 | 3 444,9 | -1,2% |
| 3 | Almaty | 6 264,4 | 6 475,2 | 3,4% |
| 4 | Atyrau | 5 314,0 | 5 646,8 | 6,3% |
| 5 | East Kazakhstan | 8 887,9 | 8 666,8 | -2,5% |
| 6 | Zhambyl | 2 116,7 | 2 089,0 | -1,3% |
| 7 | West Kazakhstan | 1 938,1 | 2 022,3 | 4,3% |
| 8 | Karaganda | 14 987,1 | 14 904,8 | -0,5% |
| 9 | Kostanay | 854,0 | 964,1 | 12,9% |
| 10 | Kyzylorda | 378,1 | 454,3 | 20,2% |
| 11 | Mangystau | 4 847,2 | 4 496,1 | -7,2% |
| 12 | Pavlodar | 38 424,7 | 39 403,0 | 2,5% |
| 13 | North Kazakhstan | 3 132,3 | 3 044,6 | -2,8% |
| 14 | Turkestan | 1 084,1 | 1 314,4 | 21,2% |
|  | **Total for RoK** | **95 693,0** | **97 083,3** | **1,5%** |

# *Electricity generation by associated generation*

In January-November 2020, electricity production from associated generation totaled 47.1 billion kWh, which is comparable to the same period in 2019 (42.5 billion kWh). Meanwhile, compared to January-November 2019, the share of associated generation increased slightly to 48.6% of the total electricity generation in Kazakhstan.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | | **2020** | |
| **January-November** | **share in the Republic of Kazakhstan, %** | **January-November** | **share in RoK, %** |
| 1 | ERG | **16 802,6** | **17,6%** | **17 125,9** | **17,6%** |
| 2 | Kazakhmys Energy LLP | **6 778,3** | **7,1%** | **6 606,9** | **6,8%** |
| 3 | Kazzinc LLP | **2 842,5** | **3,0%** | **2 683,2** | **2,8%** |
| 4 | Arcellor Mittal JSC | **2 430,3** | **2,5%** | **2 599,2** | **2,7%** |
| 5 | KKS LLP | **6 003,6** | **6,3%** | **5 869,8** | **6,0%** |
| 6 | CAEC | **6 318,1** | **6,6%** | **6 374,2** | **6,6%** |
| 7 | Zhambyl GRES JSC | **1 665,7** | **1,7%** | **1 568,5** | **1,6%** |
| 8 | Oil and gas enterprises | **4 699,4** | **4,9%** | **4 358,1** | **4,5%** |
|  | **TOTAL** | **47 540,5** | **49,7%** | **47 185,8** | **48,6%** |

The volume of electricity production by the energy producing organizations of Samruk-Energy JSC in January-November 2020 amounted to27 492,7mln/kWh, or an increase of 1.8% compared to the same period of 2019.

*million kWh*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | | **2020** | | **Δ2020/2019** | |
| **January-November** | **share in RoK, %** | **January-November** | **share in RoK %** | **mln kWh** | **%** |
|  | **Samruk-Energy JSC** | **27 003,7** | **28,2%** | **27 492,7** | **28,3%** | **489,0** | **1,8%** |
| *1* | *AlES JSC* | *4 788* | *5,0%* | *4 716* | *4,9%* | *-71,3* | *-1,5%* |
| *2* | *Ekibastuz GRES-1 LLP* | *16 174* | *16,9%* | *17 039* | *17,6%* | *865,1* | *5,3%* |
| *3* | *Ekibastuz GRES JSC-2 JSC* | *4 593* | *4,8%* | *4 263* | *4,4%* | *-329,9* | *-7,2%* |
| *4* | *Shardara HPP JSC* | *429* | *0,4%* | *462* | *0,5%* | *33,1* | *7,7%* |
| *5* | *Moinak HPP JSC* | *882* | *0,9%* | *864* | *0,9%* | *-17,5* | *-2,0%* |
| *6* | *Samruk-Green Energy LLP* | *3* | *0,003%* | *6* | *0,007%* | *3,17* | *98,1%* |
| *7* | *First Wind Power Station LLP* | *135* | *0,1%* | *142* | *0,1%* | *6,3* | *4,7%* |

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

# *Electricity consumption by zones and regions*

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

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

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

In January-November 2020 compared to January-November 2019, the index of industrial production amounted to 99.2%. Increase in production volumes was recorded in 11 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, buses, cars and trucks increased (107%).

In North-Kazakhstan region there was an increase in uranium ore mining, production of processed milk, butter, flour and non-self-propelled freight cars increased (107%).

In Akmola oblast, production of copper and gold-containing concentrates increased, production of portland cement, gold in gold doré alloy, unprocessed gold, tractors and combine harvesters increased (106.6%).

In West Kazakhstan region due to increase in gas condensate extraction the index of industrial production amounted to 104.3%.

In Almaty city the production of beer, leather shoes, medicines and cans of ferrous metals increased (104.2%).

In Nur-Sultan city, production of refined gold, diesel locomotives and railroad cars increased (103.6%).

In Aktobe region due to the increase in the volume of industrial services, the index of industrial production amounted to 102.3%.

In Zhambyl region, phosphate rock extraction increased, production of orthophosphoric acid, phosphate fertilizers and ferrosilicomanganese increased (102.1%).

In Almaty region, production of confectionery and chocolate, soft drinks, mounting panels and instrument panels increased (102%).

In Karaganda region there was an increase in production of copper concentrates, production of coke, flat rolled products, refined gold, blistered and refined copper increased (101.4%).

In Pavlodar region there was an increase in copper concentrates extraction, production of parts of railroad locomotives, streetcar motor cars and rolling stock increased (100.8%).

In East Kazakhstan region due to the reduction of copper concentrates extraction, decrease in production of natural uranium, coins and medals the index of industrial production amounted to 99.6%.

In Turkestan region due to the reduction of uranium ore mining and decrease in production of natural uranium the index of industrial production amounted to 97.9%.

In Shymkent city due to the reduction in production of kerosene, diesel fuel, fuel oil and vacuum gas oils the industrial production index amounted to 97.7%.

The index of industrial production in Atyrau region amounted to 95%, Mangistau region - 92.6% and Kyzylorda region - 87.3% 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-November 2020, electricity consumption by large consumers decreased by 1.62% compared to the same period in 2019.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Consumer** | **January-November** | | |
| **2019** | **2020** | **Δ, %** |
| 1 | Arcelor Mittal Temirtau JSC | 3 369,6 | 3 356,0 | 0% |
| 2 | AZF (Aksu) TNK Kazchrome JSC | 5 308,6 | 5 194,7 | 3% |
| 3 | Kazakhmys Smelting LLP | 1 101,7 | 1 074,7 | 2% |
| 4 | Kazzinc LLP | 2 608,2 | 2 610,0 | 0% |
| 5 | Kazzinc JSCSokolovsko-Sarbay State Enterprise | 1 566,9 | 1 661,0 | -6% |
| 6 | Kazakhmys Corporation LLP | 1 169,4 | 1 126,0 | 5% |
| 7 | AZF (Aktobe) TNK Kazchrome JSC | 2 943,5 | 2 896,5 | 1% |
| 8 | RSE Kanal im. Satpayev | 259,4 | 190,0 | 25% |
| 9 | Kazphosphate LLP | 2 007,8 | 2 033,7 | -1% |
| 10 | NDFZ JSC (part of Kazphosphate LLP) | 1 759,8 | 1 783,1 | 0% |
| 11 | Taraz Metallurgical Plant LLP | 243,2 | 151,0 | 53% |
| 12 | Ust-Kamenogorsk Titanium and Magnesium Combine JSC | 612,7 | 793,5 | -18% |
| 13 | Ust-Kamenogorsk Titanium and Magnesium Combine JSCTengizchevroil | 1 675,5 | 1 737,7 | -3% |
| 14 | JSC " PAZ "(Pavlodar Aluminum Plant) | 869,1 | 866,0 | 1% |
| 15 | JSC " KEZ "(Kazakhstan Electrolysis Plant) | 3 446,0 | 3 431,7 | 0% |
| 16 | Temirzholenergo LLP | 1 348,9 | 1 449,2 | -8% |
| 17 | JSC "KEGOC" | 4 169,8 | 4 667,0 | -13% |
| **Total** | | **32 700,5** | **33 283,6** | **-1,62%** |

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Name** | **January-November** | | **Deviation mln kWh** | **Δ, %** |
| **2019** | **2020** |
| **I** | **Samruk-Energy JSC** | **6 777,4** | **6 569,2** | **-208,2** | **-3,1%** |
| *1.* | *Bogatyr Komir LLP* | *271,3* | *270,4* | *-0,9* | *-0,3%* |
| *2.* | *AlatayZharykCompany JSC* | *880,4* | *865,9* | *-14,5* | *-1,6%* |
| *3.* | *AlmatyEnergoSbyt LLP* | *5 625,7* | *5 432,8* | *-192,9* | *-3,4%* |

# **Coal**

# *Steam coal production in Kazakhstan*

According to information from the Statistics Committee of the Ministry of Energy of Kazakhstan, Kazakhstan produced 98 134,2 mln tons of hard coal in the period January-November 2020, which is 2% lower than in the same period in 2019 (100 020,2 thousand tons).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Oblast** | **January-November** | | **Δ, %** |
| **2019** | **2020** |
| 1 | Pavlodarskaya | 61 493,6 | 60 326,90 | 97% |
| 2 | Karagandinskaya | 30 967,7 | 30 669,7 | 98% |
| 3 | East Kazakhstan | 7 243,9 | 6 998,5 | 99% |
|  | **Total in RoK** | **100 020,2** | **98 134,2** | **98%** |

# *Coal production by Samruk-Energy JSC*

In January-November 2020, Bogatyr Komir LLP produced 39 117 thousand tons, which is 3.5% less than in the corresponding period of 2019 (40 539 thousand tons).

# *Coal sales by Samruk-Energy JSC*

In January-November 2020, 39 208 thousand tons were sold, including:

- 29 9858 thousand tons were delivered to the domestic market of the Republic of Kazakhstan, which is 1.2% less than in the corresponding period of 2019 (30 338 thousand tons);

- exported to Russia – 9 224 million tons, which is 7.9% more than in the corresponding period of 2019 (10 012 thousand tons).

*thousand tonnes*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Region** | **Sales volume, thousand tonnes** | | **Δ, %** |
| **January-November 2019** | **January-November 2020** |
| Total exports to the domestic market of the Republic of Kazakhstan | | **30 338** | **29 985** | **98,8%** |
| Total exports to the Russian Federation | | **10 012** | **9 224** | **92,1%** |

As per the figures for January-November 2020, as compared to the same period in 2019, the Company has seen an increase in coal sales by 2.8%.

# **Renewable energy sources**

The volume of electricity produced by renewable energy facilities (SES, wind farms, BGS, small hydroelectric power plants) in January-November 2020 amounted to 2 915.3 million kWh. Compared to January-November 2019 (1 777.1 million kWh), the increase was 64%.

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | | **2020** | | **Deviation 2020/2019** | |
| **January-November** | **share in the Republic of Kazakhstan, %** | **January-November** | **share in the Republic of Kazakhstan, %** | **mln kWh** | **%** |
|  | **Total output in the Republic of Kazakhstan** | **95693,1** | **100%** | **97083,2** | **100,0%** | **1390,1** | **1,5%** |
| **I** | **Total RES in the Republic of Kazakhstan, including by zones** | **1777,1** | **1,9%** | **2915,3** | **3,0%** | **1138,2** | **64,0%** |
| 1. | *Northern Zone* | *534,2* | *30,1%* | *1024,2* | *35,1%* | *490,0* | *91,7%* |
| 2. | *Southern zone* | *1018,7* | *57,3%* | *1559,2* | *53,5%* | *540,5* | *53,1%* |
| 3. | *Western Zone* | *224,2* | *0,0%* | *331,9* | *11,4%* | *107,7* | *0,0%* |
| **II** | **Total RES in the Republic of Kazakhstan, including by type** | **1777,1** | **1,9%** | **2915,3** | **3,0%** | **1138,2** | **64,0%** |
| 1. | *SES* | *386,3* | *21,7%* | *1259,1* | *43,2%* | *872,8* | *225,9%* |
| 2. | *Wind farms* | *625,1* | *35,2%* | *968,2* | *33,2%* | *343,1* | *54,9%* |
| 3. | *Small hydroelectric* | *762,9* | *42,9%* | *683,6* | *23,4%* | *-79,3* | *-10,4%* |
| 4. | *Biogas plants* | *2,8* | *0,2%* | *4,4* | *0,2%* | *1,6* | *0,0%* |

In January-November 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-November** | **share in the Republic of Kazakhstan, %** | **January-November** | **share in the Republic of Kazakhstan, %** | **mln kWh%** | **%** |
|  | ***Electricity production in the Unified Energy System of the Republic of Kazakhstan*** | **95693,1** | **100,0%** | **97083,2** | **100%** | **1390,1** | **1,5%** |
| 1. | Production of "clean" electricity (RES + Large hydroelectric power plants) | *9356,7* | *9,8%* | *12005,2* | *12,4%* | *2648,5* | *28,3%* |
| 2. | Production of "clean" electricity (RES excluding Large hydroelectric power plants) | *1777,1* | *1,9%* | *2915,3* | *3,0%* | *1138,2* | *64,0%* |

Electricity generation by RES facilities of Samruk-Energy JSC (SES, WES, small HPPs) in January-November 2020 amounted to 303.7 mln kWh or 10.4% of the total volume of electricity generated by RES facilities, which is 4.8% lower compared to the same period of 2019 (in January-November 2019, the Company's RES generation amounted to 318.9 mln kWh, and the Company's RES share was 17.9%).

The Company's share in the production of "clean" electricity (SES, RES, small and large HPPs) for January-November 2020 decreased by 8% (2,509.6 million kWh) compared to the same period of 2019. (2,728.7 million kWh).

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | | **2020** | | **Deviation 2020/20/2019.** | |
| **January-November** | **share in the Republic of Kazakhstan, %** | **January-November** | **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) | **2728,7** | **29,2%** | **2509,6** | **20,9%** | **-219,1** | **-8,0%** |
| 2. | Production of "clean" electricity by JSC "Samruk-Energy" (SES, wind farms and small hydroelectric power plants), incl.: | **318,9** | **17,9%** | **303,7** | **10,4%** | **-15,2** | **-4,8%** |
| 3. | *Cascade of small hydroelectric power plants of "AlES" JSC* | *180,3* | *10,1%* | *155,7* | *5,3%* | *-24,6* | *-13,6%* |
| 4. | *Samruk-Green Energy LLP* | *3,2* | *0,2%* | *3,7* | *0,1%* | *0,5* | *15,6%* |
| 5. | *First Wind Power Station LLP* |  |  | *2,6* | *0,3%* |  |  |

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

# **Centralized electricity trading by KOREM JSC**

*(Information provided by KOREM JSC)*

According to the results of centralized trades in electricity in November 2020, no deals were concluded.

For the same period of 2019, the total volume of centralized trades were concluded 38 transactions of 294,528 thousand kWh for a total amount of 1,700,084.52 thousand tenge (excluding VAT). The table below shows the dynamics of prices of transactions concluded at centralized trades in November 2019-2020.

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **November** | **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** | **7,3** | **7,315** | **5,76** | **5,76** | **-** | **-** |
| **2020** | **-** | **-** | **-** | **-** | **-** | **-** |

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

According to the results of spot trades in November 2020 no deals were concluded.

The table below shows the final results of spot trades in "day-ahead" mode for November 2020.



The table shows that the total demand amounted to 43,536 thousand kWh, while the supply amounted to 0 thousand kWh. Unsatisfied demand volume in November 2020 amounted to 43,536 thousand kWh. In the process of spot trading, the total number of bids accepted into the trading system was -50, including 50 bids from buyers and 0 bids from sellers.

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

According to the results of trades held in November 2020, no deals were concluded. According to the results of spot trades held in November 2019, no deals were also concluded.

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

According to the results of trades for medium- and long-term periods in November 2020 no deals were concluded.

Compared to the same period of 2019 in November 2020, there was a 100% decrease in the volume of trades for the medium- and long-term period in November 2020.

In November 2019, 25 transactions with the volume of 292,200 thousand kWh for the total amount of 1,683,072 thousand tenge (excluding VAT) were concluded in the bidding for the medium- and long-term period. The minimum and maximum price for this type of centralized bidding was 5.76 tenge/kWh (excluding VAT).

# **Export-import of electric energy**

In January-November 2020, the main direction of electricity export-import of the RK was the Russian Federation (export to the Russian Federation – 974.2 mln kWh, import from the Russian Federation –1 078.1 mln kWh). KEGOC – 9 236.2 mln kWh in order to balance electricity production-consumption. Electricity import from the Russian Federation in the reporting period in the amount of 842.3 mln kWh was carried out in order to balance production-consumption of electricity.

million kWh

| **Name** | **January-November** | | **Δ 2020/2019гг.** | |
| --- | --- | --- | --- | --- |
| **2019** | **2020** | **mln kWh** | **%** |
| **Kazakhstan's exports** | **-4 278,4** | **-2 017,6** | **2 260,8** | **-52,8%** |
| **to Russia** | *-4 272,9* | *-974,2* | *3 298,7* | *-77,2%* |
| **to Central Asian ECO** | *-5,6* | *-1 043,4* | *-1 037,8* | *18677,6%* |
| **Kazakhstan's imports** | **1 201,6** | **1 392,9** | **191,3** | **15,9%** |
| **from Russia** | *1 198,3* | *1 078,1* | *-120,2* | *-10,0%* |
| **from Central Asian ECO** | *3,3* | *314,8* | *311,5* | *9331,5%* |
| **Balance-flow " + "deficit," - " excess** | **-3 076,8** | **-624,7** | **2 452,2** | **-79,7%** |

# **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 November 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 November 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 (November 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 November 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.

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| **№** | **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 November 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 interstate  power 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

Severelectro: The preliminary version announced at the Bishkek thermal power plant has not been confirmed that the cause of the system accident was a short circuit in the 110 kV cable line

The preliminary version announced at the Bishkek CHP that the cause of the system accident was a short circuit in the 110 kV cable line feeding from the OPU (open switchgear) Bishkek thermal power plant 110 kV Bishkek substation (equipment of JSC Severelectro) has not been confirmed. This is stated in the message of JSC Severelectro dated October 30.

On October 29, after a system accident at the Bishkek thermal power plant, the staff of Severelectro OJSC repaired the 110 kV cable line of the TPP-B – PS Bishkek-1 and conducted a comprehensive laboratory test of the 110 kV cable line. The test results showed that the cable line complies with technical standards, the report says.

On October 30, at 15:45, the 110 kV CC of the TPP-B — PS Bishkek-1 was put into operation at idle. At 16-13 hours, the T-1 transformer was put into operation at the 110-35/6 Bishkek substation. The load was 140 A. These measures confirm the serviceability of the 110kV cable line, the distribution company writes.

What happened at the Bishkek CHP plant was told in the National Energy Holding.

Today, on October 29, the equipment protection system was activated at the Bishkek CHP. The reason is a short circuit in the cable line feeding from the OPU (open switchgear) Bishkek thermal power plant 110 kV "Bishkek" substation (equipment of JSC "Severelectro"). Because of this, 7 AT (autotransfomator) at the Bishkek CHP were turned off, which led to the activation of the Bishkek CHP equipment protection system and the boilers and turbo generators at the CHP were automatically turned off. Emergency valves worked, the equipment dropped excess steam. There was no explosion, fire or accident.

The mode of electric power generation, heat supply and hot water has been restored, the report says.

On the afternoon of October 29, part of Bishkek was left without electricity. The electricity went out at about 13:10.

The Government has approved the Regulation on working conditions for the supply of electricity using renewable energy sources

The Government, by Resolution No. 525 of October 30, 2020, approved the Regulation on the Conditions and Procedure for the Implementation of Activities for the generation and supply of electric energy using Renewable energy sources. This is reported on the government's website.

This is done to create conditions for the development of renewable energy sources.

As stated in the regulation, the authorized state body for policy development in the field of energy:

1) develops and approves quotas for the capacity of renewable energy installations, the installed capacity for each type of renewable energy for certain territorial administrative units, and also updates data on the availability of quotas for the capacity of renewable energy installations, with information posted on the official website;

2) maintains the state Register of renewable Energy entities and registers renewable energy entities that have expressed their intention and/or are carrying out activities in the field of renewable energy;

3) has the right to conduct a competitive selection for the construction of renewable energy installations, prepare a preliminary feasibility study of the project in accordance with the procedure established by the legislation in the field of public-private partnership, and apply to the authorized state bodies in the field of regulation of land relations and local self-government bodies with a petition for the allotment of a land plot in accordance with the land legislation of the Kyrgyz Republic for the construction of renewable energy -installations;

4) has the right to conclude an agreement with a renewable energy entity on the intention to invest in the construction of a renewable energy facility;

5) has the right to initiate the procedure for termination (cancellation) of the right to use a land plot to the authorized state bodies in the field of regulation of land relations in cases of use of a land plot in violation of its intended purpose or non-use of a land plot provided for the construction of a renewable energy facility within 3 (three) years, in accordance with the procedure established by the legislation of the Kyrgyz Republic in in the sphere of land legal relations;

6) interacts with the authorized state body for water resources and other authorized bodies on issues of monitoring and control over the targeted use of land plots allocated for the construction of renewable energy facilities;

7) provides legal and organizational assistance to renewable energy entities during the approval procedure in state bodies of projects for the construction of facilities for the use of renewable energy;

8) monitors and controls the connection of renewable energy facilities to the electric networks of energy transmission organizations in accordance with the legislation of the Kyrgyz Republic in the field of energy;

9) monitors the use of renewable energy sources by taking into account and analyzing the energy potential of renewable energy sources, the level of their development and the share of electric and thermal energy production in the total energy production in the Kyrgyz Republic;

10) provides interested parties with timely, complete and reliable information concerning the activities of renewable energy entities, quotas and the volume of quotas provided.

Recognized as invalid:

1) Government Resolution No. 175 dated March 24, 2017 "On Approval of the Regulations on the Tender for the Right to Build Small Hydroelectric Power Plants in the Kyrgyz Republic";

2) Resolution "On Amendments to the Resolution of the RCC "On approval of the Regulations on the Tender for the Right to build small hydroelectric power plants in the Kyrgyz Republic" dated March 24, 2017 No. 175" dated June 14, 2017 No. 377.

In November-December, we are ready to receive 500 million kW.h from Kazakhstan, — General Director of "Electric stations".

In November-December, we are ready to receive 500 million kWh from Kazakhstan, Director General of JSC "Electric Stations" Zholdoshbek Achikeev said at a meeting of the Jogorku Kenesh on November 5.

Earlier, deputy Baktybek Turusbekov asked how much electricity is needed for the passage of the autumn-winter period.

As J. said . Achikeev, in general, today 11 billion 600 million kW.h has been worked out, the annual plan is 14 billion 454 million kWh.

When asked by the deputy whether there will be an export/import of electricity, Zh. Achikeev said that today all state procedures have been completed for the import of 500 million kW.h from Kazakhstan, the government issued a decree.

"For November-December 500 million kW.h is ready to receive. The price is 2.4 cents, there are such agreements," Zh. Achikeev.

Kyrgyzstan will buy electricity from Kazakhstan at 2.4 cents per 1 kWh

Kazakhstan will supply Kyrgyzstan with 500 million kWh of electricity on an even daily schedule at a price of 2.4 cents (almost 17 tyyns at the current exchange rate) per 1 kWh. Representatives of the water management and energy departments of the republics came to this result of the negotiations, Electric Stations OJSC reported.

The achieved price for electricity imports is more than acceptable, according to the company. Thus, during the negotiations on the import of electricity to the Kyrgyz Republic, the Tajik side offered a price of 3 cents per 1 kWh, the Kazakh side 2.5 cents per 1 kWh, arguing that it signed an agreement with Uzbekistan for 2020 at the same price.

According to the government order dated September 18, JSC "Electric Stations" concluded an agreement with LLP "Ekibastuzskaya GRES-1 named after Bulat Nurzhanov" on the supply of electricity for the period from November to December 2020.

Currently, it is expected to start the supply of electricity in the amount of up to 500 million kWh based on the technical capabilities of the generation of Ekibastuz GRES-1 and the capacity of the cross-sections of electric networks, Electric Stations added.

The company recalled that this decision was made in connection with the lack of water to preserve water and energy resources and provide the necessary amount of water in the Toktogul reservoir and to cover the domestic electricity needs of the Kyrgyz Republic.

The "Electric stations" named the reasons for the import of electricity from Kazakhstan at 2.4 cents per 1 kWh

JSC "Electric Stations" explained the need to import electricity to Kyrgyzstan during the heating period of 2020-2021.

"Since 2019, there has been a low-water cycle in the Naryn-Syrdarya River basin. By the beginning of 2020, the volume of water in the reservoir of the Toktogul HPP was 14.9 billion cubic meters, which is 1.8 billion cubic meters less than last year's figure. By the end of the autumn-winter period 2019-2020 — on April 1, 2020 — the volume of water amounted to 11.6 billion cubic meters. By October 1, 2020, the volume of water increased to 15.2 billion cubic meters, which is 2 billion cubic meters below the level of 2019. The actual inflow of water to the Toktogul reservoir in the growing season of 2020 amounted to 90% of the average annual norm," the report says.

In this regard, in order to preserve water and energy resources and cover domestic electricity needs, Kyrgyzstan needs to import electricity.

"For this purpose, the protocol of negotiations between representatives of the water and energy departments of Kyrgyzstan and Kazakhstan dated May 26, 2020 was signed. According to the agreement, Kazakhstan will supply electricity to Kyrgyzstan in the period from September to December 2020 in the amount of 500 million kWh according to an even daily schedule. The price will be 2.4 cents per 1 kWh," the message says.

As the company explains, this is the optimal cost, since during the negotiations the Tajik side offered a price of 3 cents per 1 kW.and the Kazakh side — 2.5 cents per 1 kWh, arguing that it signed an agreement with Uzbekistan for 2020 at the same price.

According to the order of the government dated September 18, 2020, JSC "Electric Stations" concluded an agreement with LLP "Ekibastuz GRES-1 named after Bulat Nurzhanov" on the supply of electricity from Kazakhstan to Kyrgyzstan.

Currently, it is expected to start the supply of electricity from Kazakhstan in the amount of up to 500 million kWh, based on the technical capabilities of the generation of EGRES-1 and the capacity of the cross-sections of electric networks.

The head of the National Energy Holding instructed the "Electric Stations" to launch the hydroelectric unit of the At-Bashinskaya HPP by December 10

Chairman of the Board of the National Energy Holding Nurbek Kozubekov visited the dam of the At-Bashinskaya HPP, got acquainted with the repair work carried out, the course of reconstruction and instructed the management of JSC "Electric Stations" to launch the third hydroelectric unit of the At-Bashinskaya HPP by December 10 of this year.

According to the NEHC, Kozubekov got acquainted with the activities of the At-Bashinskaya HPP, the Naryn enterprise of high-voltage electric Networks (NPVES) and the Naryn branch of JSC Vostokelectro as part of the autumn-winter period.

Also, the head of the holding was told about the issues of maintenance of electric networks and plans for the coming year of the Naryn branch of JSC Vostokelectro.

As a result, the heads of energy companies and energy enterprises were instructed to carry out the entire range of measures to ensure the stable operation of the power system.

Reference:

According to the project, all four hydraulic units, two power transformers will be replaced, and the elements of the hydroelectric power plant control system will be updated. It is expected that almost all the hydro-mechanical equipment will be reconstructed.

The project "Reconstruction of the At-Bashinskaya HPP" is aimed at improving safety, improving reliability, increasing the stability of the network and units, as well as reducing subsequent activities for the operation and maintenance of the station.

The importance of reconstruction and modernization of the At-Bashinskaya HPP for the region is key. The HPP covers 30% of the region's electricity needs and regulates the mains voltage and load in winter.

As a result, productivity will increase, the installed capacity of the HPP will increase by up to 10%, the service life will be extended by 35-40 years, as well as technical losses of the power plant will decrease, and safety for personnel will improve.

In 10 months, the "Electric stations" have generated about 11.4 billion kW.h of electricity

The volume of electricity generation of JSC "Electric Stations" for 10 months amounted to 11 billion 457.7 million kWh, which is 14.7 million kWh less than in the same period of 2019 (11 billion 472 million kWh). This was announced on November 20 by the chairman of the National Energy Holding Nurbek Kozubekov at a press conference in Bishkek.

As for the procurement of fuel at the Bishkek CHP, as of November 20, the remaining coal in warehouses leaves 299.1 thousand tons: 67 thousand tons of Kazakh coal, 326.4 thousand tons of Kara-Kech coal and 29 thousand tons of Tashkent coal were imported. Also, 20 thousand tons of fuel oil were harvested for the Bishkek thermal power plant under an agreement with Kyrgyzneftegaz OJSC.

The energy companies as a whole completed the repair campaign in accordance with the planned tasks.

JSC "Electric Stations" calculated the operating mode of the Bishkek thermal power plant during the heating period and determined the structure of fuel consumption, taking into account the water and energy balance for 2020 and the first quarter of 2021.

The accumulation of water in the Toktogul reservoir on November 20 amounted to 14.2 billion cubic meters. Last year, the volume at this time was 16.6 billion cubic meters. This means that this year this volume is 2.3 billion cubic meters less, N. Kozubekov added.

In some power companies, there is an increase in outages, — National Energy Holding.

In some companies, there is an increase in outages, the head of the National Energy Holding Nurbek Kozubekov said during a working trip to Issyk-Kul region in order to familiarize himself with the readiness of the equipment of the facilities of JSC "National Electric Grid of Kyrgyzstan" and JSC "Vostokelectro" for the autumn-winter period.

According to the press service, Emil Kudanaliev, General Director of JSC "NESK", informed about the preparatory repair work, replacement and reconstruction of the main equipment to improve the operating conditions and reliability of high-voltage substations in the region.

According to him, in preparation for the autumn-winter period, the Issyk-Kul Enterprise of High-voltage Electric Networks (IPVES) carried out major repairs of equipment at 7 substations, routine repairs at 14 substations. Major repairs of 110 – 500 kV power lines were carried out on 230 km, maintenance was carried out on 1511.6 km of transmission lines.

N.Kozubekov visited the areas of electric networks (RES) JSC Vostokelectro.

The company's CEO Almas Zhumakadyrov said that all tasks were completed in full and on time.

JSC Vostokelectro installed 26 additional transformer substations (KTP) of 6-10/0.4 kV for 10 months of 2020 in Issyk-Kul region, 18.4 km of 10-0.4 kV overhead lines were built and 57.2 km of 10-0.4 kV overhead lines were reconstructed. 52 overloaded power transformers were also replaced with high power. Current and major repairs have been carried out in full.

"In preparation for the autumn-winter period, all companies were instructed to carry out a repair campaign aimed at reducing the risks of emergency outages. Despite this, there is an increase in outages in some companies," N. Kozubekov said.

It was instructed to study each case of an emergency situation and determine the personal responsibility of the heads of structural divisions of power companies for the increase in emergency shutdowns.

The head of the energy holding also inspected the availability of the necessary materials in the warehouses of substations and RES, equipment with transport equipment and familiarized himself with the working conditions of employees of emergency repair teams, the report says.

Kyrgyzstan has started to receive electricity from Kazakhstan. Energy companies promise not to raise tariffs

Under the previous government, a government decree was signed, according to which, in order to save water in the Toktogul HPP so that it would work less, Kyrgyzstan concluded an agreement with the Kazakh side on the import of electricity in the amount of 500 million kWh.

The decrease in the water level is associated with a period of low water.

Power engineers do not plan to raise the electricity tariff.

The tariff policy was approved for a short—term period - for three years, i.e. until 2022 inclusive. This was announced at a press conference by Mirgul Aidarova, Deputy director of the State Agency for Regulation of the Fuel and Energy Complex.

According to her, electricity tariffs have not changed in this document.

"The limit of 700 kWh. and for high-altitude areas of 1000 kWh. was preserved, up to the limit of 77 tyyns, all subscribers pay regardless of regions and above the limit — 2.16 soms per 1 kWh. Other subscribers also retained 2.24 soms, pumping stations pay 77.9, this is a social tariff. New subscribers have also been introduced, these are orphanages, a new tariff has been introduced for them — 1.58 soms and new mining subscribers, a higher tariff has been set for them — 2.91 soms," Aidarova said.

She noted that next year the development of a new tariff policy will begin, possibly for 3 or 5 years.

The State Environmental Inspectorate announced the results of the investigation into the accident at the Bishkek CHP

November 27, 2020

The State Environmental Inspectorate of Kyrgyzstan told the reasons for the emergency at the Bishkek CHP. According to the press service of the ministry, on October 29, 2020, a technological violation occurred in the Kyrgyz energy system, affecting the equipment of organizations producing, transmitting and distributing electric and thermal energy that are part of the Kyrgyz energy system.

According to the Government decree, a special interdepartmental commission appointed by the order of the State Environmental Inspectorate was investigating this violation.

It is noted that the commission conducted a comprehensive and objective investigation of the incident, reviewed all the investigation materials, explanatory notes, extracts from operational logs, oscillograms of recording devices provided by energy companies.

It was established that during this technological violation there were no facts of damage to the main and auxiliary equipment of power companies, facts of intentional damage to third-party organizations and individuals.

At the same time, it was established that the cause of steam emission from the boilers of the Bishkek CHP was the activation of mechanical protections on the boiler equipment in order to prevent damage to the boiler equipment from excessive pressure of the generated steam and to protect the maintenance personnel from injury.

Following the results of the commission's work, administrative penalties in the form of fines were applied in accordance with the Code of the Kyrgyz Republic "On Violations" for violations of the requirements of the rules on technical safety in relation to the personnel of JSC "Electric Power Stations", JSC "National Electric Networks of Kyrgyzstan" and JSC "Severelectro", as well as extraordinary knowledge checks on electrical safety were assigned to the personnel of JSC "Electric stations", JSC "National Electric Networks of Kyrgyzstan".

All branches of JSC "National Electric Grid of Kyrgyzstan" have received winter readiness passports.

Branches of JSC "National Electric Network of Kyrgyzstan" — enterprises of high—voltage electric networks - Chui, Talas, Osh, Jalal-Abad, Issyk-Kul and Naryn regions received certificates of readiness to work in the autumn-winter period. This is reported by the press service of the NASC.

The decision to issue readiness passports was made following a detailed review of the acts of special commissions at a meeting of the permanent headquarters of JSC "National Electric Grid of Kyrgyzstan" for the preparation and passage of the autumn-winter period.

The readiness passport is the main document confirming the fulfillment of all necessary conditions to ensure reliable and stable operation of the power grid complex in the conditions of autumn-winter maximum loads.

Branches of the company have done a lot of work to obtain this document. All planned, current, major repairs of the main and auxiliary equipment, measures for the modernization and reconstruction of substations and power lines have been carried out, an emergency stock of materials has been formed.

Thus, as part of the preparation for the OPP of JSC "National Electric Grid of Kyrgyzstan", major repairs of equipment at 122 substations, routine repairs at 195 substations were carried out. The overhaul of the 110 – 500 kV overhead line was carried out for 369 km, the maintenance of the 110 – 500 kV overhead line was carried out for 7118.1 km. In addition, the repair of buildings, structures, vehicles was carried out, as well as work related to the prevention of flood impacts on power equipment.

Inspections of the readiness of the branches' power grids were carried out by on-site commissions. The commissions for assessing the readiness of the company's branches – enterprises of high-voltage electric networks for the passage of the 2020-2021 OZP included managers and technical specialists of the company's central office, as well as representatives of the State Inspectorate for Environmental and Technical Safety under the Government of the Kyrgyz Republic.

Republic of Belarus

On November 3, at 12:03, the first power unit of the Belarusian NPP delivered the first kilowatt-hours of electric energy to the unified energy system of the Republic of Belarus.

On November 7, the head of state visited the station and first of all congratulated everyone on the holiday. On November 7, Belarus annually opens important, breakthrough facilities that contribute to a qualitative leap in the domestic economy and improve people's living standards. According to the President, the launch of the Belarusian NPP certainly gives a special feature to this holiday.

The President drew attention to the fact that the construction of a nuclear power plant has tightened other sectors of the economy, primarily construction and production of building materials. It will also encourage the development of eco-friendly modes of transport, will allow you to save on natural gas consumption. "Huge sectors of the economy are moving forward. We have invested almost $7 billion in our economy. And if we build a second station, it will be a good incentive for economic development, a locomotive that will give movement to many sectors of the economy," the Head of State said.

For 9 years, 130 main buildings and structures of the NPP were built on an area of more than 100 hectares. With the commissioning of the first power unit, 88 facilities will be commissioned, with the commissioning of the second – 42. The service life of the station is 60 years with the possibility of extension to 100.

In total, more than 2.5 thousand people will work at the Belarusian NPP, about 60 of them are specialists from Russia and Ukraine with experience working at nuclear power plants.

About 18 billion kWh will be produced annually at the Belarusian NPP. The launch of the nuclear power plant will allow replacing about 4.5 billion cubic meters of natural gas per year. The currency burden on the budget will be reduced by more than 500 million US dollars. Greenhouse gas emissions will decrease by more than 7 million tons per year. "Uranium dioxide is used as fuel, which is made in the form of 9x13 mm tablets weighing 5 g each. Each of them replaces 350 kg of oil, 360 m3 of gas, 400 kg of coal. The tablets are placed hermetically in zirconium rods, the so-called fuel rods, which in a total of 312 pieces are combined into one heat-generating assembly. 163 such assemblies are loaded into the reactor. The total weight of the loaded fuel is 87 tons. During the subsequent fuel overload, which will take place once a year, only 25% of the initial load will be replaced. And this will be enough for the production of 18 billion kWh of electricity per year by two power units.

On November 13, Brest hosted the grand opening of a new power facility – a modern electric boiler at the Eastern Boiler House No. 2.

The opening of the new power facility was attended by Energy Minister Viktor KARANKEVICH, Director General of RUE "Brestenergo" Sergey SHEBEKO. The installation of electric boilers on power sources of RUE Brestenergo was implemented as part of the implementation of a comprehensive plan for the development of the energy sector until 2025, taking into account the commissioning of the Belarusian nuclear power plant. In total, 20 electric boilers with a total capacity of 916 MW are planned to be put into operation in the republic, including 140 MW for the Brest region. "Electric boilers will use the energy of a nuclear power plant, providing regulation of the daily schedule of loads," said Energy Minister Viktor Karankevich. "The implementation of this project will reduce the consumption of natural gas, improve the environmental situation by reducing emissions into the atmospheric air." The Eastern boiler house has been continuously providing heat to citizens for almost 50 years. The installation of modern equipment and the modernization of the existing one will allow us to reach a new level of production and organization of the workflow, in particular, to improve the working conditions of personnel. It was possible to implement this project in a short time thanks to a close-knit team of builders and power engineers. "New equipment defines new approaches to work,– Sergey SHEBEKO is sure. – In the future, we will face many tasks for the modernization of the Brest power system." In total, four boilers are installed in the Brest region. Three of them have already been put into operation. At the Eastern district boiler House No. 2 – with a capacity of 30 MW, the Southern district boiler House – with an installed capacity of 40 MW, as well as at the Western mini-CHP in Pinsk – 40 MW. The design of the installation of electric boilers was carried out by RUE "BELTEI". "The installation of electric boilers will allow regulating the minimum load of the power system after the commissioning of the Belarusian NPP by transferring excess electricity at night to electric boilers. The operation of boilers is provided only during the night power failure from 23:00 to 6:00. Excess thermal energy from electric boilers at night will begin to accumulate in hot water storage tanks, in other words, they will be charged. In the daytime, electric boilers will not work – the release of thermal energy will be carried out from storage tanks." The construction of the fourth electric boiler in the Brest region is planned at the Berezovskaya GRES.

Republic of Kazakhstan

Kazakhstan, with the support of the People's Republic of China, is launching the largest project of the Zhanatas wind power plant in Central Asia.

About a year ago, the Kazakh media spread the news about the shipment from China of the first turbine for the Zhanatass wind power plant (WPP) in Zhambyl region with a capacity of 100 MW, which is being built on an unprecedented scale for Kazakhstan. Today, from this facility, which is expected to have no equal in the field of wind energy in the whole of Central Asia, news is coming about the connection of the first batches of wind turbines and the beginning of the supply of environmentally friendly electricity to the power grid.

This project is one of the first key energy projects in the framework of cooperation between China and Kazakhstan. About how Zhanatasskaya Wind Power Plant LLP, created by the Chinese company China Power International Holding Limited (CPIH) and the Kazakh company Visor, promotes the implementation of this project, whether it is possible to meet the deadlines, what organizational and technical tasks have to be solved during the construction of this facility - these and other questions were answered in an interview by the Information the company Urumqi chief specialist of the technical department of LLP "Zhanatasskaya wind power plant" Ilyas Nusyrov.

The Government of Kazakhstan has set an ambitious task to increase the share of renewable energy sources in the country's energy system. A target has been set: it is planned to increase it to 3% in 2020, and to 10% by 2030. And our Zhanatasskaya WPP, with the full commissioning of its energy capacities, will accelerate the implementation of these tasks set by the authorities of the country.

According to experts' calculations, compared with coal-fired power plants with the same capacity, a wind farm can save 109,500 tons of coal, 1,031 tons of sulfur dioxide and 934 tons of nitrogen oxides per year, reduce carbon dioxide (greenhouse gas) emissions by 289,000 tons and smoke and dust by 322 tons, as well as reduce ash emissions and slag for 32,900 tons.

In 2021, it is planned to launch a solar power plant in Balkhash.

There is an active construction of renewable energy facilities in the Karaganda region. Four solar power plants with a capacity of 200 megawatts have been put into operation in the region. They are installed near Sarani, Zhezkazgan, Balkhash and the village of Agadyr.

In addition, there are biogas plants and a mini-hydroelectric power station in the region. The total output for all renewable energy sources by the end of 2019 amounted to 176 million kilowatt-hours, and by the end of the first quarter of this year - 54 million kilowatt-hours.

To date, the akimat of the region, together with KAZ GREEN ENERGY LLP, is implementing another project for the construction of a solar power plant near the Konyrat microdistrict in Balkhash with a capacity of 100 megawatts. The area of the territory for a solar power plant is 140 hectares. The station will consist of 192,350 double-sided photovoltaic panels. Each with a power of 520 watts. It is planned that this solar power plant will generate 170 million kilowatts of electricity per year. The end date of the first stage of the launch (50 megawatts) is August 2021. The next stage (50 megawatts) is scheduled for December 2021.

"Electricity will be supplied to the Konyrat substation. Its main consumer is the Kazakhmys group. All metal structures used in construction are made in Kazakhstan. We will employ about 25-30 people. Thanks to the launch of this solar power plant, carbon dioxide emissions will be reduced by 170 thousand tons per year. The project will pay off in about 7-8 years," says project manager, representative of KAZ GREEN ENERGY LLP Yertay Alzhanov.

Kazakhstan plans to adopt a bill stimulating the construction of maneuverable capacities in the electric power industry

This was told by the Minister of Energy of the Republic of Kazakhstan Nurlan Nogayev, during a working trip to the Almaty region, the press service of the Ministry of Energy of the Republic of Kazakhstan reports.

During the visit, Nurlan Nogayev got acquainted with the work of a solar and hydroelectric power station in the Kapchagai reservoir area, visited the construction site of a wind power station in the village of Shelek, visited the Moynak hydroelectric power station and discussed with the responsible persons the energy supply of Almaty and Almaty region.

Answering journalists' questions, Nurlan Nogayev spoke about how the government of Kazakhstan intends to stimulate the construction of maneuverable capacities in the electric power industry.

As it is known, today in Kazakhstan the surplus of electric power is accompanied by a shortage of maneuverable capacities. Electricity consumption during the day is uneven, with an increase in the evening hours and a decrease at night, requiring operational variable operation of power plants. The existing regulatory capabilities of existing power plants are insufficient, and therefore the system operator is forced to use the regulation of the Russian energy system.

The development of renewable energy and digitalization of processes — how the instructions of the President of the Republic of Kazakhstan on the development of the energy industry are being implemented.

Energy Minister Nurlan Nogayev spoke at a press conference about the implementation of the instructions given by the Head of State in the Address to the People of Kazakhstan.

At the beginning of his speech, Nurlan Nogaev spoke about the impact of the pandemic on the energy industry. Thus, 10,795 people employed in the industry were infected with COVID-19. 9,529 of them have fully recovered. The rest are currently receiving treatment.

"It is thanks to the selfless work of our colleagues that the energy system of Kazakhstan has withstood the impact of the pandemic. Despite the virus, people continued to work at power plants, oil refineries, fields, providing the country with the necessary energy," the minister said.

On behalf of the Prime Minister of the Republic of Kazakhstan Askar Mamin, an operational headquarters was established at the Ministry of Energy to monitor the situation with COVID-19, daily informing of all companies in the industry was conducted to make decisions.

"Meanwhile, for our part, we have made proposals necessary for the stable functioning of the fuel and energy complex, the preservation of jobs. The activities carried out have yielded positive results," N. Nogaev said.

The following measures were taken to support the industry:

- lifting of the ban on the export of petroleum products by road outside the Republic of Kazakhstan and the CU countries;

- exemption from payment of excise taxes of producers of excisable goods for gasoline and diesel fuel sold for export;

- the introduction of a ban on the supply of gasoline, diesel and aviation fuel to the Republic of Kazakhstan by rail, road and pipeline transport;

- zeroing the rates of export customs duties on petroleum products, including: gasoline, diesel fuel and fuel oil;

- unscheduled inspections and preventive control with visits to all subjects of small/micro entrepreneurship have been suspended;

- amendments have been made to the Rules for the Acquisition by Subsurface Users and Their contractors of goods, Works and services used in the exploration or production of hydrocarbons and uranium mining operations, allowing subsurface users to purchase goods of Kazakhstani origin from one source without conducting competitive procedures, confirmed by a certificate "ST-KZ" or an industrial certificate issued by NCE "Atameken".

The main indicators of the Ministry of Energy for 10 months of this year

According to N. Nogaev, it was planned to produce more than 90 million tons of oil in 2020. However, due to the pandemic, this figure was reduced to 85. This was caused by a decrease in economic activity in the world and a decrease in demand for oil and petroleum products. Accordingly, the oil refining index decreased from 17 to 16 million tons. At the same time, measures have been taken to prevent overflow of oil refinery tanks or reservoirs in the fields and their downtime.

This year, the production of diesel fuel and jet fuel has been systematically reduced, but the production of bitumen has been increased. In general, production of 984 thousand tons of bitumen was planned in 2020. This plan has been exceeded.

"In accordance with the instruction of the Head of State K. Tokayev, the measures taken during the pandemic and the Employment Roadmap were implemented. Many social facilities have been overhauled, ongoing repairs and landscaping have been carried out. The construction of roads was particularly intensive. As a result, the plan was exceeded, 1.1 million tons of bitumen were produced. That is, we were able to fulfill the task set for us," N. Nogaev said.

As part of the execution of the President's instructions on the development of petrochemistry, the production of deep processing products, products with high added value, a number of measures have been taken. For example, a National Industrial Petrochemical Technopark has been created in Atyrau region. Within the framework of the special economic zone, 500 thousand tons of polypropylene are produced per year. For the production of products at this enterprise, permanent employment of more than 3 thousand people will be provided.

Also in other regions of the country, various productions have started their work. In particular, a plant with a capacity of 70 thousand tons of polypropylene per year has been launched in the Pavlodar region. The production of 100 thousand tons of ointments per year has been established in the Almaty region. Similar products will be produced in Shymkent, and aromatic oil products will be produced at the Atyrau Oil Refinery.

Currently, a pool of projects worth $15 billion has been created. Of these, 90% are concentrated in the west of the country. During the implementation of these projects, more than 10 thousand specialists will be employed only during construction.

3% of the total energy produced in the country is obtained from renewable energy sources.

"The President said that in the medium term economic growth should move in the conditions of "green energy". Guided by these principles, the Ministry conducts intensive work. There are 110 renewable energy facilities with a capacity of over 1.5 thousand MW in the republic. By the end of the year, it is planned to put into operation 4 facilities with a capacity of 165 MW. If we talk in detail about the energy produced, we get 404 MW from wind, 891 MW from solar energy, 224 MW from hydro and 7.82 MW from bioenergy," the minister said.

The goal is that the share of renewable energy in the total volume of electricity production in 2020 should be 3%, by 2030 this figure should be 10%, by 2050 — all 50%.

Currently, plans for the development of hydropower have been approved by the Government. In the next 4 years, projects of 13 hydroelectric power plants, 34 wind and 12 solar will be implemented. Thus, by 2025, the Ministry plans to increase the capacity of renewable energy sources to 3 thousand MW.

An information system for accounting for crude oil and gas condensate is being created in Kazakhstan.

Currently, the Ministry of Energy, together with ICRIAP and JSC NIT, is creating an information system for accounting for crude oil and gas condensate.

According to the minister, the introduction of this system will allow automating the accounting of oil production, processing and transportation.

"This year, the information system for oil and gas condensate accounting has been launched in pilot mode. In order to gradually connect the information systems of oil turnover entities, a general scheme for equipping metering devices has been approved," the minister said.

The data in the oil and gas condensate accounting information system will be supplied through commercial metering devices and software installed by the subjects of the oil and gas industry, which in turn will allow IT companies to implement their information systems in the oil and gas market.

The effects of the introduction of ISUN will be:

- support for the adoption of operational management decisions at the state level based on operational data;

- the ability to predict the turnover of crude oil and gas condensate based on the received operational data from metering devices installed at the production facilities of the organization;

- automatic calculation of the material balance;

- automatic generation of reports based on the data received from metering devices.

In 2021, the volume of oil gas traded on electronic trading platforms will increase to 100%

This year, electronic auctions began to be held to grant the right of subsurface use for hydrocarbon raw materials.

"The acceptance of applications for the electronic auction was announced on September 1, the results will be summed up on December 23. 10 deposits are exposed. This, in turn, will ensure transparency and the flow of investments into the industry. The number of documents required to participate in an electronic auction has been reduced by 3 times. Bonuses from investors and budget revenues will increase," the minister said.

In his Message, the Head of State instructed the Ministry of Energy to gradually increase the volume of petroleum gas traded on electronic trading platforms. Next year, it is planned to put all the extracted liquefied petroleum gas up for electronic auction.

"Currently, 3.2 million tons of liquefied petroleum gas are produced in the country. Of these, 1.5 million tons are focused on the domestic market. Of these, 80% are for refueling cars with gas, 20% are for household needs of the population and projects of the petrochemical industry. A quarter of the products will be put up for auction, the rest will be distributed to the regions according to applications submitted from akimats"

A fund for the development of local content will be created in Kazakhstan.

In his Message dated September 1, 2020, the Head of State instructed the Government to prepare concrete proposals to increase the content of Kazakhstan by the end of the year.

According to Nurlan Nogayev, the Ministry is currently implementing two initiatives that can increase the share of local content in the oil and gas sector market, which are planned to be implemented in the near future. The first is the creation of a Direct Investment Fund for the development of local content. Chevron, as part of its reinvestment obligations to the Republic, plans to allocate funds in the amount of $248.5 million for the development of local content. Investments will be made in three areas: technology and IT, production of basic goods and assembly of certain types of equipment for the oil and gas sector, as well as environmental protection. It is expected that within 10 years, the positive effect of the Fund's activities on the GDP of the Republic of Kazakhstan will amount to about $ 642 million (or about 270 billion tenge).

It is assumed that a certain part of the goods and services imported at the moment will be produced domestically, which will lead to a decrease in imports by $86 million or 36 billion tenge. Secondly, it is the creation of an international center for the development of oil and gas engineering and service.

According to the Minister, the purpose of this Center is to localize the production of goods/services for the oil and gas industry of the Republic of Kazakhstan, in particular for the needs of three Operators (NCOC, KPO, TCO) by opening new production and service centers, as well as expanding the capabilities of existing domestic producers (OTP) and service companies. This center will eliminate the existing gaps among local producers/service companies in the production and supply of goods/services for the needs of operators.

At the same time, from January 1, according to the agreement, a common market, including oil and petroleum products, enters within the framework of the EAEU. Up to this point, the relationship of the EAEU members was based on bilateral agreements.

"Today we have such agreements with the Russian Federation, the issue of signing with other members of the EAEU is being worked out. Regarding the Republic of Belarus, we have reached an agreement with our Belarusian colleagues on the basic principles. To date, this agreement is undergoing internal approval in the ministries, and at the end we intend to sign it," N. Nogaev assured.

According to the Minister, the actual amount of oil and petroleum products to be supplied from Belarus under this agreement will be approved by indicative plans taking into account the capabilities and interests of Kazakhstan.

"Regarding the transportation of oil through Russia, these are the obligations of the Belarusian side. If, within the framework of the agreement, Belarus expresses a desire to take it by other transport, we will not object," the minister said.

Regarding the issue of transferring the CHP-2 in Almaty to gas, N. Nogaev stressed that this is a technologically very complex project. In order to fulfill the planned plans for the conversion of the station to gas, it is necessary to carry out certain works, solve complex tasks.

"In 2025, finally, when all eight complexes of this station will be transferred to gas. It is planned to transfer two complexes in 2022, two more in 2023, two more in 2024 and the last two in 2025. Thus, the entire CHP plant will be converted to gas in 2025. CHP-2 supplies heat, and we cannot interrupt the production cycle of this enterprise," N. Nogaev said.

Answering a question from journalists about the refusal of gas cylinders, the minister noted that it would not be possible to completely abandon explosive gas cylinders, because remote villages and some enterprises still use this gas.

"Probably, we are referring to the recent explosion, the tragic incident in Nur-Sultan. The investigating authorities will figure out what the reason is. But at the same time, I would like to note that the operation and use of gas burners is a complex technological device associated with high pressure and high temperatures. Explosions are possible, therefore, strict compliance with the requirements for the use of burners, gas equipment, and any technical equipment associated with the use of gas requires a lot of responsibility. In this regard, I would like to draw attention to these requirements being strictly observed," N. Nogaev added.

Smart technologies for the modernization of the energy system of the Republic of Kazakhstan.

Global practice clearly demonstrates that in modern realities digitalization plays an increasingly important role in the development of the economy of all countries of the world....

Kazakhstan also pays a lot of attention to the development of digitalization. The state program "Digital Kazakhstan" has been approved and is being implemented, the purpose of which is to accelerate the pace of development of the country's economy and improve the quality of life of the population through the use of digital technologies in the medium term, as well as creating conditions for the transition of the domestic economy to a fundamentally new trajectory that ensures the creation of the digital economy of the future in the long term.

The program, among others, sets the task of digitalization of industry and electric power industry, within the framework of which KEGOC JSC implements the project

"Introduction of a centralized system of emergency and regime automation control modes of operation of the Unified Electric Power System (UES)". It consists of two components: "Centralized Emergency Control System (CSPA)" and "Automatic frequency and Power Control System (APCM)".

The implementation of these projects is aimed directly at fulfilling the instructions of President Kassym-Jomart Tokayev to modernize the energy system of Kazakhstan through the development of modern smart technologies. In particular, the construction of intelligent networks (Smart Grid), the elements of which will be DSPA and ARCHM.

The launch of the first component (CSPA) will allow setting up emergency management processes in the power system of Kazakhstan in real time without the intervention of personnel, with the transition from local to centralized emergency management. This will raise the reliability of the UES to a completely different level.

The implementation of the second project (ARCHM) automates the regulation of frequencies and capacities in order to reduce to zero the deviations of the balance of power flows from the planned values at the border of the UES of Kazakhstan and the UES of Russia. This will reduce deviations in the planned balance of generation and consumption and will make it possible to avoid additional loading of the transit network with unplanned power flows.

It is noteworthy that KEGOC does not involve third-party contractors in the implementation of the above-mentioned projects, but relies solely on its assets. These technologically complex projects are implemented by a subsidiary of KEGOC JSC – Energoinform JSC.

The staff of Energoinform has considerable experience in the field of information and telecommunication technologies: design, implementation and

installation, commissioning and operation of modern information management systems and hardware and software complexes at enterprises of the energy industry and specialized IT solutions.

The commissioning of the CSPA and the ARCHM will also significantly increase the competence of Energoinform JSC, since no organization has implemented such systems so far. And the company copes with the task with honor. The implementation of projects has reached the finish line. According to the plan, the project "Centralized emergency automation system" will be completed at the end of November 2020, and the project "Automatic frequency and power control system" – at the beginning of 2021.

It is worth noting that the implementation of such complex information and telecommunication technologies has become a clear evidence of the highly qualified personnel of Energoinform JSC and has aroused the trust of major industry customers. In particular, Energoinform JSC has signed an agreement on the implementation of the ARCHM system with energy-producing organizations of Kazakhstan, including Moynakskaya HPP named after U.D. Kantaev JSC and Ekibastuzskaya GRES-1 named after Bulat Nurzhanov LLP.

Favorable conditions for the development of renewable energy are being created in Kazakhstan.

Today, on November 26, at the plenary session of the Senate of the Parliament of the Republic of Kazakhstan, the draft law "On amendments and additions to some legislative acts of the Republic of Kazakhstan on support for the use of renewable energy sources and electric power industry" was approved in the first reading, the press service of the Ministry of Energy of the Republic of Kazakhstan reports.

The main conceptual innovations of the proposed bill are:

1) stimulating the construction of maneuverable capacities;

To date, the surplus of electric power (2000 MW) in the Republic is accompanied by a shortage of maneuverable capacities. Electricity consumption during the day is uneven, with an increase in the evening hours and a decrease at night, requiring operational variable operation of power plants. The existing regulatory capabilities of existing power plants are insufficient, and therefore the system operator is forced to use the regulation of the Russian energy system. The imbalances covered by the UES of Russia reach 600-800 MW.

The development of maneuverable capacities to attract them to the regulation of production-consumption imbalances will allow redirecting the purchase of part of the deviation compensation services to power plants in Kazakhstan, instead of using Russian regulation.

The selection of projects for the creation of maneuverable generation will be carried out through the use of auction selection, which will give impetus to the construction of such sources, to select the most effective projects with minimal impact on prices for end consumers.

2) establishment of a pass-through tariff for RES support;