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**REPORT**

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

**JANUARY-DECEMBER 2020**

**MARKET DEVELOPMENT DEPARTMENT**

**January 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 108 085,8 million kWh of electricity in January-December 2020, which is 1.9% 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-December** | **Δ, %** |
| **2019** | **2020** |
| **Kazakhstan** | **Total**  | **106029,8** | **108085,8** | **1,9%** |
| *TPP* | *85955,0* | *86662,6* | *0,8%* |
| *GTPP* | *8975,6* | *9527,7* | *6,2%* |
| *HPP* | *9984,9* | *9545,8* | *-4,4%* |
| *WPP* | *701,9* | *1094,1* | *55,9%* |
| *SES* | *409,4* | *1250,7* | *205,5%* |
| *BSU*  | *3,0* | *4,9* | *63,3%* |
| **North** | **Total** | **81653,4** | **83032,0** | **1,7%** |
| *TPP* | *71310,3* | *72345,7* | *1,5%* |
| *GTPP* | *3078,5* | *3159,4* | *2,6%* |
| *HPP* | *6847,1* | *6553,0* | *-4,3%* |
| *WPP* | *232,1* | *515,9* | *122,3%* |
| *SES* | *182,4* | *453,1* | *148,4%* |
| *BSU*  | *3,0* | *4,9* | *63,3%* |
| **South** | **Total** | **11001,9** | **11565,7** | **5,1%** |
| *TPP* | *7204,3* | *7338,6* | *1,9%* |
| *GTPP* | *210,3* | *166,7* | *-20,7%* |
| *HPP* | *3137,8* | *2992,8* | *-4,6%* |
| *WPP* | *225,6* | *273,0* | *21,0%* |
| *SES* | *223,9* | *794,6* | *254,9%* |
| **Western** | **Total** | **13374,5** | **13488,1** | **0,8%** |
| *TPP* | *7440,4* | *6978,3* | *-6,2%* |
| *GTPP* | *5686,8* | *6201,6* | *9,1%* |
| *WPP* | *244,2* | *305,2* | *25,0%* |
| *SES* | *3,1* | *3,0* | *-3,2%* |

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

In January-December 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-December** | **Δ, %** |
| **2019** | **2020** |
| 1 | Akmola |  4 456,2  |  4 628,5  | 3,9% |
| 2 | Aktobe |  3 868,3  |  3 816,5  | -1,3% |
| 3 | Almaty |  6 982,9  |  7 201,8  | 3,1% |
| 4 | Atyrau |  5 842,8  |  6 261,9  | 7,2% |
| 5 | East Kazakhstan |  9 701,2  |  9 482,1  | -2,3% |
| 6 | Zhambyl |  2 372,6  |  2 388,8  | 0,7% |
| 7 | West Kazakhstan |  2 155,8  |  2 254,3  | 4,6% |
| 8 | Karaganda |  16 476,2  |  16 346,8  | -0,8% |
| 9 | Kostanay |  945,0  |  1 082,9  | 14,6% |
| 10 | Kyzylorda |  427,2  |  505,7  | 18,4% |
| 11 | Mangystau |  5 375,9  |  4 971,9  | -7,5% |
| 12 | Pavlodar |  42 728,9  |  44 336,1  | 3,8% |
| 13 | North Kazakhstan |  3 479,2  |  3 339,1  | -4,0% |
| 14 | Turkestan |  1 217,6  |  1 469,4  | 20,7% |
|  | **Total for RoK** | **106 029,8** | **108 085,8** | **1,9%** |

# *Electricity generation by associated generation*

In January-December 2020, electricity production from associated generation totaled 51.9 billion kWh, which is little less than the same period in 2019 (52.4 billion kWh). Meanwhile, compared to January-December 2019, the share of associated generation decreased slightly to 48.1% of the total electricity generation in Kazakhstan.

*million kWh*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** |
| **January-December** | **share in the Republic of Kazakhstan, %** | **January-December** | **share in RoK, %** |
| 1 | ERG | 18 545,0 | 17,5% | 18 856,2 | 17,4% |
| 2 | Kazakhmys Energy LLP | 7 443,6 | 7,0% | 7 267,5 | 6,7% |
| 3 | Kazzinc LLP | 3 093,2 | 2,9% | 2 941,3 | 2,7% |
| 4 | Arcellor Mittal JSC | 2 658,8 | 2,5% | 2 837,2 | 2,6% |
| 5 | KKS LLP | 6 645,4 | 6,3% | 6 445,7 | 6,0% |
| 6 | CAEC | 7 032,8 | 6,6% | 7 035,4 | 6,5% |
| 7 | Zhambyl GRES JSC | 1 878,8 | 1,8% | 1 809,1 | 1,7% |
| 8 | Oil and gas enterprises | 5 174,2 | 4,9% | 4 761,9 | 4,4% |
|  | **TOTAL** | **52 471,8** | **49,5%** | **51 954,3** | **48,1%** |

The volume of electricity production by the energy producing organizations of Samruk-Energy JSC in January-December 2020 amounted to31 385,4mln/kWh, or an increase of 3.9% compared to the same period of 2019.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Δ2020/2019** |
| **January-December** | **share in RoK, %** | **January-December** | **share in RoK %** |  **mln kWh** | **%** |
|  | **Samruk-Energy JSC** | **30 200,3** | **28,5%** | **31 385,4** | **29,0%** | **1 185,1** | **3,9%** |
| *1* |  *AlES JSC* | *5 397* | *5,1%* | *5 335* | *4,9%* | *-62,3* | *-1,2%* |
| *2* | *Ekibastuz GRES-1 LLP* | *18 301* | *17,3%* | *19 466* | *18,0%* | *1 164,9* | *6,4%* |
| *3* |  *Ekibastuz GRES JSC-2 JSC* | *4 929* | *4,6%* | *4 974* | *4,6%* | *45,7* | *0,9%* |
| *4* |  *Shardara HPP JSC* | *465* | *0,4%* | *513* | *0,5%* | *48,6* | *10,5%* |
| *5* | *Moinak HPP JSC* | *951* | *0,9%* | *930* | *0,9%* | *-22,0* | *-2,3%* |
| *6* | *Samruk-Green Energy LLP* | *3* | *0,003%* | *7* | *0,007%* | *4,04* | *121,4%* |
| *7* | *First Wind Power Station LLP* | *153* | *0,1%* | *159* | *0,1%* | *6,1* | *4,0%* |

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

# *Electricity consumption by zones and regions*

According to the data of the System Operator, in January-December 2020, there was an increase by 2% in the electricity consumption in the Republic compared to the indicators of January-December 2019. Thus, in the northern zone consumption increased by 2%, western zone by 1%, and in the southern zone by 3%.

 *million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Name** | **January- December 2019** | **January-December 2020** | **Δ, million kWh** | **Δ, %** |
| **I** | **Kazakhstan** | **105 193,1** | **107 344,8** | **2 151,7** | **2%** |
| 1 | Northern zone | 69 053,6 | **70 522,2** | **1 468,6** | **2%** |
| 2 | Western zone  | 13 458,8 | **13 535,2** | **76,4** | **1%** |
| 3 | Southern zone | 22 680,7 | **23 287,4** | **606,7** | **3%** |
|  | ***including by region*** |  |  |  |  |
| 1 | East Kazakhstan  | 9 339,1 | 9 204,8 | -134,3 | -1% |
| 2 | Karaganda  | 17 990,7 | 18 461 | 470,3 | 3% |
| 3 | Akmola  | 9 208,9 | 9 196,6 | -12,3 | -0,1% |
| 4 | North Kazakhstan | 1 764,3 | 1 665,2 | -99,1 | -6% |
| 5 | Kostanay  | 4 786,2 | 4 615,8 | -170,4 | -4% |
| 6 | Pavlodar  | 19 527 | 20 731,4 | 1204,4 | 6% |
| 7 | Atyrau  | 6 350,4 | 6 255,6 | -94,8 | -1% |
| 8 | Mangystau  | 5 110,5 | 5 023,1 | -87,4 | -2% |
| 9 | Aktobe  | 6 437,4 | 6 647,5 | 210,1 | 3% |
| 10 | West Kazakhstan  | 1 997,9 | 2 256,6 | 258,7 | 13% |
| 11 | Almaty  | 11 351,4 | 11 367,8 | 16,4 | 0,1% |
| 12 | Turkestan | 5 096,9 | 5 211,2 | 114,3 | 2% |
| 13 | Zhambyl  | 4 472,7 | 4 948,3 | 475,6 | 11% |
| 14 | Kyzylorda  | 1 759,6 | 1 760,1 | 0,5 | 0,03% |

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

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

In January-December 2020 compared to January-December 2019, the index of industrial production amounted to 99.3%. Increase in production volumes was recorded in 12 regions of the republic, decrease was observed in Kyzylorda, Aktobe, Mangistau, East Kazakhstan regions and Shymkent city.

**Change in industrial output by region**

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

In Kostanay region, production of iron ore concentrates increased, production of flour, steel bars and rods, cars and trucks increased (107.4%).

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

In North-Kazakhstan region production of processed milk, butter, flour, confectionery and computing machines increased (104.8%).

In Almaty city the production of beer, leather shoes, medicines, prefabricated concrete building structures, cars increased (104.6%).

In West Kazakhstan region, due to the increase in gas condensate production, the index of industrial production amounted to 103.7%.

In Zhambyl region, phosphate rock extraction increased, production of phosphorus, orthophosphoric acid, phosphate fertilizers and ferrosilicomanganese increased (103.1%).

In Aktobe region due to the increase in the extraction of copper and zinc concentrates, copper-zinc ores, increased production of ferrochrome, the index of industrial production amounted to 103%.

In Nur-Sultan city the production of refined gold, railway locomotives and soft drinks increased (102.4%).

In Almaty oblast, production of confectionery and chocolate, soft drinks, mounting panels and instrument panels increased (102.3%).

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 (101.5%).

In East-Kazakhstan region the extraction of copper and lead-zinc ores, gold-containing concentrates increased, production of refined gold increased (101.5%).

In Pavlodar region, production of copper concentrates increased, production of parts of railroad locomotives, streetcar motor cars and rolling stock increased (101.1%).

In Shymkent city due to reduction of production of diesel fuel, furnace fuel oil and commodity concrete the index of industrial production amounted to 98.9%.

In Turkestan region due to the decrease in uranium ore mining and natural uranium production, the industrial production index amounted to 96%.

The index of industrial production in Atyrau region amounted to 94.2%, Mangistau region - 93.9% and Kyzylorda region - 86.7% 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-December 2020, electricity consumption by large consumers decreased by 3.47% compared to the same period in 2019.

*million kWh*

|  |  |  |
| --- | --- | --- |
| **№** | **Consumer** | **January-December** |
| **2019** | **2020** | **Δ, %** |
| 1 | Arcelor Mittal Temirtau JSC | 3 708,1  | 3 683,2 | 1% |
| 2 | AZF (Aksu) TNK Kazchrome JSC | 5 819,6  | 5 704,9 | 2% |
| 3 | Kazakhmys Smelting LLP  | 1 208,7  | 1 175,4 | 3% |
| 4 | Kazzinc LLP | 2 858,2  | 2 860,0 | 0% |
| 5 | Kazzinc JSCSokolovsko-Sarbay State Enterprise | 1 734,5  | 1 835,4 | -5% |
| 6 | Kazakhmys Corporation LLP  | 1 282,3  | 1 243,1 | 3% |
| 7 | AZF (Aktobe) TNK Kazchrome JSC | 3 235,2  | 3 169,0 | 2% |
| 8 | RSE Kanal im. Satpayev | 271,5  | 205,0 | 32% |
| 9 | Kazphosphate LLP | 2 212,2  | 2 203,1 | 0% |
| 10 | NDFZ JSC (part of Kazphosphate LLP) | 1 935,8  | 1 926,8 | 0% |
| 11 | Taraz Metallurgical Plant LLP | 278,7  | 166,4 | 67% |
| 12 | Ust-Kamenogorsk Titanium and Magnesium Combine JSC | 643,5  | 872,0 | -26% |
| 13 | Ust-Kamenogorsk Titanium and Magnesium Combine JSCTengizchevroil | 1 834,6  | 1 904,9 | -4% |
| 14 | JSC " PAZ "(Pavlodar Aluminum Plant) | 953,9  | 951,6 | 0% |
| 15 | JSC " KEZ "(Kazakhstan Electrolysis Plant) | 3 773,0  | 3 754,0 | 1% |
| 16 | Temirzholenergo LLP | 1 506,7  | 1 799,9 | -16% |
| 17 | JSC "KEGOC" | 4 865,9  | 5 177,9 | -6% |
| **Total** | **35 332,8** | **36 705,8** | **-3,74%** |

*mln kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Name** | **January-December** | **Deviation mln kWh** | **Δ, %** |
| **2019**  | **2020**  |
| **I** | **Samruk-Energy JSC** | **7 527,4** | **7 385,0** | **-142,4** | **-1,9%** |
| *1.* | *Bogatyr Komir LLP* | *300,7* | *300,7* | *0,0* | *0,0%* |
| *2.* | *AlatayZharykCompany JSC* | *1 007,6* | *1 012,0* | *4,4* | *0,4%* |
| *3.* | *AlmatyEnergoSbyt LLP* | *6 219,0* | *6 072,3* | *-146,7* | *-2,4%* |

# **Coal**

# *Steam coal production in Kazakhstan*

According to information from the Statistics Committee of the Ministry of Energy of Kazakhstan, Kazakhstan produced 109 227,6 mln tons of hard coal in the period January-December 2020, which is 2% lower than in the same period in 2019 (111 083,2 thousand tons).

|  |  |  |  |
| --- | --- | --- | --- |
| **№**  | **Oblast** | **January-December** | **Δ, %** |
| **2019**  | **2020**  |
| 1 | Pavlodarskaya |  68 364,9 |  67 049,9 | 98% |
| 2 | Karagandinskaya |  34 217,1 |  33 614,6 | 98% |
| 3 | East Kazakhstan | 8 157,7 | 8 388,8 | 103% |
|  | **Total in RoK** | **111 083,2** | **109 227,6** | **98%** |

# *Coal production by Samruk-Energy JSC*

In January-December 2020, Bogatyr Komir LLP produced 43 338 thousand tons, which is 3.4% more than in the corresponding period of 2019 (44 848 thousand tons).

# *Coal sales by Samruk-Energy JSC*

In January-December 2020, 43 436 thousand tons were sold, including:

- 33 378 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 (33 792 thousand tons);

- exported to Russia – 10 058 million tons, which is 7.7% more than in the corresponding period of 2019 (10 893 thousand tons).

*thousand tonnes*

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Region** | **Sales volume, thousand tonnes** | **Δ, %** |
| **January-December 2019** | **January-December 2020** |
| Total exports to the domestic market of the Republic of Kazakhstan | **33 792** | **33 378** | **98,8%** |
| Total exports to the Russian Federation | **10 893** | **10 058** | **92,3%** |

As per the figures for January-December 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-December 2020 amounted to 3 123.4 million kWh. Compared to January-December 2019 (1 927.7 million kWh), the increase was 62%.

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Deviation 2020/2019** |
| **January-December** | **share in the Republic of Kazakhstan, %** | **January-December** | **share in the Republic of Kazakhstan, %** |  **mln kWh** | **%** |
|  | **Total output in the Republic of Kazakhstan** | **106030,0** | **100%** | **108085,7** | **100,0%** | **2055,7** | **1,9%** |
| **I** | **Total RES in the Republic of Kazakhstan, including by zones**  | **1927,7** | **1,8%** | **3123,4** | **2,9%** | **1195,7** | **62,0%** |
| 1. | *Northern Zone* | *594,8* | *30,9%* | *1117,5* | *35,8%* | *522,7* | *87,9%* |
| 2. | *Southern zone* | *1082,7* | *56,2%* | *1644,0* | *52,6%* | *561,3* | *51,8%* |
| 3. | *Western Zone* | *250,2* | *0,0%* | *361,9* | *11,6%* | *111,7* | *0,0%* |
| **II** | **Total RES in the Republic of Kazakhstan, including by type**  | **1927,4** | **1,8%** | **3123,4** | **2,9%** | **1195,7** | **62,0%** |
| 1. | *SES* | *412,4* | *21,4%* | *1304,3* | *41,8%* | *891,9* | *216,3%* |
| 2. | *Wind farms* | *701,9* | *36,4%* | *1091,6* | *34,9%* | *389,7* | *55,5%* |
| 3. | *Small hydroelectric* | *807,3* | *41,9%* | *722,6* | *23,1%* | *-84,7* | *-10,5%* |
| 4. | *Biogas plants* | *5,8* | *0,3%* | *4,9* | *0,2%* | *-0,9* | *0,0%* |

In January-December 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-December** | **share in the Republic of Kazakhstan, %** | **January-December** | **share in the Republic of Kazakhstan, %** | **mln kWh%** | **%** |
|  | ***Electricity production in the Unified Energy System of the Republic of Kazakhstan*** | **106030,0** | **100,0%** | **108085,7** | **100%** | **2055,7** | **1,9%** |
| 1. | Production of "clean" electricity (RES + Large hydroelectric power plants)  | *9507,0* | *9,0%* | *8800,5* | *8,1%* | *-706,5* | *-7,4%* |
| 2. | Production of "clean" electricity (RES excluding Large hydroelectric power plants) | *1927,7* | *1,8%* | *3123,4* | *2,9%* | *1195,7* | *62,0%* |

Electricity generation by RES facilities of Samruk-Energy JSC (SES, WES, small HPPs) for January-December 2020 amounted to 335.8 mln kWh or 10.8% of the total volume of electricity generated by RES facilities, which is 2% lower compared to the same period of 2019 (for January-December 2019, the Company's RES generation amounted to 342.5 mln kWh, and the Company's RES share was 17.8%).

The Company's share in the production of "clean" electricity (SES, RES, small and large HPPs) decreased by 21.7% (2,386.2 million kWh) in January-December 2020 compared to the same period of 2019. (3,046.2 mln kWh).

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Name** | **2019** | **2020** | **Deviation 2020/20/2019.** |
| **January-December** | **share in the Republic of Kazakhstan, %** | **January-December** | **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)  | 3046,2 | 32,0% | 2386,2 | 27,1% | -660,0 | -21,7% |
| 2. | Production of "clean" electricity by JSC "Samruk-Energy" (SES, wind farms and small hydroelectric power plants), incl.: | 342,5 | 17,8% | 335,8 | 10,8% | -6,7 | -2,0% |
| 3. |  *Cascade of small hydroelectric power plants of "AlES" JSC* | *190,9* | *9,9%* | *165,6* | *5,3%* | *-25,3* | *-13,3%* |
| 4. | *Samruk-Green Energy LLP* | *3,2* | *0,2%* | *3,8* | *0,1%* | *0,6* | *18,8%* |
| 5. | *First Wind Power Station LLP* |  | *0,0%* | *3,5* | *0,3%* | *3,5* |  |

# **Centralized electricity trading by KOREM JSC**

*(Information provided by KOREM JSC)*

According to the results of centralized electricity trading in December 2020, 32 deals were concluded in the volume of 53,424 thousand kWh for a total amount of KZT 432,544.8 thousand (excluding VAT) (including spot trades in the "day-ahead" mode and trades for medium and long-term periods), including:

- spot trades in "day-ahead" mode - 30 deals were concluded in the volume of 1,584 thousand kWh for the total amount of KZT 9,876 thousand (excluding VAT). The minimum price for this type of centralized bidding was 6 tenge/kWh (excluding VAT), the maximum price was 6.5 tenge/kWh (excluding VAT).

- spot trades "within operational day" - no deals were concluded;

- trades in electricity for medium- and long-term periods - 2 deals were concluded in the volume of 51,840 thousand kWh for a total amount of 422,668.8 thousand tenge (excluding VAT). The minimum for this type of centralized bidding was 7.95 tenge/kWh (excluding VAT), the maximum price was 10.39 tenge/kWh (excluding VAT).

For the same period of 2019, the total volume of centralized bidding was concluded 4 transactions of 65,496 thousand kWh for a total amount of 493591.68 thousand tenge (excluding VAT). The table below shows the dynamics of prices of transactions concluded at centralized trades in December 2019-2020.

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

|  |  |  |  |
| --- | --- | --- | --- |
| **December** | **spot trading in the "day-ahead" mode** | **trading for medium- and long-term periods** | **within the operational day** |
| MIN price  | MAX price | MIN price  | MAX price | MIN price  | MAX price |
| **tg/kWh (excluding VAT)** |
| **2019** | **-** | **-** | **5,76** | **8,68** | **-** | **-** |
| **2020** | **6** | **6,5** | **7,95** | **10,39** | **-** | **-** |

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

According to the results of spot trades held in December 2020 at spot trades in the "day-ahead" mode - 30 transactions were concluded in the volume of 1,584 thousand kWh for a total amount of 9,876 thousand tenge (excluding VAT). The minimum price for this type of centralized bidding was 6 tenge/kWh (excluding VAT), the maximum price was 6.5 tenge/kWh (excluding VAT).

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



The table shows that the total demand amounted to 40,632 thousand kWh, while the supply amounted to 1,680 thousand kWh. The unsatisfied demand volume in December 2020 amounted to 39,048 thousand kWh. In the process of spot trading in the trading system, a total of -97 bids were accepted, including 79 bids from buyers and 18 bids from sellers.

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

According to the results of trades held in December 2020, no deals were concluded. As a result of spot trades held in December 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 December 2020, 2 deals were concluded in the volume of 51,840 thousand kWh for the total amount of 422,668.8 thousand tenge (VAT excluded). The minimum for this type of centralized bidding was 7.95 tenge/kWh (excluding VAT), the maximum price was 10.39 tenge/kWh (excluding VAT).

Compared to the same period of 2019, in December 2020, there was a 21% decrease in the volume of bidding for the medium- and long-term period.

In December 2019, 4 transactions with the volume of 65,496 thousand kWh for the total amount of 493,591.68 thousand tenge (excluding VAT) were concluded in the bidding for the medium- and long-term period. The minimum for this type of centralized bidding was 5.76 tenge/kWh (excluding VAT), the maximum price was 8.66 tenge/kWh (excluding VAT).

# **Export-import of electric energy**

In January-December 2020, the main direction of electricity export-import of the RK was the Russian Federation (export to the Russian Federation – 1 105.9 mln kWh, import from the Russian Federation –1 240.6 mln kWh). KEGOC – 1 065.6 mln kWh in order to balance electricity production-consumption. Electricity import from the Russian Federation in the reporting period in the amount of 982.3 mln kWh was carried out in order to balance production-consumption of electricity.

million kWh

| **Name** | **January-December** | **Δ 2020/2019гг.** |
| --- | --- | --- |
| **2019** | **2020** |  **mln kWh** | **%** |
| **Kazakhstan's exports** | **-4 374,3** | **-1 968,7** | **2 405,6** | **-55,0%** |
| **to Russia** | *-4 368,2* | *-1 105,9* | *3 262,2* | *-74,7%* |
| **to Central Asian ECO** | *-6,1* | *-862,8* | *-856,6* | *14016,3%* |
| **Kazakhstan's imports** | **1 316,5** | **1 555,4** | **238,9** | **18,1%** |
| **from Russia** | *1 313,2* | *1 240,6* | *-72,6* | *-5,5%* |
| **from Central Asian ECO** | *3,3* | *314,8* | *311,5* | *9331,5%* |
| **Balance-flow " + "deficit," - " excess** | **-3 057,8** | **-413,3** | **2 644,5** | **-86,5%** |

# **SECTION II**

# **8. Installed and available capacity of power plants in Kazakhstan**

 *(as of January 01, 2020/2021)*

The installed capacity of Kazakhstan's power plants as of 01.01.2021 amounted to 23,547 MW, which is 611 MW more than in 2020.

MW

| **Power plant** | **Installed capacity** | **available capacity** |
| --- | --- | --- |
| **2020 year,** | **20of the 21 year** | **Δ, MW** | **2020 year** | **2021 year** | **Δ, MW** |
| **UES of Kazakhstan** |
| **Only**  | **22 936** | **23 547,1** | **611,10** | **329 19** | **20 039,1** | **710,10** |
| all TES | 389 19 | 19 419,5 | of 30.50 | 257 17 | 17 456,1 | 199,10 |
| including steam turbine TES | 389 17 | 17 404,5 | of 15.50 | 15 594 | 15 679,0 | 85,00 |
| GTES | 1 999 | 2 015,0 | 16,00 | 1 662 | 1 777,1 | 115,10 |
| SES | 597 | 885,3 | 288,30 | 364 | 641,6 | 277,60 |
| VES | 282 | 511,6 | 229,60 | 149 | 311,6 | 162,60 |
| HPP | 2 666 | 2 729,6 | 63,60 | 1 558 | 1 628,7 | 70,70 |
| Biogas plant (BGP) | 1,06 | 1,1 | 0,04 | 0,5 | 1,1 | 0,60 |
| **North area of UES of Kazakhstan** |
| **Only**  | **15 599** | **15 892,7** | **293,70** | **743 13** | **14 079,6** | **336,60** |
| all TES | 503 13 | 13 528,6 | 25,60 | 12 554 | 12 650,6 | 96,60 |
| including steam turbine thermal power plant | 975 12 | 13 000,5 | 25,50 | 12 051 | 12 147,7 | to 96.70 |
| GTES | 528 | 528,1 | 0,10 | 502 | 502,9 | 0,90 |
| HPP | 1 774 | 1774,6 | 0,60 | 1 038 | 1 044,5 | 6,50 |
| VES | 100 | 232,5 | 132,50 | 59 | 164,6 | 105,60 |
| Biogas plant (BGP) | 1,06 | 1,1 | 0,04 | 0,5 | 1,1 | 0,60 |
| SES | 220 | 356,0 | of 136.00 | 91 | 218,9 | 127,90 |
| **Western area of UES of Kazakhstan** |
| **Only TES** | **3 528** | **3 533,1** | **5,10** | **2 650,4** | **2 728,1** | **of 77.70** |
| all TES | 3 424 | 3 414,7 | -9,30 | 2 595,8 | 2 677,0 | point 81.20 |
| including steam turbine thermal power plant | 1 984 | 1 974,0 | -10,00 | 1 464 | 1 449,0 | -15,00 |
| GTES |  1440,7 | 1 440,7 | 0,00 | 1 131,8 | 1 228,0 | of 96.20 |
| SES | 2,0 | 2,0 | 0,00 | 2,0 | 2,0 | 0,00 |
| VES | 101,4 | 116,4 | 15,00 | 52,6 | 49,1 | -3,50 |
| **southern area of UES of Kazakhstan** |
| **Only**  | **3 808** | **4 121,2** | **313,20** | **2 935** | **3 231,4** | **296,40** |
| all TES | 2 460 | 2 476,2 | 16,20 | 2 107 | 2 128,5 | 21,50 |
| incl. steam turbine thermal power plant | 2 430 | 2 430,0 | 0,00 | 2 079 | 2 082,3 | 3,30 |
| GTES | 30 | 46,2 | 16,20 | 28 | 46,2 | 18,20 |
| SES | 375 | 527,3 | 152,30 | 271 | 420,7 | 149,70 |
| VES | 80 | 162,7 | 82,70 | 37 | 98,0 | of 61.00 |
| HPP | 892 | 955,0 | of 63.00 | 520 | 584,2 | 64,20 |
| **Akmola region** |
| **Only**  | **777** | **961,0** | **184** | **694** | **869,0** | **175** |
| including steam turbine thermal power plant | 682 | 682,0 | 0 | 639 | 638,1 | -0,9 |
| VES | 95 | 178,95 | 83,95 | 55 | over 139.0 | 84 |
| SES | 0 | to 100.00 | 100 | 0 | 91,9 | 91,9 |
| **Aktobe region** |
| **Only TES** | **654** | **702,1** | **48,1** | **660,1** | **684,1** | **24** |
| including steam turbine thermal power plant | 315 | 315,0 | 0 | 320 | 320,0 | 0 |
| GTES | 339,1 | 339,1 | 0 | of 340.1 | of 340.1 | 0 |
| VES | 0 | 48,0 | 48 | 0 | 24,0 | 24 |
| **Almaty region** |
| **Just** | **1 886** | **1 953,6** | **67,60** | **1340,3** | **1 463,8** | **123.50 for** |
| including steam turbine thermal power plant | 852 | 852,0 | 0,00 | 725 | 739,0 | 14,00 |
| HPP | 804 | 804,8 | 0,80 | 458 | 485,0 | of 27.00 |
|  SES | 202 | 257,4 | 55,40 | 141 | 228,6 | 87,60 |
|  WEC | 27 | 39,5 | 12,50 | 15 | 11,3 | -3,70 |
| **Atyrau region** |
| **Only**  | **1 565** | **1 618,3** | **of 53.30** | **1 187** | **1 344,5** | **157,50** |
| including steam turbine thermal power plant | 624 | 624,0 | 0,00 | 492 | 526,0 | **of 34.00** |
| GTES | 941 | 941,5 | 0,50 | 695 | 793,7 | **98.70 a barrel** |
| WEC | 52 | 52,8 | 0,80 | 24 | 24,8 | **0,80** |
| **East Kazakhstan** |
| **is Just** | **2 346,5** | **2 346,5** | **0,00** | **1 507** | **1 515,5** | **8,50** |
| including steam turbine thermal power plant | 542 | 542,5 | 0,50 | 459 | 461,6 | 2,60 |
| HPP | 1 774 | 1774,0 | 0,00 | 1 038 | 1043,9 | 5,90 |
| SES | 30 | 30,0 | 0,00 | 10 | 10,0 | 0,00 |
| **Zhambyl region** |
| **Just**  | **1 458** | **1 528,7** | **70,70** | **1 261** | **1 to 353.2** | **92,20** |
| in t h steam turbine thermal power plant | 1 290 | 1 290,0 | 0,00 | 1 148 | 1 172,8 | 24,80 |
| SES | 100 | 100,5 | 0,50 | 83 | 83,6 | 0,60 |
| WEC | 53 | 123,2 | 70,20 | 22 | 86,7 | 64,70 |
| HPP | 14 | 15,0 | 1,00 | 7 | 10,1 | 3,10 |
| **West Kazakhstan** |
| **is Just**  | **400** | **390,3** | **-9,7** | **374** | **368,4** | **-5,6** |
| including steam turbine thermal power plant | 30 | 20,0 | -10 | 22 | 18,0 | -4 |
| GTES | 370 | 370,3 | 0,3 | 352 | 350,4 | 1.6 million |
| **Karaganda region** |
| **Just**  | **2 943** | **2 979,7** | **of 36.70** | **2 317** | **2 431,9** | **114,90** |
| including steam turbine thermal power plant |  2 563 | 2 563,0 | 0,00 | 2 072 | 2 150,4 | 78,40 |
| GTES | 189 | 189,0 | 0,00 | 162 | the 162.8 | 0,80 |
| HPP | 0,6 | 0,6 | 0,00 | 0,6 | 0,6 | 0,00 |
| Biogas plant (BGP) | 1,06 | 1,1 | 0,04 | 0,5 | 1,1 | 0,60 |
| SES | 190 | 226,0 | of 36.00 | 81 | 117,0 | of 36.00 |
| **Qostanay** |
| **All TES** |  **283** | **283,0** | **0** | **156** | **159,1** | **3,1** |
| **Kyzylorda region** |
| **Only**  | **167** | **210,4** | **43,4** | **93** | **121,3** | **28,3** |
| including steam turbine thermal power plant | 85 | 85,5 | 0,5 | 40 | 40,0 | 0 |
| GTES | 30 | 46,2 | 16,2 | 28 | 46,2 | 18,2 |
|  SES  | 50 | 78,7 | 28,7 | 25 | 35,1 | 10,1 |
| **Mangistau region** |
| **Just**  | **1 509** | **1 524,5** | **15,50** | **1 064** | **1 015,2** | **-48,80** |
| including steam turbine thermal power plant | 1 330 | 1 330,0 | 0,00 | 950 | 905,0 | -45,00 |
| GTES | 128 | 128,9 | 0,90 | 83 | 83,9 | 0,90 |
| SES | 2 | 2,0 | 0,00 | 2 | 2,0 | 0,00 |
| VES | 48,6 | 63,6 | 15,00 | 28 | 24,3 | **-3,70** |
| **Pavlodar oblast** |
| **Just steam turbine thermal power plant** | **8 049** | **8074,0** | **25** | **7 863** | **7877,5** | **15** |
| **North Kazakhstan** |
| **is Just**  | **546** | **546,5** | **0,5** | **545** | **542,6** | **-2,4** |
| including steam turbine thermal power plant | 541 | 541,0 | 0 | 541 | 541,0 | 0 |
| WEC | 5 | 5,5 | 0,5 | 4 | 1,6 | -2,4 |
| **Turkestan region** |
| **Only** | **296** | **428,5** | **132,5** | **240** | **293,2** | **53,2** |
| TES | 202 | 202,5 | 0,5 | 165 | 130,5 | -34,5 |
| HPP | 72 | 135,3 | 63,3 | 54 | 89,2 | 35,2 |
| SES | 21 | 90,74 | 69,74 | 20 | 73,45 | of 53.45 |

# **Status of formation of the Common Electric Power 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 carry out a phased formation of the common electricity market of the Union on the basis of parallel operating electric power systems, taking into account the priority provision of electric energy to domestic consumers of the member States.

At the same time, the balance of economic interests of producers and consumers of electric energy, as well as other subjects of the EAEU SEZ, will be observed.

On May 29, 2019, as part of the celebration of the fifth anniversary of the signing of the Treaty on the Eurasian Economic Union, the Supreme Council signed an international agreement on the formation of the common electricity market of the Union in the form of a Protocol on Amendments to the Treaty on the Eurasian Economic Union of May 29, 2014 (regarding the formation of the common electricity market of the Eurasian Economic Union).

On December 20, 2019, the Supreme Council adopted Decision No. 31 "On the action Plan aimed at forming the Common Electric Power Market of the Eurasian Economic Union", which sets, among other things, the terms of 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 provided for in the said Protocol.

Currently, the EAEU member States are working to develop and coordinate the rules for the functioning of the EAEU EEA.

In 2020, the 13th meeting of the Advisory Committee on Electric Power Industry under the EEC Board was held in absentia (May 26), seven meetings of the Subcommittee on the Formation of the EAEU EEA of the Advisory Committee on Electric Power Industry under the EEC Board (49th meeting on January 23-24, 50th meeting on May 29, 51st meeting on July 02, 521st meeting on August 20-21, 53rd meeting on September 24-25, 54th meeting on November 19-20, 55th meeting on December 24), one meeting of the Sub-Committee members (February 20-21) and one seminar on the organization of the wholesale market of the Russian Federation and its contractual structure (September 30).

The work on forming a common electric power market of the Eurasian Economic Union continues.

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

Since 1992, 55 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.

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **. of 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.

# **Media overview in the CIS countries**

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

**Kyrgyz Republic**

**Goskompromenergo offers a methodology for determining the index of technical condition of equipment of substations and overhead power lines**

The State Committee of Industry, Energy and Subsurface Use of the Kyrgyz Republic has put up for public discussion a draft order on approval of the Methodology for determining the index of technical condition of substation equipment and overhead power lines. This is reported on the agency's website.

The main purpose of creating this Methodology is to establish uniform principles and methods for determining the index of technical condition of electrical equipment and overhead lines for JSC "NESK" (the company). Unified assessment methods for determining the technical condition index will allow solving problems related to planning maintenance and repair of substation and overhead line equipment, reconstruction and technical re-equipment of JSC "NEK" facilities.

This will ensure the reliability and safety of operation of the electric networks of JSC "NEK" at a higher and more modern level, the agency writes.

It is proposed to extend the method to oil-based power transformers and autotransformers; gas-insulated, vacuum and oil-based switches above 1000 V; disconnectors above 1000 V; non-insulated air power lines above 1000 V.

**NESK asks the population to stop turning on additional electrical equipment: a record amount of power was consumed per day — 3,240 Megawatts**

 "Yesterday's power consumption reached a record 3,240 megawatts. The previous record was 3,224 megawatts on January 29, 2018, "Emil Kudanaliyev, General Director of the National Electric Grid of Kyrgyzstan, said at a press conference in Bishkek on December 14.

According to him, electricity consumption has reached 69 million kW.hours per day.

According to the government decree, the limit of electricity consumption for December is 1 billion 886 million kWh, that is, for 30 days it is 61 million kW.hours per day. Accordingly, the excess over the limit is more than 10%, he said.

"Naturally, we are not going to introduce restrictions. But with high consumption, the load on equipment and network generating equipment increases — reliability in operation decreases. Although consumption did not reach the peak of 2018, when it was 71.5 million kW.but still, at the moment such a sharp increase in consumption at such temperatures is very alarming. This means that the population is not ready to go through the OZP, and therefore we ask the population to stop turning on electrical equipment in addition, otherwise the consequences may be disastrous," E. Kudanaliyev said.

The situation is similar for neighboring energy systems: consumption in the Kazakh energy system is also growing uncontrollably. "The 500 kV North—South section of Kazakhstan has already been overloaded this morning, the shutdown of this section will limit transmission from generating sources in the north of Kazakhstan to the south, respectively, the entire united power system of Central Asia will suffer. Very strong restrictions are being implemented in Uzbekistan, " the head of the National Economic Commission said.

**Due to problems in the Kazakh energy system, the contract for the import of electricity is not fully implemented — - Electric Power Stations**

Due to problems in the Kazakh energy system, the contract for the import of electricity is not fully implemented, Zholdoshbek Achikeyev, General Director of JSC Electric Stations, said at a press conference in Bishkek on December 14.

Next year, too, low water is expected. Need to import electricity - "Electric power stations"

In November-December, we are ready to receive 500 million kW.General Director of "Electric Stations" He reminded that for the rational use of the country's water resources, "Electric Stations" signed agreements with Kazakh partners for the import of about 500 million kWh.

"But due to the fact that we, for example, have information on problems in the Kazakh energy system, this agreement is now not fully implemented. Deliveries are underway, but much lower than the set, planned volumes, " Zh.Achikeev.

At the same time, he said that the situation at the "Electric Stations" is generally normal, the equipment is operating in the set mode, and fuel supply to the Bishkek and Osh CHPPs is proceeding on schedule.

From November 14 to 30, electricity imports from Kazakhstan totaled 24.8 million kWh

"Consumption has increased very sharply in the last few days due to the cold snap. To date, the HPP output has amounted to 68 million 600 thousand kWh, while the Bishkek CHPP output has amounted to 7 million 745 thousand kWh. In terms of capacity, the consumption of JSC "Electric Power Stations" is also breaking records. According to the resolution and our estimated data, we exceed all limits. Over the past day, the consumption capacity of 3,240 megawatts was. The load of the Bishkek CHPP with the plan of 310 megawatts was 360 megawatts. In this regard, it is extremely important that our citizens, our electricity consumers, take care of the use of electricity, that is, turn off all unnecessary power consumption devices, use more coal, gas and use less electric heating, " Zh.Achikeev.

**In the hours of maximum evening loads on the power system, the consumption of electric power is 3188 MW, and the volume of available power is only 3331 MW — - NEHK**

Today, due to a sharp decrease in ambient temperature, the volume of daily electricity consumption in the republic has sharply increased, head of the National Energy Holding Nurbek Kozubekov said at a meeting of the Housing Committee on Fuel and Energy and Subsurface Use on December 15, answering questions from Deputy Kozhobek Ryspaev.

So, according to him, with the consumption limit of 60.9 million kWh, in fact, consumption amounted to 70.7 million kWh as of December 15, which is 11.7 million kWh more.

With a cumulative total for 14 days of 2020, total electricity consumption amounted to 924.7 million kWh, which is 106 million kWh more than in the same period of 2019 and 72.1 million kW.h is higher than the set limit.

"This trend of exceeding consumption from the established limit, in our opinion, will continue until the end of this year and for the first quarter of 2021. Also, during the hours of maximum evening loads on the power system, the volume of electricity consumption is 3188 Megawatts, including 2,086 Megawatts in the north and 1,114 Megawatts in the south. Compared to the same period last year, it is 444 Megawatts more. At the same time, the volume of available capacity in the power system today is only 3,331 Megawatts, " said the head of the holding.

The volume of water at the Toktogul HPP today is 13.1 billion cubic meters, which is almost 2.6 billion cubic meters lower than in the same period of 2019, he said.

**Due to problems with generation and consumption in Kazakhstan, Kyrgyzstan imports 144 million kWh from Kazakhstan instead of 500 million kWh**

"There will be no blackouts. We are currently working on this, " the head of the National Energy Holding Nurbek Kozubekov said at a meeting of the Housing Committee on Fuel and Energy and Subsurface Use on December 15.

Earlier, deputy Kozhobek Ryspaev asked whether there would be blackouts and whether the people would not be worried.

"In terms of imports for the 4th quarter, we plan to import electricity from Kazakhstan in the amount of 500 million kWh, but due to problems with generation and consumption in Kazakhstan itself, we plan to receive 144 million kWh by the end of the year.This trend continues with a sharp consumption in other Central Asian countries. Uzbekistan even started rolling blackouts. In order not to go to such lengths, we are working on an over-limit consumption. We are conducting explanatory work, and all relevant measures are being taken, " N. Kozubekov said.

**Parliament approves draft law on ratification of the Charter of the International Renewable Energy Agency (IRENA)**

On December 16, the Jogorku Kenesh adopted in three readings the draft law "On ratification of the Charter of the International Renewable Energy Agency (IRENA), adopted at the Founding Conference of the International Renewable Energy Agency on January 26, 2009 in Bonn".

According to MP Abdyvakhap Nurbayev, Kyrgyzstan's accession to IRENA will allow expanding the range of cooperation and exchange of experience with other countries in the development of renewable energy sources in the Kyrgyz Republic, introducing advanced technologies and attracting investment in the field of renewable energy sources.

**A large load is placed on networks in large cities. It is necessary to use capacity reserves — the new part of the Bishkek CHPP is not working at full capacity — - A. Novikov**

 "It is important to fully provide the population with electricity in winter. We must not allow the population to be left without electricity, " Acting Prime Minister, First Deputy Prime Minister Artem Novikov said at an extraordinary meeting to discuss the uninterrupted operation of the energy system, the government's press service reports.

"The autumn-winter period is very intense. Electricity consumption has increased, which can lead to accidents in the energy system. It is necessary to take appropriate measures and raise awareness among the population about the importance of saving electricity. It is necessary to reduce the volume of consumption. We have repeatedly talked about the transition to energy-saving technologies and insulation of residential buildings. But in previous years, not enough attention was paid to this issue. Now we need to assess how critical the situation is, what is the readiness for a negative development of events and what needs to be done to provide the population with uninterrupted supply of electricity and heat," A. Novikov said.

Due to weather conditions, exceeding the set limit is recorded daily. In the last 24 hours alone, with the planned figures of 49.8 million kWh, the actual consumption amounted to 58 million kWh.

"According to my information, especially heavy load falls on networks in large cities. We have reserves in terms of capacity and we need to use them. In particular, the new Bishkek CHPP is not fully operational. I believe that the time has come to put the second hydroelectric unit into operation in order to ensure sufficient electricity and heat generation. This will require additional financial expenses, but citizens should not feel uncomfortable in such cold weather. There should be no rolling blackouts. At the same time, it is necessary to continue raising awareness among the population about the need for rational use of electricity," the acting head of government said.

A. Novikov suggested that representatives of Gazprom Kyrgyzstan LLC speed up work on gasification of residential areas in Bishkek, in which the government will support the company.

The Acting Prime Minister also reminded that in the Ak-Zhar residential area, where power supply failures occurred during the days of a sharp cold snap, construction of an additional power transmission line to stabilize the power supply will soon begin.

Following the meeting, the Acting Prime Minister instructed the State Committee for Industry, Energy and Subsoil Use, together with the National Electric Holding Company, to take effective measures to prevent exceeding the electricity limits in distribution companies, to ensure the rational use of water resources in the Toktogul reservoir, and to strengthen control over the work on monitoring loads on electric networks and electrical equipment.

**At-Bashinskaya HPP, hydroelectric unit No. 3 was launched**

Today, December 21, on the eve of the Energy Day, the start-up of the hydroelectric unit No. 3 of the At-Bashinskaya hydroelectric power Station (Dostuk village, Naryn region) took place.

The commissioning of hydroelectric unit 3 was carried out with the participation of General Electric engineers.

The reconstruction project of the At-Bashinskaya HPP is aimed at improving safety, improving the reliability of networks and aggregates, improving reliability and further reducing the number of operations and maintenance of the station.

The launch ceremony of the third hydroelectric unit of the At-Bashinskaya HPP was attended by the Chairman of the Board of the National Energy Holding, the Deputy Governor of Naryn region, the management of JSC "Electric Stations", local authorities and other guests.

As a result of the completion of the reconstruction of the At-Bashinskaya HPP, the service life will be extended for another 30-40 years (the HPP has been operating since the 1970s and is completely outdated), increasing electricity generation by 150-180 million kW.h per year, 4 MW or 10% growth is expected.

The reconstruction of the suction caps of hydraulic unit 3 and hydraulic unit 4 has been completed, as well as the drainage system of the station has been restored. In addition, the T-2 transformer with a capacity of 28 MVA was replaced in 2019. Also, on August 1, 2020, the T-1 transformer with a capacity of 28 MVA was replaced and work on the installation of fire barriers between the two transformers, as well as the HPP building, was completed.

At the same time, from September 7 to October 20, 2020, the second shutdown of generator No. 4 was made to start replacing hydraulic unit No.4. The disc cover is repaired at the factory in Italy.

The head of the National Energy Holding Nurbek Kozubekov said that this is the second energy project since Kyrgyzstan gained independence after Kambar-Ata HPP-2.

Reference: The At-Bashinskaya hydroelectric power station is the only source of electricity production in the Naryn region with an annual output of 115-160 million kWh (25-28% of the annual demand of the Naryn region), with a marketable output of 32.4 – 65 million soms.

The At-Bashinskaya hydroelectric power station is located in the mountainous Naryn district of the Naryn region on the At-Bashi River. The At-Bashi River is the first major left-bank tributary of the Naryn River.

The project "Reconstruction of the At-Bashinskaya HPP" is aimed at improving safety, improving reliability, increasing the stability of the network and aggregates, as well as reducing subsequent activities for the operation and maintenance of the station. The reconstruction and modernization of the At-Bashinskaya HPP is crucial for the region. The hydroelectric power station covers 30% of the region's electricity needs and regulates the network voltage and load in winter.

This project is funded by grants from the Swiss State Secretariat for Economic Affairs.

The project involves replacing existing electrical and mechanical equipment with new ones.

**In November, electricity losses in the power system of the Kyrgyz Republic amounted to 305.9 million kWh**

Electricity losses in the power system of the Kyrgyz Republic amounted to 305 million 892.70 thousand kWh. This is stated in the KERCS data

In November, the Kyrgyz energy system generated 1 billion 706 million 403,895 thousand kW.power consumption check.

Of this amount, JSC "Electric Power Stations" generated – 1 billion 688 million 279.598 thousand kWh, other suppliers (small hydroelectric power plants) – 18 million 124.297 thousand kWh.

The Kyrgyz grid received 1,688,234. 22 thousand kWh of electricity.

**KERCS integrated the electricity metering system in the transmission system**

Kyrgyz Energy Settlement Center OJSC has integrated a system of electricity metering in the transmission system, said Taalaibek Baigaziev, Director of the KRC, at a press conference in Bishkek.

As he previously reported, calls to save electricity have an effect in places where the population understands, but mostly it is the families of power engineers.

"Such agitation of power engineers of their neighbors has a positive effect somewhere. Here I would like to discuss the possibility of promoting this work. Companies install "smart" meters, programs, which are eventually integrated into our billing center-in the MDM system. This is a data management system that should integrate all existing automatic electricity metering systems, " he said.

If all meters are integrated into the system, it will be possible to track them for each subscriber, for each consumer, for each substation, for each network, for each power node. "In general, we already control the flow of all electricity through the system," he said.

Now the generation systems are being integrated, that is, by the end of spring, the upper level will be finished, after that, integration in the distribution system remains — these are distribution companies, he said.

"I think that private energy companies will not remain on the sidelines. Ultimately, they should also automate. Well, for the end user, we can already see their consumption pattern, when they consume-in the morning or in the evening or in the afternoon, that is, the nature of the schedule and knowing its consumption, then it will be possible to set such tariffs that will take into account the overload of the morning/evening maximum. Perhaps the introduction of some kind of differential tariffs, zonal tariffs, seasonal tariffs (summer, winter), that is, tariff flexibility will be introduced through the fact that there will be "smart" meters, that is, the consumer will already have the right to choose the method of his electricity consumption: if he wants — during the day or in the evening or at night, that is, he will be able to he will look at his pocket and choose some tariffs himself, " T. Baigaziev said.

**Kazakhstan will continue importing electricity in January 2021 — Head of SCEPP**

Kazakhstan will continue importing electricity in January 2021, Head of the State Committee for Industry, Energy and Subsoil Use Zhyrgalbek Sagynbayev said at a press conference in Bishkek on December 30.

"In principle, we expect to receive electricity until the end of the year and in the first quarter of next year, and then winter passes and our demand will decrease and we can do the rest on our own," Zh.Сагынбаев.

The potential of Kyrgyzstan's hydropower industry is very large, but this is a natural phenomenon, so power engineers always predict that this year will be low-water, and the next year will be high-water, he said. "It is very difficult to prepare here, expect ... The cycle of low-water sometimes changes, so we are saving our water today," he said.

**Republic of Moldova**

**Moldova reduced electricity consumption by 4.7%**

Premier Energy and Furnizare Energie electrice Nord (FEE Nord) purchased and delivered 2.590 billion kWh of electricity to consumers in January-September, down 128.7 million (4.7%) from a year ago.

According to INFOTAG, the regulator's data show that the share of purchases from Moldovan producers increased from 16.8% to 18.5%, while from outside it decreased from 83.2% to 81.5%.

In monetary terms, a total of $ 2.560 billion worth of electricity was purchased. MDL (-10.8%) at an average price of 98.9 bans per 1 kWh compared to 105.7 bans in January-September 2019. Including local producers – 707.2 million kW / h at 147.7 bans (-11.4 bans). Foreign companies (Ukraine and the Moldavian GRES in Pridnestrovie, owned by the Russian Inter RAO – "I") - for 1.853 billion rubles. MDL 87.8 bans each (-7 bans).

Energy transportation services totaled MDL 374.2 million, while distribution services totaled MDL 1.444 billion. The number of lei decreased by 4.9% and 8.1%, respectively.

According to the report, all 2.590 billion kWh reached consumers, but already by 4.774 billion. lei, as the average rate for them was 184.3 bans.

Household consumers accounted for 49.5% of the electricity delivered, while other consumers accounted for 50.5%. The level of payments for it remained at 99.9%.

**ENERGOCOM state enterprise will remain the central supplier of electricity in Moldova until 2028**

The state-owned company Energocom, which has been the central supplier of electricity in Moldova since 2018, will retain these powers until at least January 16, 2028.

According to INFOTAG, this provides for amendments to the government decree of 2017, which came into force on Thursday, according to which the company's powers in this post were extended from the end of this year "until the expiration of the license for the supply of electricity."

The appointment of Energocom as the central electricity supplier was initially intended to help create conditions for promoting the production and use of electricity from renewable sources to encourage attracting new investments in the development of electricity production capacities, fulfilling Moldova's obligations within the Energy Community, developing a reliable and competitive electricity market, and improving the security of electricity supply to end users.

Currently, Energocom is the only supplier of missing electricity in the Republic of Moldova, whose capacity makes it possible to produce no more than a quarter of the energy consumed in the country. Energocom buys all the missing volumes from Moldavskaya GRES, located in the Transnistrian region and owned by the Russian holding Inter RAO. According to the contract, which runs until the end of March 2021, Energocom supplies energy to power distribution companies of the Republic of Moldova at $0.04865 per 1 kW / hour. The purchase price was not disclosed.

**Moldova supports amendments to the Energy Community Treaty, which are "necessary for its modernization and promotion of the contracting Parties in building energy markets and integrating them into EU markets."**

This was stated by the Minister of Economy and Infrastructure Anatoly Usatii during an online meeting yesterday with the EU Ambassador to Moldova Peter Michalko.

The meeting was also attended by the Ambassadors of Austria, Bulgaria, the Czech Republic, France, Germany, Greece, Hungary, Slovakia and Sweden. After two years of negotiations, the text of the amendments should be politically agreed and initialed at a meeting of the Council of Ministers on December 17.

"The Ministry of Economy and Infrastructure pays priority attention to modernizing the energy infrastructure, creating and developing competitive electricity and natural gas markets, developing the renewable energy sector and improving energy efficiency, so we are adapting policy reform measures in accordance with the Energy Community Treaty and EU legislation," the minister assured.

He thanked foreign diplomats for their support to Moldova in overcoming the consequences caused by COVID-19, noting that in the context of the pandemic crisis, close cooperation with all partners is more important than ever.

**ANRE reports on the implementation of the first phase of the EU4Energy project**

The National Agency for Energy Regulation (ANRE), with the support of the EU4Energy project, has developed and implemented into the Moldovan legislation a number of regulations provided for in the Energy Package III.

This was stated on Tuesday by the agency's director Evgeny Karpov during the final event of the first phase of the project, which was held online. infotag.md

"The most important support provided to Moldova was the development of rules for the stable functioning of the electricity and natural gas markets. These rules correspond to the European model, " he said.

Another advantage of EU4Energy is the creation of a discussion platform for participating countries. The high-level discussions contributed to the dialogue between Moldova and other Eastern Partnership member states, in particular Ukraine.

EU4Energy representatives noted that Moldova " actively participated in the project, making progress."

The meeting participants discussed the implementation of the second phase of the EU4Energy project, which starts in January 2021.

EU4Energy is a technical assistance project funded by the European Union with a budget of 21 million euros. It is aimed at public institutions in the energy sector of the Eastern Partnership countries. Initially, the project was designed for 2016-2020, but it was decided to extend it.

**Republic of Armenia**

**An industrial-scale solar power plant with acapacity of 200 megawatts will be built in Armenia в 200 мегаватт**

A photovoltaic power plant of industrial significance "Ayg-1"will be built in Talin and Dashtadem communities of Aragatson province of Armenia. On December 3, the Government of Armenia approved the list of prequalified companies, the composition of the competition commission and the invitation to participate in the tender.

According to the Minister of Territorial Administration and Infrastructures of the Republic of Armenia Suren Papikyan, the capacity of the new solar power plant will be 200 MW as part of the investment program of the Masdar company from the United Arab Emirates. AHCA, Hydrochainacorporation, Gazpromenergoholding and Abu Dhabi Future Energy Company (ADFEC) were prequalified. The results of the competition will be announced in February 2021. The competition commission consists of the Deputy Minister of Territorial Administration and Infrastructureof the SD (Chairman), Deputy Ministerof Justice (member of the commission), Deputy Minister of Environment (member of the commission), Deputy Minister of Finance (member of the commission) and Deputy Minister of Economy (member of the commission). The purpose of the government's decision is to properly organize and conduct a tender for the design, financing, construction, management and operation of a solar photovoltaic station.

Recall that on July 12 last year, Executive Director of Masdar Company Mohammed Jamil Al Ramahi and Executive Director of the National Interest Foundation of Armenia David Papazian signed an agreement on cooperation in the construction of a solar photovoltaic (200 MW) power plant, a wind power plant with a capacity of 200 MW of energy and "floating" solar installations with a capacity of 100 MW. More than 200 rivers and lakes can be used for "floating" solar installation programs. In Armenia, where the wind speed is 8.5 meters per second, there are favorable conditions for the construction of a wind power plant. The country has a figure of 1,720 kW.Unlike the average European figure of 1000 kWh, Armenia, being a full member of the Abu Dhabi International Renewable Energy Agency since 2010, aims to provide more than a quarter (26%) of domestic demand from renewable energy by 2025.

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

**Despite the existing obstacles, large-scale programs and reforms in the energy sector continue**

Today, Armenia celebrates the Day of the Power Engineer. In his welcoming address, RA Minister of Territorial Administration and Infrastructures Suren Papikyan noted that despite the challenges of the current year, the sector has largely maintained stability and provided uninterrupted power supply to the entire country thanks to the power engineers. "

He stressed that, despite the existing obstacles, large-scale programs and reforms in the energy sector planned for the current yearare continuing. In particular, была разработана the strategic program for the development of the energy sector of theRepublic of Armenia until 2040 was developed, works were carried out to modernize and re-equip the infrastructure, the modernization of the existing power unit of the Armenian NPP continues, and the construction of power lines Armenia-Georgia and Iran-Armenia is underway.

"Currently, work is underwayto develop the common electricity and gas markets of the EAEU countries, liberalize the electricity market in Armenia, as well as projects to developthe renewable energy sector, including the construction of industrial solar фотоэлектрических электростанцийphotovoltaic power plants Masrik-1 and Ayg-1," the minister said.

He also said that in the near future, joint work will continue to modernize the industry and improve energy security.

**Electricity tariffs have been revised in Armenia. The changes will take effect in February**

The Public Services Regulatory Commission (PSRC) has revised the tariffs for electricity supplied to subscribers by Electric Networks of Armenia CJSC.

In a message posted on the regulator's website, it is noted that since September 10, 2020, the PSRC has implemented the process of reviewing the tariffs of large generating stations of the electric power system and companies providing services, and analyzed all positive and negative factors.

As a result, it was found that in the conditions established from February 1, 2021 of tariffs for subscribers in the electric power system, a financial gap was formed.

Consequently, the PSRC noted, there was a need to review the tariffs for electricity sold to consumers. In particular, according to the calculations of the commission staff, it is necessary to increase the weighted average tariff by 2.27 dr/kWh

(including VAT).

As a result, it is proposed to:

1) for socially disadvantaged families and citizens who consume up to 400 kW.h of electricity per month (this is about 90% of individual subscribers) to leave the tariff unchanged,

2) increase the tariff for other consumers by AMD 3 / kWh (including VAT).

In Armenia, the electricity tariff for the population (subscribers of the 220 kV low voltage network) is 44.98 drams (9.5 cents) per 1 kWh during the day, 34.98 drams/kWh at night. For socially unsecured families, lower tariffs apply: daytime – 29.9 drams, night-19.9 drams for 1 kWh.

 ESA CJSC is part of the Tashir Group of Companies, which is owned by entrepreneur and philanthropist Samvel Karapetyan. Tashir Group is one of the largest diversified industrial and construction companies operating in several sectors of the Russian economy.

**Electric Networks of Armenia Company reports reduction of losses and significant savings**

The company "Electric Networks of Armenia" reported on reducing its expenses, saving money and implementing an investment program in the context of the regulator's decision to raise electricity tariffs in the country.

On December 29, the Public Services Regulatory Commission of Armenia decided to review the tariffs for electricity supplied to consumers from February 1, the press service of the ENA told Novosti-Armenia. According to the arguments presented at the meeting of the commission, there is a financial gap in the energy system, to fill which it is necessary to study and analyze the costs of all parts of the system. The increase in tariffs was influenced by a number of factors: a long planned shutdown of the nuclear power plant, currency fluctuations, and others.

At the meeting of the PSRC, it was decided to increase the weighted average tariff for electricity sold to consumers by AMD 2.27 / kWh (including VAT). At the same time, to ensure that this increase does not become a significant burden for subscribers-residents, the commission proposed for the socially disadvantaged layer and subscribers who consume less than 400 kW.h, leave the current tariff unchanged, and for other consumers - increase the tariff by 3 drams.

The meeting also pointed out positive factors that affected the tariff, for example, significant savings in the part of the Electric Networks of Armenia company in the amount of about 11 billion drams. In particular, the ENA's operating expenses were reduced by reducing losses (from 11.03% to 7.3%, saving 8.5 billion drams), the salary fund (saving 1 billion drams) and other operating expenses (saving 1 billion drams). In other words, if the ENA-related factors were taken into account, the tariff could be reduced by 2.3 drams (including VAT).

The company also managed to achieve these results due to the implementation of its investment program. By the way, ENA, despite the pandemic and the military situation, this year continued to implement a 10-year investment program worth $ 726 million in an unprecedented amount-about $ 92 million. At the moment, about 30% of the total program has been implemented. The goal of the program is to reduce electricity losses, further reduce current and service costs, and improve the quality of service.

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**Russian Federation.**

**Russia and Germany to expand energy cooperation**

Russia and Germany are working on various forms of cooperation in the field of hydrogen energy, including the creation of a joint roadmap and pilot projects for the production and supply of hydrogen to Germany, Russian Deputy Prime Minister Alexander Novak said at a conference organized by the Russian-German Raw Materials Forum (RGSF).

"I believe that Russian-German cooperation in the field of hydrogen energy can be quite promising and interesting for both sides," Novak said.

"Currently, my colleagues and I are working on various forms of cooperation, including the development of a joint Russian-German roadmap for the development of hydrogen energy; the creation of technological partnerships with German companies and the implementation of joint pilot projects for the production and supply of hydrogen to Germany," he added.

In addition, the Deputy Prime Minister also mentioned cooperation between Russian and German research institutes and the exchange of experience in the field of state regulation of the development of hydrogen energy among the areas of joint work.

"At the same time, cooperation in traditional fuel and energy sectors remains equally important, where, as I have already noted, a solid foundation has been laid," Novak stressed. He recalled that Russia's Energy Strategy until 2035 provides for the development of hydrogen energy and the country's entry into the number of world leaders in its production and export.

"The priority goals for achieving these goals include: increasing the scale of production of hydrogen from natural gas using renewable energy sources and nuclear energy; developing domestic low-carbon technologies for hydrogen production; state support for the creation of infrastructure for transportation and consumption of hydrogen; stimulating demand in the domestic market; ... expanding international cooperation," Novak concluded.

The Deputy Prime Minister reminded that Germany is a key economic partner of Russia not only in Europe, but also in the world. Cooperation between the two countries in the energy sector began about 50 years ago and continues to develop successfully.

In October, Novak said in an interview during World Energy Week LIVE that Russia and Germany had agreed to sign a memorandum on joint research on energy production using new green technologies.

**Alternative and traditional generation: competition or collaboration?**

The Russian economy faces new challenges-Europe may introduce a carbon tax starting in 2023, and then many domestic industries exporting energy-intensive products to the Old World will have a hard time. And since any production is associated with the consumption of electricity in one volume or another, it is believed that the accelerated development of renewable, or as it is often called "green" generation, will help reduce the carbon footprint of Russian exports.

Now in Russia, the promotion of renewable generation is turned on "green light". This direction is included in the concept of development of the Internet of Energy, which provides for the decentralization of energy supply. It is RES that is predicted as a source of ensuring the global trend of electricity consumption growth.

But will RES eventually become a real alternative to traditional generation rather than a hypothetical one?

At least, so far history does not know a single example of, say, a large metallurgical plant operating from "wind turbines" or solar panels, as opposed to electricity coming from the same thermal power plants or nuclear power plants. These issues, among others, were discussed at the online conference of RBC and Beacons "Energy: Challenges and prospects of the new time".

Experts note that Germany, where alternative energy already covers more than 35 percent of annual consumption, faced serious problems last summer: the power grid was close to shutdown, and only short-term imports from neighboring countries helped stabilize the situation. As a result, it was decided to provide a sufficient amount of balancing and reserve capacity by constructing new highly efficient and capable of capturing and storing CO2 TPPs running on fossil fuels with combined heat and electricity generation. The generator receives a fee from the backbone network operators, which includes a fee for power and generated electricity. Other measures to stabilize the energy system include extending the life of nuclear power plants, which were previously decided to abandon, and strengthening inter-system ties with other countries.

Poland also supports high-efficiency cogeneration (which can also regulate renewable energy sources) through a system of cogeneration allowances for units that win the selection process.

In Sweden, the strategic reserve is provided through a competitive bidding mechanism, which is held annually to cover peak demand during the winter season. Companies participating in competitive bidding offer a fixed fee for maintaining the availability of capacity (readiness of the generating facility to generate electricity) and a variable fee if the generation has started to generate energy.

In Italy, the operator of operational dispatch management annually determines critical periods when additional generating capacity may be required, and selects suppliers who are ready to offer them. The cost of capacity is included in the electricity bill for end users.

In the UK, where the share of renewable energy in the energy mix has exceeded 35 percent, the government pre-determines the required amount of capacity, and then centralized auctions are held. Enters into a contract with the winning bidder, which guarantees stable payment of capacity, in case of non - performance-a fine.

"Thus," said Alexandra Panina, Chairman of the Supervisory Board of the Council of Energy Producers Association, " despite the fact that the EU countries are striving to create a zero-carbon energy sector by 2050, thermal energy not only continues to be a fundamental part of the energy balance, but also continues to receive support through various tools and mechanisms."

That is, we see two facts. First, thermal generation continues to play an important role in the energy systems of European countries. Second, European countries establish various forms of supporting the efficiency of traditional generation, including through a system of price surcharges, as a tool for balancing and covering peak electricity consumption.

The reason is simple: the operating mode of the power system is a constant balancing of electricity consumption and generation. Conventionally, there are two main areas of generation operation. The first is "basic", which covers the main share of consumption up to the level of minimum daily consumption. And the second is "peak", which covers consumption in volumes from the minimum to the maximum during the day, as well as providing the necessary energy reserve.

"Basic generation should be reliable, stable and relatively cheap," Alexandra Panina said. - "Peak" - highly maneuverable and easily controlled, that is, have the ability to change its parameters depending on the operating conditions and requirements of the System operator."

And if Europe, which tends to "green" technologies, continues to support traditional thermal generation in parallel, it is strange to expect other solutions from Russia. "On the horizon of 2030-2035, no type of electricity generation can" compete "with thermal generation at current gas and electricity prices," said Andrey Maksimov, Deputy Director of the Department of Electric Power Development of the Russian Ministry of Energy. "The state acts very consistently, developing all types of generation, and renewable energy is one of them."

At the same time, our country has the opportunity to take into account the experience and mistakes of Western countries when forming the renewable energy sector in the national energy system. Currently, the role of thermal generation, whose share in the installed capacity of the country's energy system is about 67 percent, remains the leading one. Especially considering the fact that the heating season in some regions lasts up to 9 months a year. And foreign experience shows that it is necessary to support thermal generation to level the dependence of renewable energy sources on periodic solar and wind impacts, along with strengthening country network links and improving the quality of forecasting consumption and output.

**Shulginov named priority tasks in the energy sector**

The Ministry of Energy of the Russian Federation, under the leadership of the new Minister Nikolai Shulginov, will reform the grid complex and eliminate cross-subsidies in the electric power industry. The head of the ministry said this in an interview with the Rossiya-24 TV channel.

"The electric grid complex faces many challenges. They are connected with increasing the transparency of electric grid organizations, with the introduction of reference costs, with the consolidation of the network on the basis of the largest company in the region. And we need to sort out the blockages in terms of cross-subsidizing, we need to do this, " Shulginov said, answering a question about priority tasks in the energy sector.

Cross-subsidizing in the network complex is a tool for social support of the population. The volume is about 237 billion rubles a year. The burden is borne by consumers of distribution networks - industrial enterprises, small and medium-sized businesses, agricultural producers and budget organizations. There are also surcharges "packaged" in prices on the wholesale market (for the development of the Far East, support for renewable energy sources, etc.). According to the System Operator, their total volume exceeds 450 billion rubles a year.

The total load ("crossroads" and surcharges) can reach 31% of the final price of electricity, calculated in "Rosseti".

The volume of cross-subsidization in the UK, France, Germany and the United States exceeds the Russian figures by 2-5 times, said Rosseti, but in these countries it is allocated in a separate payment, which is distributed centrally.

Personnel structure of the Ministry of Energy

Shulginov intends to deal with the personnel structure of the Ministry of Energy, but this does not mean strong cuts - everything will take place within the framework of government regulations to reduce the number of employees of ministries.

"The proposals to change the structure - who to reduce, who to appoint-they just coincided with the position of the government, which firmly stated (about the need to reduce the number of employees of ministries-approx. TASS). We will deal with the structure, but there will be no revolution. There was no such thing as firing everyone and starting everything from scratch. We need to keep the backbone, we need to keep the staff, because you need to work from the first day, " the minister said.

Earlier, Russian Prime Minister Mikhail Mishustin proposed to start optimizing the staff of civil servants from January 1, 2021 and complete it within three months-until April 1. He made such a proposal on Monday, opening a meeting with deputy prime ministers.

According to the approved decision, the staff of the central offices of federal authorities from January 1, 2021 should be reduced by 5%, territorial bodies-by 10%. The released funds will remain in the payroll funds.

According to the new requirements, the number of structural divisions in ministries should be at least 40 employees, while services and agencies should have at least 25 employees. A separate requirement applies to deputy heads of federal authorities. Each of them must coordinate the work of at least two departments or offices.

Regional Gasification Program

Shulginov said that the Ministry of Energy intends to submit a program for gasification of Russian regions to the government in the coming days, most likely it will start working from 2021.

"The roadmap will be submitted to the government in the coming days, it is practically agreed with all companies, discussed at the Federation Council, so we do not expect any complications with its adoption. Then there will be implementation, starting in 2021, we need to launch the mechanism, " he said.

The Ministry of Energy under the leadership of Shulginov will not be engaged in "only electric power", but will cover all branches of the fuel and energy complex. For example, in the coming months, the Ministry will submit to the Cabinet of Ministers general schemes for oil and gas. "As part of the development of the Energy Strategy until 2035, we will submit a general scheme for the development of the oil and gas industry to the government for approval in the coming months," the minister said.

The gasification program implies its completion in two stages: by 2024 and by 2030. It prescribes the formation of sources of financing for connecting houses and land plots to gas without attracting citizens ' funds, simplifying a number of procedures, as well as connecting and maintaining equipment under the "single window"system.

Russian Deputy Prime Minister Alexander Novak said earlier that when developing gasification plans for each region, it is necessary to maximize the use of alternative options for obtaining gas from liquefied natural gas, liquefied petroleum gases and other sources.

**Rosseti Siberia (part of the Rosseti Group) has launched the Kaa-Khem digital substation in the Republic of Tyva.**

Kaa-Khem is the first digital substation in Tuva, part of a large-scale integrated project to improve the reliability of electricity supply to consumers in the village of Kaa-Khem with a population of 20 thousand people. The substation is equipped with two transformers with a voltage of 35/10 kV and a capacity of 10 MVA each. The automated process control system provides online monitoring of the operation of all equipment, including visualization of parameters, registration and signaling of events, analysis and evaluation of the operation of technological equipment and automation tools. The substation is fully equipped with domestic equipment.

Commissioning of the substation provided power to socially significant facilities: five kindergartens, three schools, two housing and utilities facilities, a hospital with a medical building, a fire station, and social institutions in the village of Kaa-Khem, the administrative center of the Kyzyl Kozhuun Tyva, located 50 km from Kyzyl. The comprehensive project includes the reconstruction of overhead power lines of different voltage classes with the replacement of more than 2 thousand poles and more than 100 km of wire with a self-supporting insulated wire, the reconstruction of 69 transformer substations, as well as the modernization of the automated electricity metering control system with the installation of almost 2.7 thousand intelligent metering devices.

The total cost of the complex project in Tyva was 715 million rubles.

The ceremony was attended by the Head of the Republic of Tuva Sholban Kara-ool, First Deputy General Director - Executive Director of Rosseti Andrey Murov and General Director of Rosseti Siberia Pavel Akilin.

According to Akilin, the launch of the substation made it possible to create 6.9 MW of free capacity for new facilities in the settlement. "Digital technologies make it possible not only to monitor the power grid, but also to manage it. This is primarily an increase in the reliability of power supply and the ability, if necessary, to quickly isolate sections of the network and restore electricity supply to other consumers," he said.

"The launch of the digital substation is an important event for the entire Tyva electricity industry. I'd like to.... I would like to thank the entire Rosseti company, the Tyvaenergo branch, because the hard work of engineers, electricians, and power engineers is behind this, and the work of ordinary people is behind it. "This village is actually a satellite of our capital Kyzyl. And the day when it will become a capital territory is not far off. And it will grow with comfortable housing with all the necessary infrastructure, " Head of the Republic of Tuva Sholban Kara-ool said at the ceremony.

"In the coming years, Kaa-Khem will not experience a lack of capacity for socio-economic growth. The next step in the development of the energy infrastructure of Tuva will be the modernization of all distribution networks of the republic. Until 2024, Rosseti Group companies plan to invest a total of 5 billion rubles in the region, " Murov said.

About the Digital Transformation Program

In 2018, the Board of Directors of ROSSETI approved the Digital Transformation 2030 concept. The program is implemented in subsidiaries of Rosseti Center, Rosseti Center and Volga Region and Rosseti Moscow Region.

The implementation of the concept will reduce the company's operating and investment costs, reduce electricity losses, increase reliability and availability of electricity supply, and create a set of additional services for customers.

Rosseti Siberia distributes electricity in the Republic of Altai, Buryatia, Tuva, Khakassia, Altai, Trans-Baikal, Krasnoyarsk Territories, Kemerovo and Omsk regions. The service area is approximately 1.75 million square kilometers.

**Installation for converting wind energy into heat will be launched in the Krasnoyarsk Territory in 2021**

The first plant capable of converting wind energy into heat will be installed in the Krasnoyarsk Territory in 2021. This was reported to TASS on Friday by the Ministry of Industry, Energy and Housing and Communal Services of the region, with reference to the head of the Ministry Yevgeny Afanasyev.

"Since 2018, OKB Mikron has been developing heat and wind generating complexes (TVGS), which include a wind station and a thermal energy storage system that can store heat for up to 10 days. The installation for converting wind energy not into electricity, as it happens in traditional wind power, but into heat solves the problem of heat supply to remote settlements, where heat is generated independently by boilers running on imported coal or fuel oil. There is no such installation in the world. The first such complex will be installed in 2021 on the territory of the enterprise itself, " the press service said.

The ministry added that the installation is completely autonomous, capable of operating at temperatures up to minus 70. The planned service life is 60 years.

"Currently, three types of TVG are planned-200 kW, 2000 kW and 4000 kW. Delivery to customers is planned from 2023 after completion of tests on its own site and pre-production. In the same period, a service center will be created, " the ministry said.

According to the Ministry, up to 95% of domestic components will be used in the production of the complex.

**Republic of Belarus**

**In December of this year, as part of the integration of the Belarusian NPP into the balance sheet of the united energy system of the country, construction of new electric boilers is planned to be completed and put into operation at many facilities of the branches of RUE-Oblenergo.**

The active phase of reconstruction with the installation of electric boilers is being carried out at Minsk CHPP-2. The renovation includes three stages, and work is currently underway on the first one. Two hot water boilers produced by the Swedish company Elpannetekhnik AB with a capacity of 20 MW each have already been installed, the main volume of electrical installation work has also been completed, and at the moment the new equipment is being put into operation and adjusted. In addition, in the first stage of reconstruction, two steam boilers will be dismantled, and a new one will be installed instead of one of them. The project "Installation of hot water electric boilers for heat release during the deep discharge of turbines after the commissioning of the Belarusian NPP" is also being implemented at Minsk CHPP-4.

Last summer, the Swedish company Zander & Ingeström AB delivered four electric boilers of its own production with a capacity of 40 MW each to Minsk. The general contractor is RUE Belenergostroy, the holding's management company. " As of December 7, construction and installation works have been completed and commissioning tests are underway.

**Since June 2019, the investment project for the installation of an electric boiler and gas-oil steam boilers has been implemented by Berezovskaya GRES.**

The 30 MW hot-water electrode boiler is manufactured by the Norwegian company PARAT Halvorsen AS, and the power transformer for its power supply is manufactured at Siemens Transformers LLC in Voronezh. The construction project was developed by RUE "Belnipienergoprom", and the general contractor is JSC"Tsentroenergomontazh". At the moment, construction, installation and commissioning works have been completed, and a comprehensive testing of the equipment has also been carried out. The facility will be put into operation by the end of the year.

The implementation of projects for the installation of hot-water electric boilers for generating heat during the deep discharge of CHPP thermal power turbines has been completed at Mogilev CHPP-2 and is nearing completion at Bobruisk CHPP-2. Already at the beginning of this year, two Swedish boilers, as well as heaters, pumps and auxiliary equipment were installed at these power plants. Further, installation works and equipment binding with process pipelines were successfully carried out, as well as its comprehensive testing was carried out. JSC Elektrotsentrmontazh acted as the general contractor at both sites of the Mogilev region, and Belenergoremnaladka performed the installation of boilers.

[**BelNPP's first power unit reached 100% capacity**](https://www.belta.by/economics/view/pervyj-energoblok-belaes-vyveden-na-100-moschnosti-423770-2021/)

Minsk, 11 December (BelTA). The first power unit[of the Belarusian NPP](https://www.belta.by/economics/view/energopusk-pervogo-bloka-belaes-planiruetsja-zavershit-v-blizhajshie-dni-minenergo-419775-2020/)produced 136.9 million kW.power consumption check. Such information is posted on the websites of the Ministry of Energy and Belenergo, BelTA has learned.

The readiness level of the first power unit is 99%. The power start-up stage is now being completed at the unit. It provides for the development of the reactor capacity up to 50% of the nominal with the inclusion of a generator in the network. The main task is to confirm the reliable and safe operation of systems, equipment and the power unit as a whole. During the power start-up, the most important operational tests are carried out, including compliance of the physical parameters and characteristics of the equipment and systems of the power unit with the design ones in stationary and transient modes of its operation.

Construction and installation works at the second power unit of the Belarusian NPP were completed by 75%. Pre-commissioning works are currently underway-this stage includes acceptance of systems and equipment from installation; post-installation cleaning of equipment and pipelines; testing for density and strength, as well as testing machines and mechanisms at idle. This stage includes preparing the reactor plant equipment for operation under cold-hot run-in conditions.

The Belarusian nuclear power plant with two VVER-1200 reactors with a total capacity of 2,400 MW is being built under the Russian project "NPP-2006" near Ostrovets, Grodno region. The general contractor is the engineering division of Rosatom State Corporation.

[**BelNPP's first power unit reached 100% capacity**](https://www.belta.by/economics/view/pervyj-energoblok-belaes-vyveden-na-100-moschnosti-423770-2021/)

The power start-up stage of the first power unit of the Belarusian NPP has been completed. This was reported to BelTA by the press service of the Ministry of Energy.

"All the planned technical measures and tests have been completed. A total of 246 tests were carried out, including the load relief mode of the turbine generator of the power unit from 500 MW to zero. On December 21, at 19.48, the turbine generator of the first power unit is again connected to the power grid with a subsequent increase in power to 500 MW, " the press service said.

Pilot operation of the first power unit will begin in the near future after receiving permission from Gosatomnadzor. At this stage, it is planned to consistently develop the power of the reactor unit (75-90-100 % of the nominal) with the necessary tests, including the mode of reducing the load of the turbo generator to zero.

After successful completion of the tests, the power unit will be comprehensively tested for 15 days at its rated capacity. Upon its completion, the first power unit of the Belarusian NPP will be put into operation by the acceptance commission in accordance with the established procedure.

**Belarus ' first 330 kV digital substation to be commissioned in 2021**

The first 330 kV digital substation in Belarus will be commissioned after reconstruction in 2021, Energy Minister Viktor Karankevich told reporters at the BELTA press center today.

"The Mogilev-330 substation is the first digital substation in the Belarusian power system of the 330 kV voltage class. This project is in the active phase of implementation. Commissioning is scheduled for the end of next year, " Viktor Karankevich said.

Pavel Drozd, General Director of Belenergo, explained that digital technologies will help improve the reliability of equipment and the safety of operation of the Mogilev-330 substation, minimize erroneous actions of operational and maintenance personnel, and reduce capital and operating costs.

"Digital technologies will allow continuous monitoring of the equipment condition. After the reconstruction, the area of the substation will decrease by about 40%, " Pavel Drozd added.

According to the General Director of Belenergo, digital technologies will also be implemented at other substations of the power system.

The Mogilev-330 substation is a key substation in the Mogilev power hub and one of the basic substations in the Belarusian power system. It plays an important role in the power supply of such large consumers as BMZ, Mogilevkhimvolokno, Mogotex, Mogilevliftmash, FEZ Mogilev, etc.

 **Republic of Kazakhstan**

**Kazakhstan experts to develop national standards on green energy**

National standards for business development in the field of green energy willbe developed by domestic experts on the site of the ECOJER association.

For these purposes, the Association has established a technical committee for standardization "Renewable Energy Sources and Alternative Energy" (hereinafter referred to as the RES Technical Committee). The corresponding order was signed by the Kazakhstan Institute of Standardization and Metrology.

According to Lazzat Ramazanova, Chairman of the Council of the Association, ECOJER, the transition to the widespread use of renewable energy is the main direction of global energy development. Kazakhstan should not lag behind global trends.

"President Kassym-Jomart Tokayev stressed that the growth of Kazakhstan's economy should become greener and greener. In this regard, the ECOJER Association for the first time creates a technical committee in the field of renewable energy sources and alternative energy. We understand that the use of renewable energy in our country should be accompanied by measures to ensure state technical regulation. The established technical committee aims to unlock the potential of the industry and develop concrete practical recommendations for creating a foundation for the development of renewable energy in Kazakhstan, " says Lazzat Ramazanova, Chairman of the Council of the Kazakhstan Association of Regional Environmental Initiatives ECOJER.

The main task of the RES technical committee will be to develop national standards of the Republic of Kazakhstan in accordance with modern international requirements. This will help businesses actively develop in the field of renewable energy sources.

"It is extremely important that we bring together the expert community of Kazakhstan on one platform to develop standards. The RES technical committee consists of representatives of government agencies, research institutes, businesses, industrial enterprises, international organizations, and independent experts. In the coming years, it is planned to develop up to 50 national standards for system design, installation and commissioning, operation, efficiency assessment and maintenance of renewable energy generation systems, " Lazzat Ramazanova notes.

The technical committee will discuss topical issues in the context of regional energy, development of the renewable energy market and necessary technical solutions, and regulatory regulation of renewable energy. Kazakhstan's scientific and technological potential will be demonstrated at the international level.

**A third of Zhambyl region's electricity will be provided by "green" power plants**

In the first 10 months of this year, the region's economy grew by 102.1 percent.

Thanks to investment projects, the energy independence of the region, which was traditionally considered energy-deficient, will be increased. zakon.kz.

Since the beginning of the year, seven investment projects worth 25.7 billion tenge have been implemented here, including two projects-the construction of wind power plants of "Wind Power city" LLP and "Wind Electricity" LLP, with a total capacity of 9 MW.

This was stated by Akim of Zhambyl region Berdibek Saparbayev at a briefing in the central Communications service.

In total, this year the region is implementing four projects for the production of alternative electricity with a capacity of 133.8 MW, worth 54.5 billion tenge. Upon completion of the projects, the total capacity of renewable energy sources will be 403.65 MW. As a result, their share will be increased to 30 percent of the total electricity generated, " the head of the region said.

Increasing electricity generation is an important component of the region's economy, which seeks to actively develop industrial production and commodity entrepreneurship. Thus, 147 projects worth 73 billion tenge have been approved under the Economy of Simple Things program alone, and 136 projects worth 49.1 billion tenge have already been credited.

This year, it is planned to attract investments in the amount of 368 billion tenge, 255 billion tenge was attracted during the reporting period, " the governor of the region said.

In the first 10 months of this year, the region's economy grew by 102.1 percent.

The speaker noted that Zhambyl region shows dynamic growth of the main socio-economic indicators: industrial production increased by 1.6 percent - 408.2 billion tenge, agriculture – by 4.4 percent (332.6 billion tenge), construction – by 39.5 percent (129.7 billion tenge), housing commissioning – by 7 percent (460.3 thousand square meters). m).

**Due to the transition to the auction mechanism, Kazakhstan has reduced tariffs from renewable energy sources**

On December 3, the Ministry of Energy held a semi-annual meeting with representatives of the civil sector and non-governmental organizations in an online format in accordance with the National Plan for the Development of Interaction between Non-governmental Organizations and the state in the Republic of Kazakhstan for 2016-2020.

During this meeting, issues of legislation adopted in 2009 were discussed, which is sustainable and allowed attracting investments in the amount of 1.49 billion US dollars in the renewable energy sector, as well as the issue of switching from a fixed tariff system to an auction mechanism, which in turn allowed reducing tariffs for wind power plants (Wind farms) on average, according to the auction participants ' requests, by 10.6%, small hydroelectric power plants (HPP) by 14.5%, solar power plants (SPP) by 38%.

At the same time, it was noted during the meeting that 2020 was the first year of implementation of the indicators laid down in the Concept for the transition to a "green economy". Thus, at the end of 9 months, the first renewable energy indicator was fulfilled – the share was 3% of the total share in the energy balance.

It was also stressed that further improvement of the legislation in the field of renewable energy sources will allow developing the renewable energy sector, according to the Government's plans.

At the moment, the bill has been approved by the Senate of the Parliament and sent to the Presidential Administration. After the adoption of the Law, the Ministry will adopt relevant rules for the implementation of the mechanism for stimulating the development of the renewable energy sector.

As the Minister of Energy Nurlan Nogayev noted, in 2013 Kazakhstan formulated specific goals for the development of the renewable energy sector, and as a result, the volume of the renewable energy market was determined. The Concept of Kazakhstan's transition to a "green" economy and the" Kazakhstan 2050 Strategy " provide for increasing the share of renewable energy in the country's energy balance to 3% in 2020, to 10% in 2030, and to 50% in 2050, taking into account alternative energy sources.

- The innovative potential of renewable energy is actively supported by the Government of Kazakhstan, the country's leadership keeps the issue of renewable energy development under constant control. Thanks to the created conditions, renewable energy is steadily growing. Over the past 6 years, the installed capacity of renewable energy facilities has grown almost 10-fold – from 177 MW in 2014 to 1,528 MW in 2020 – " said Nurlan Nogayev.

During the meeting, employees of the Ministry discussed with representatives of NGOs the development of renewable energy and answered questions of public interest.

**Kazakhstan's electricity networks are running out of steam**

The Ministry of Energy acknowledged that with current tariffs, it is difficult to start a large-scale modernization

The average level of deterioration of electric networks in Kazakhstan at the end of 2020 remains at the level of 60%.

According to the Ministry, the East Kazakhstan region has outstripped the West Kazakhstan region in terms of wear and tear. In the eastern region, this figure was 81%, and in the western region – 80%. In Kostanay region-74%.

Speaking about how it is planned to reduce this indicator, the ministry said that most of the country's energy transmission organizations are privately owned. In this regard, the reduction of depreciation can be considered only within the framework of investment programs of subjects. The department drew attention to the fact that at current prices for light it is impossible to carry out large-scale repairs.

"Significant financial investments are required to address the deterioration of electrical networks. The current tariffs do not allow for large-scale reconstruction and modernization. Therefore, energy transmission organizations work to reduce the wear of electrical networks is carried out systematically with a long-term effect. There is a possibility to consider the issue of deterioration of electric networks of energy transmission organizations by allocating funds from the budget for enterprises that are only in communal ownership, " the Ministry of Energy explained.

At the same time, the Committee for Regulation of Natural Monopolies reported that in 2015-2021, the volume of investments in the sphere of natural monopolies will amount to 2 trillion tenge. Including in housing and communal services – about 854 billion tenge. Of these, 602 billion tenge is invested in the electric power industry.

Meanwhile, the Ministry of Energy has signed agreements with seven energy-producing organizations for the modernization, reconstruction, expansion and (or) renewal of more than 1.1 thousand units. MW of capacity.

In addition, according to the strategic plan of the Ministry, 33.2 billion tenge was allocated for the development of heat and electricity in 2020. In 2021-2022 – 20.7 billion tenge. At the same time, next year the amount of financing will amount to 19.3 billion tenge.

**To strengthen the power system of Aktobe region, a gas turbine unit will be built**

Minister of Energy Nurlan Nogayev and Akim of Aktobe region Ondasyn Urazalin visited a number of fuel and energy complex facilities in Aktobe region.

The first point of visit was the Aktobe plant for the production of complex oil equipment. The company manufactures pumping rods, tubing, gas-sand anchors, deep-well rod pumps and other products. Nurlan Nogayev and Ondasyn Urazalin discussed plans for the development and further functioning of the enterprise during a conversation with the labor collective.

The Minister of Energy and the Governor of the region visited the Aktobe Ferroalloy plant of TNK Kazchrome JSC. The design capacity of the enterprise is 740 thousand tons of products per year, including: slag processing shops, mining and processing and other auxiliary facilities. The plant has a 135 MW gas turbine power plant.

Also, the delegation members visited the Kaspiy Plus enterprise, which is engaged in the production of dynamic anchors, anchors, studs, traverses, stabilizers and other metal parts of various modifications.

During his visit to Aktobe CHPP, Minister of Energy Nurlan Nogayev took part in laying the foundation stone for the construction of a 57 MW gas turbine unit. In 2020, dismantling works were started to prepare the territory for the construction of a gas turbine unit with a waste-heat boiler, and delivery and storage of waste-heat boiler equipment were started. In 2022, it is planned to implement a project to put into operation a new gas turbine with a capacity of 57 MW and a heat recovery boiler. This installation will increase additional capacity, which will positively affect the reliability of power supply to consumers in the Aktobe region. The construction will make it possible to increase the plant's capacity from 118 MW to 175 MW.

Nurlan Nogayev got acquainted with the work of the Kazakhstan Oil Equipment Plant. The company is engaged in the manufacture of oil and gas equipment and pipes, block-complete equipment, drilling rigs, as well as installations for the repair of oil and gas wells.

The next point of visit of the Minister of Energy and Akim of the region was the compressor station KS 14 of the main gas pipeline "Bukhara-Ural". Akim of Aktobe region Ondasyn Urazalin told the Minister about further plans for gasification of the region. Nurlan Nogayev, in turn, assured that the Ministry will provide all the necessary assistance, and gave a number of specific instructions to those responsible.

**On December 7, 2020, President of the Republic of Kazakhstan Tokayev K. K. signed the law "On Amendments and additions to certain Legislative Acts of the Republic of Kazakhstan on supporting the use of renewable energy Sources and the electric power Industry".**

The main conceptual innovations of the proposed law are:

1) stimulating the construction of maneuvering capacities;

Today, the Country has a surplus of electric capacity (2000 MW) accompanied by a shortage of maneuvering capacities. Electricity consumption during the day is uneven, with an increase in the evening hours and a decrease at night, which requires rapid variable operation of power plants. The existing regulatory capabilities of existing power plants are not sufficient, 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 regulate 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 creating maneuverable generation will be carried out through the use of auction selection, which will give an impetus to the construction of such sources, make a selection of the most effective projects with minimal impact on prices for end users.

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

With the introduction of new renewable energy facilities, tariffs and shares of electricity purchases by existing energy-producing organizations from the settlement and financial center for renewable energy support are increasing. In this regard, traditional energy-producing organizations incur non-covered losses until the corresponding adjustment to the marginal tariffs is made. Changes in the costs associated with the development of renewable energy sources require constant and timely adjustment of the maximum EPO tariffs.

In this regard, there is a need to separate the cost of purchasing electricity from the RFC for supporting RES from the marginal tariff and consider RES costs as a premium over the marginal tariff.

3) creating favorable conditions for the development of renewable energy.

Currently, significant investments are being made in the development of renewable energy.

Target indicators for increasing the share of renewable energy sources in total electricity production include bringing its share to 3% in 2020, 6% in 2025, and 10% by 2030. By 2050, renewable and alternative energy sources should account for at least half of total energy consumption.

To achieve these indicators, the draft law proposes to introduce the following:

First. Providing financial support from the Government to the settlement and financial center in case it fails to meet its payment obligations to renewable energy projects (in order to increase the creditworthiness of the RFC).

This provision will reduce the risks of investors and, accordingly, reduce the price at auctions for electricity generated by renewable energy facilities. In addition, the introduction of this standard will increase the investment attractiveness of the renewable energy sector in Kazakhstan.

Second. Increasing the term of the contract for the purchase of electricity from the current 15 years to 20 years.

This mechanism is necessary in order to increase the attractiveness of the renewable energy market for future investors and will lead to lower auction prices.

The third. Introduction of centralized purchase and sale of flood electric energy through the RFC.

In accordance with the current Law "On Electric Power Industry", it is stipulated that energy-producing organizations-hydroelectric power plants are required to sell electricity generated during the period of environmental water releases at centralized auctions. According to the system operator, the annual volume of the actual balance of production and consumption of electric energy averages 300 million kWh, while about 50% of flood electric energy is purchased at centralized auctions by traders whose pricing is not regulated by the state.

Taking into account the above factors, it is proposed to legislate the obligation of energy-producing organizations (hydroelectric power plants) to sell flood electric energy to the Russian Federation, which in turn will distribute this inexpensive flood electric energy among all consumers of the Republic of Kazakhstan, through the existing mechanism of centralized sale of renewable energy.

**Kazakhstan to support construction of maneuvering capacities**

This will strengthen the reliability of Kazakhstan's energy system...

On December 7, 2020, President of Kazakhstan Kassym-Jomart Tokayev signed amendments to the law "On Electric Power Industry", which provide for supporting renewable energy sources and holding auctions for the construction of maneuverable capacities.

In Kazakhstan, despite the surplus of electric energy, there is a shortage of maneuverable capacities that allow managing the imbalance of production and consumption during peak hours.

These include hydroelectric power plants (HPPs) and gas turbine power plants (GTPPs). Unlike coal-fired power plants, they do not require much time to deliver power to the grid.

The selection of projects for creating maneuverable generation will be carried out through auctions. According to the Ministry of Energy, this will allow you to choose projects with minimal impact on prices for end users.

"The existing regulatory capabilities of existing power plants are not sufficient, and therefore the system operator (KEGOC. - ed.) is forced to use the regulation of the Russian energy system. The imbalances covered by the unified energy system of Russia reach 600-800 megawatts, " the ministry said in a statement.

Additionally, maneuverable capacities allow balancing unstable electricity generated by renewable energy sources (RES). Kazakhstan has been stimulating electricity generation from renewable sources since 2014. By the end of 2020, their share in total electricity generation in the country should reach 3%, by 2030 – 10%, by 2050-50%. In order to maintain the growing dynamics, it is necessary to introduce new maneuverable generating capacities.

In addition, the amendments establish a" pass-through " tariff for supporting renewable energy sources. The cost of purchasing "green" electricity from existing energy-producing organizations will be deducted from their marginal tariffs. In Kazakhstan, electricity producing companies are required to produce a certain amount of capacity from renewable energy sources or purchase such energy from "green" power plants. As explained in the Ministry of Energy, with the growth of the share of renewable energy sources in the country, the costs of traditional generators increase and they incur losses.

The amendments also introduce financial assistance from the government for LLP "Settlement and Financial Center for Support of Renewable Energy Sources" (RFC). It is a single buyer of electricity from renewable energy stations. Assistance will be provided if the RFC is unable to meet its obligations to renewable energy projects.

"This provision will reduce the risks of investors and, accordingly, reduce the price at auctions for electricity generated by renewable energy facilities. In addition, the introduction of this standard will increase the investment attractiveness of the renewable energy sector in Kazakhstan, " the Ministry of Energy believes.

In addition to the above, the amendments will increase the term of the contract for the purchase of renewable energy from the current 15 years to 20 years.

Another innovation in the legislation will be the introduction of centralized purchase and sale of flood electric energy through the RFC.

Previously, such energy was sold at centralized auctions by traders whose pricing is not regulated by the state.

Now hydroelectric power stations are required to sell flood electric energy directly to the Russian Federation. It will distribute energy to all consumers through the existing mechanism of centralized sale of renewable energy.

**Kazakhstan has the cheapest electricity, which is difficult to find anywhere else today**

Head of a research project at Nazarbayev University, Doctor of Technical Sciences, Professor Kalkaman Suleimenov has devoted most of his active life to the development and research of new technologies for burning and gasification of low-grade coals.

On the eve of the professional holiday - the Power Engineer's Day, he shared his vision of the path that the domestic coal-fired power industry has taken, which has achieved significant results, Kazinform correspondent reports.

"The formation of the Kazakh energy industry can be associated with the adoption of the State Plan for Electrification of Russia (GOELRO), which was prepared on December 22, 1920 on the instructions of V. I. Lenin by G. M. Krzhizhanovsky, and now decades later this day is considered the Day of the power engineer. At that time, in Kazakhstan, the capacity of electric power stations was only 9 MW. In the 1930s, small-capacity stations began to develop in Altai and Zhezkazgan, which worked in isolation and only for production. The electric power industry was greatly developed in the 1940s, when the capacity of power plants was about 220 MW. A small development took place during the war years, when many industrial enterprises were transferred to Kazakhstan. If in 1945 the capacity of power plants reached 400 MW, then in the post-war years it increased to 2500-3500 thousand MW. With the development of the industrial sector, large stations were built, for example, large hydroelectric power stations on the Irtysh River. It should be noted that the development of energy in the 20-30s was due to the construction of small hydroelectric power stations on mountain rivers in the Altai Territory, which at that time were considered the simplest and most efficient way to produce electricity," says the professor.

According to K. Suleimenov, the main development of energy in Kazakhstan began in the 60s. Prior to this, there was no such body that would manage the energy sector in Kazakhstan. In 1962, the Republican Ministry of Energy was established, which led to the rapid development of this industry in Kazakhstan. Very large hydroelectric power stations were built on the Irtysh, in Karaganda – KarGRES-2, Dzhambulskaya GRES.

In the late 60s, the Ermakovskaya GRES was put into operation, which was considered the largest power plant in the Soviet Union beyond the Ural Ridge, i.e. in the Asian part of the country. Speaking about the development of the domestic energy industry, K. Suleimenov also mentioned the largest thermal power plant in Kazakhstan in the city of Ekibastuz, Pavlodar region.

"In the early 1970s, construction of large power plants began, one of which was Ekibastuz GRES-1 with powerful power units of 500 MW. It was planned to build four stations around Ekibastuz, and a fifth station near Balkhash. A powerful energy complex was being created, and all the electricity generated by these stations was mostly intended for the central part of Russia. At the same time, the most powerful 1500 kW direct current transmission lines were introduced. This was a unique line and the first global experience of this scale, " the speaker shared.

According to the expert, the construction of boilers at Ekibastuz coal was fraught with certain difficulties. In his opinion, there was no such low-grade coal in the Soviet Union, and there were no more than 3-4 deposits in the world.

"Imagine, we learned how to burn coal, which mostly consisted of ash and is practically not enriched. If the coal-fired power industry in Kazakhstan generates about 70% of the total electricity generated, then 90% of this volume is generated at the Ekibastuz field, " he said admiringly.

K. Suleimenov, assessing the current state of the industry, noted that in Kazakhstan, equipment in many small stations has already reached 70% of its resource.

"This technology is already 50-60 years old, but it is of very good quality. The main problem is the environmental factor. These are high emissions of sulfur oxides and nitrogen oxides. Everything depends, as I said before, on"complex coal". We have relatively high ash emissions into the atmosphere from boilers, and the electric filters can't cope. At the same time, when solving issues of equipment reliability and environmental problems, it is necessary to provide consumers with electricity in the amount that is necessary," he said.

The expert suggests carrying out renovation of existing power plants or building others with the latest technologies in their place. In his opinion, it is necessary to carry out innovative processes, restoration work at those stations or on the equipment that can still work well. "For the same stations that are currently operating, overestimated environmental standards are set. On that equipment, it is impossible to achieve the required parameters. Here it is necessary to build either new stations, which is very expensive, or put the latest electric filters and gas cleaning equipment on the" tail "of the boiler. By and large, it is necessary to invest decent money in the thermal power industry in order to get relatively environmentally friendly stations. By burning coal, you will get some emissions, but you can reduce them, " the expert says.

According to K.Suleimenov, no one in the world uses coal that is consumed in Kazakhstan. It was considered an achievement of Soviet scientists and power engineers, who made at that time such equipment that calmly burns almost the earth, which contains a maximum of 40% carbon. It follows that today Kazakhstan produces the cheapest electricity at the expense of cheap coal.

"The safety margin created back in the Soviet era is still working. It's been 30 years since the union was formed. The equipment that was installed 50-60 years ago is still working. With good operation and timely repairs and revisions, they can still last long enough. But it depends on the age of the station. For example, in the Ermakovskaya GRES (now Aksu electric power station), all units underwent an innovation that included replacing heating surfaces, steam pipes and parts in turbines. That is, after a complete reconstruction, the equipment can still work 200 thousand hours - this is 30 years," K. Suleimenov summed up.

The professor shared that since 1966 he had not worked outside of the power industry for a single day, and in order to achieve certain results, he tried to get a high-quality education and practical experience.

"In 1966, I graduated from high school and entered the Lenin Polytechnic Institute at the Power Engineering Faculty, majoring in thermal power plants, after which I went to work at the Ermakovskaya GRES. In February 1974, he entered the Kazakh Research Institute of Energy named after Sh. Ch. Chokin, where he was engaged in research work on the development and research of new technologies for solid fuel combustion and defended his PhD and doctoral dissertations, " he shared.

According to K. Suleimenov, in 1997 he received an invitation to head the Department of Science and New Technologies in the Department of Electric Power of the Ministry of Energy when the Ministry moved to Astana. In 2000, a proposal was received from KEGOC to create a similar department in the ministry, on the basis of which the department was later created. In 2007, he was offered a job in the Energy Asset Management Directorate of the Kazakhstan State Asset Management Holding Samruk.

K. Suleimenov has written more than 60 publications, including: 3 monographs, 10 author's certificates and patents for inventions. Today, the professor is actively working on a project to develop a technology for burning high-ash waste from Ekibastuz coals of the 3rd class at Nazarbayev University commissioned by Samruk-Energy JSC. The main goal of the project is to improve the efficiency of solid fuels and reduce air emissions.

**Energetika Day. Samruk-Energy summed up its results for 11 months.**

On the occasion of their professional holiday, the energy companies of Samruk-Energo JSC ensured the early implementation of their annual plans: Ekibastuz GRES-2 generated 4.7 million kWh of electricity, which is 107% of the plan, and Moinak HPP-over 915 thousand kWh of electricity (104%). The volume of coal production at the open-pit mines of Bogatyr Komir LLP amounted to 41.8 million tons (104% of the annual plan).

In general, the energy-producing organizations of Samruk-Energy JSC, maintaining the growth dynamics of indicators compared to the previous year, as of December 20, 2020, produced 29,897 million kWh of energy (103%), which is 3% higher than the same period last year. This is about 28% of the total output of energy-producing organizations in the Republic of Kazakhstan.

In the outgoing year, the company completed or started fundamentally important projects that actually form the picture of the future of Kazakhstan's energy sector.

In 2020, Samruk-Energy JSC completed the program of complete modernization of the Shardara HPP. Investments in the project amounted to 38 billion tenge. The modernization provided an increase in the service life of the HPP to 45-50 years and an increase in energy production from 480 to 537 million kWh per year.

Samruk-Energy JSC has launched the construction of two wind power stations. The first is in the Shelek corridor of Almaty region with a capacity of 60 MW with the prospect of expanding to 300 MW. The second wind farm is located in the Yerementau district of the Akmola region. It is planned to install 11 wind power plants with a total capacity of 50 MW at the station site. The electricity generated by the new wind farms will be supplied to the National Electricity Grid of the country.

For 11 months of the year, the generation of energy by renewable energy facilities of Samruk-Energy JSC amounted to 303.793 million kWh, or 10% of the total volume of electricity from renewable energy sources in the republic.

 Bogatyr Komir LLP, a company that is managed on a parity basis by Samruk-Energo JSC and the Russian UC RusAl, has started implementing a fundamentally important project at the Bogatyr open – pit mine-a cyclic-in-line coal mining technology. The introduction of the production line will allow coal mining at a depth of more than 200 meters, where the use of railway transport is very difficult, and will increase the capacity of the Bogatyr open-pit mine to 40 million tons of coal per year.

In 2020, the global problems associated with the COVID-19 pandemic also affected the companies of Samruk-Energy JSC. However, in a difficult epidemiological situation, the company ensured that all its power plants and coal-mining facilities were operating normally. The emergency mode demonstrated the professionalism of Kazakhstan's power engineers and showed high mobilization capabilities of the industry.

Samruk-Energy JSC has also consolidated its financial stability in 2020. Two years ago, Samruk-Energy was in the" red zone " of financial stability. The measures taken by the company's management, namely, a significant reduction in its debt, timely successful refinancing of a foreign currency loan, as well as hedging and converting foreign currency liabilities into tenge, allowed the company to enter the" green zone " of credit risk.

Based on the results of its work, the international rating agency Fitch Ratings confirmed the long-term ratings of Samruk-Energy JSC at 'BB', the outlook is Stable, and also upgraded the company's independent credit rating from ' B ' to ' B+'.

JSC "Samruk-Energo" is the largest electric power holding in Kazakhstan, 100% of which is owned by JSC " NWF "Samruk-Kazyna". Created in 2007. Main activities: production of electric and thermal energy; transmission, distribution and sale of electric energy; production of thermal coal. The holding includes energy and coal enterprises, including Ekibastuz GRES-1 LLP, Ekibastuz GRES-2 Station JSC, Bogatyr Komir LLP, Almaty Electric Power Stations JSC, Moinak HPP JSC, Shardara HPP JSC, etc.

**In Kazakhstan, the volume of electricity generated by green power plants is growing.**

According to the Bureau of National Statistics (BNS), in 2019, Kazakhstani enterprises invested 198.7 billion tenge in the form of investments in environmental protection. This is 78% more than in 2018. This significant difference is due to the dynamic growth of investments in renewable energy sources, which, according to the BNS classification, are included in the section of investments in environmental protection.

Data from the BNS bulletin "Investment and construction activities in Kazakhstan for 2015-2019" confirms that in 2019, the volume of investments in renewable energy was equal to 162.4 billion tenge. This is 2.2 times more than in 2018 (70.9 billion tenge). Compared to the period five years ago, investments have grown almost 22 times. In 2015, 7.4 billion tenge was spent for this purpose.

According to the Ministry of Energy of the Republic of Kazakhstan, 21 new renewable energy facilities were commissioned in 2019. These include solar power plants in Almaty (Eneverse Kunkuat LLP), Karaganda regions (KazSolar 50 LLP), wind turbines in Atyrau (Vetroenregotechnologii LLP) and Mangistau regions (JV KT Rare Metal Company LLP). In December 2019, the total number of green energy stations was 90. The total capacity in comparison with 2018 was doubled – up to 1050 MW.

Based on the concept of transition to a green economy adopted by the Government, the targets were approved in Kazakhstan in 2013. The share of alternative energy sources (electricity generation) in the country should reach 3.15% by 2020, and 30% in 2030. The Ministry's report for the first nine months of 2020 shows that the goal is almost reached. According to the results of September 2020, the volume of energy generated by Kazakhstan's renewable energy sources is 3.05%. Of these, solar power plants have the largest installed capacities.

According to the plans of the relevant department, the number of renewable energy facilities in 2020 should increase to 108, the total capacity – to 1,655 MW (another plus 57% compared to 2019).

Previously Kursiv.kz wrote about the development of alternative energy in Kazakhstan. The article presents the opinion of market participants about the main constraining factors. They are the lack of access to long-term money and taxes on equipment

**Kazakhstan celebrates 100th anniversary of electrification of the country**

**On December 22, 1920, the plan of electrification of Kazakhstan was adopted, the press service of the Ministry of Energy reports.**

The first hydraulic station in Kazakhstan was built in 1892. At the beginning of the twentieth century, the capacity of all power plants in the republic did not exceed 2.5 MW. In 1920, the plan for electrification of the Soviet Union, which included the Republic of Kazakhstan, was adopted. By the 30 years of the XX century, the capacity of power plants in the Kazakh SSR reached 12.5 MW. Today, thanks to the hard work of power engineers, the total energy capacity of Kazakhstan is more than 23 thousand MW. In 2020, it is planned to generate more than 105 billion rubles. kWh, 3% of which is accounted for by renewable energy sources.

A number of power engineers and industry veterans received medals, badges and certificates for their contribution to the development of the energy system.

In his congratulatory speech, Energy Minister Nurlan Nogayev noted that the electrification plan adopted in 1920 became the foundation for the country's industrial development and laid the principle of advanced development of the electric power complex.

"Kazakhstan adheres to these principles to this day, thanks to the highest professionalism and dedicated work of our power engineers," Nurlan Nogayev said. - The country's energy sector solves the most complex problems, implements major engineering projects, providing uninterrupted heat and light to our citizens. On this day, we pay tribute to those who created the energy system of our country with their own hands for a hundred years. The competitiveness of the economy and the reliable functioning of housing and communal services depend on its successful operation and effective development.

# **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 December 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 December 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 (December 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 December 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 December 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**

**Total electricity losses in 2019 amounted to 2.3 billion kWh**

Total losses of electricity in 2019 amounted to 2 billion 337.6 million kWh (15.4% to the volume of electricity supplied). This is stated in the materials of the National Statistical Committee of Kyrgyzstan.

At the same time, technological losses amounted to 2 billion 317.2 million kWh (99% of the total losses).

On the whole in the republic in 2019, the energy industry enterprises produced more than 15 billion kWh of electricity, which is 3.9% less than in 2018. At the same time, about 92% of its volume was generated by hydroelectric power plants.

Depreciation of power equipment in Kyrgyzstan: Which company has the largest percentage of obsolete equipment?

The degree of wear of the main equipment of electrical networks is more than 70%. This is reported in the materials of the National Energy Holding. At the same time, a large percentage of networks and equipment of electric distribution companies are not suitable for further operation.

The share of worn–out equipment in operation for 1.5–2 standard periods increases and amounts to about 20% for substations 35/6-10 kV and 35% for substations 6-10/0.4 kV."

Equipment wear in power companies:

— "Electric stations" (HPP, CHP) — 79.80%;

— "NES of Kyrgyzstan":

— PS 110-220-500 kV — 69%;

— 110-220-500 kV OVERHEAD LINE — 36%;

— "Bishkekteploset"

— Backbone networks — 81.8%;

— Distribution networks — 70.8%;

— "Severelectro"

— VL/KL 0,4-6-10-35 kV — 62%;

— PS 35 (TP, KTP 6-10/0.4 kV) — 58%;

— "Oshelektro"

— VL/KL 0,4-6-10-35 kV — 71.5%;

— PS 35 (TP, KTP 6-10/0.4 kV) — 68.7%;

— "Jalalabatelectro"

— VL/KL 0,4-6-10-35 kV — 49.3%;

— PS 35 (TP, KTP 6-10/0.4 kV) — 46.5%;

— "Vostokelectro"

— Overhead line/CL 0,4-6-10-35 kV — 56.7%;

— PS 35 (TP, KTP 6-10/0.4 kV) — 45.6%;

— Chakan HPP 100%.

Electric stations" will be allocated from the budget 1 billion soms of credit for the import of electricity from Kazakhstan and the purchase of fuel for CHP

JSC "National Energy Holding Company" was instructed to ensure the conclusion of a contract for the supply of electric energy from the Republic of Kazakhstan in the amount of up to 500 million kWh, the Ministry of Finance — to provide JSC "Electric Stations" in the period from December to December 2020 a budget loan of 1 billion soms to pay for imported electric energy and the purchase of fuel for teploelectric power plants of Bishkek and Osh cities.

The State Agency for Regulation of the Fuel and Energy Complex under the Government of the Kyrgyz Republic is instructed in accordance with the established procedure to revise, from October 2020, tariffs for electric and thermal energy supplied by Electric Power Stations OJSC for electric and thermal distribution companies, taking into account the cost of importing electric energy and the cost of purchasing fuel for thermal power plants in Bishkek and Osh by the autumn-winter period of 2020/2021, in the amount of 600 million soms.

Deputy Prime Ministers of Kyrgyzstan and Russia discussed energy projects

Deputy Prime Minister of Kyrgyzstan Erkin Asrandiyev spoke about specific projects that were discussed with Deputy Chairman of the Government of Russia Alexey Overchuk during the 22nd meeting of the Intergovernmental Kyrgyz-Russian Commission on Trade, Economic, Scientific, Technical and Humanitarian Cooperation.

Thus, according to Asrandiyev, special attention was paid to the further development and deepening of cooperation in the field of economy, trade, investment, energy, agriculture, pharmaceutical and chemical products, as well as the implementation of a number of joint projects.

As the Deputy Prime Minister noted, Russia is one of the main trading partners of Kyrgyzstan and ranks second among our foreign economic partners in terms of trade volume.

"We are ready to further deepen our cooperation, in particular, in the field of energy, we have agreed in close cooperation with the Russian Inter RAO on the implementation of a project to create a single billing center in Kyrgyzstan," he said.

Also, as Asrandiyev stressed, the project for the production of solar panel plates is seen as promising and implemented in the shortest possible time. "This is a good example of cooperation when Russian investors came to Kyrgyzstan, implemented a project here and the finished project was delivered to Russia," he said.

Republic of Belarus

On the readiness of energy facilities to work in the autumn-winter period (22.09.2020)

On December 22, 2020, a press conference was held on the topic of the readiness of housing and utilities organizations and energy facilities to work in the autumn-winter period. The event was attended by representatives of the Ministry of Housing and Communal Services of the Republic of Belarus, the Ministry of the Executive Committee, the leadership of the State Energy and Gas Supervision State Institution and the State Enterprise Beltopgaz. Deputy Chief Engineer Yevgeny Pantelei spoke at a press conference on behalf of GPO Belenergo.

The following measures are being carried out to improve the reliability of electrical equipment of GPO "Belenergo": replacement of worn−out switches 35 − 330 kV, replacement of inputs 35 − 330 kV, replacement of worn−out switches 10 kV vacuum, replacement of physically worn disconnectors 35 - 330 kV, replacement of isolators disconnectors 35 - 110 kV, replacement of cells of complete switchgear, replacement defective current transformers and voltage transformers 35 − 330 kV, the introduction of surge arresters 35 − 330 kV and 6 − 10 kV, etc.

Major repairs of the 0.4-750 kV transmission line amounted to 14,976.6 km (62.93% of the plan for 2020).

In terms of measures to improve the reliability of electrical networks, the following were replaced: 4086 10 kV poles, 13383 0.4 kV poles, 361 km of 10 kV wire, 909.7 km of 0.4 kV wire, 167.4 km of lightning cable for 35 kV overhead lines and above. 5825 distribution points and transformer substations were repaired, 79 complete transformer substations were centrally repaired.

Clearing of the glades of the 10-750 kV overhead line on an area of 12,027.22 hectares (88.2% of the plan for 2020) was carried out, also RUP-oblenergo, together with forestry enterprises, was put in order in the forest strips adjacent to the glades of the 10-750 kV overhead line, over a length of 2,326.96 km (70% of the plan for 2020).

RUP-oblenergo The 35-330 kV overhead line was expanded on an area of 206 hectares (23.4% of the 2020 plan).

Since the beginning of 2020, 528.5 km (51.62% of the 2020 plan) of uninsulated 10 kV overhead line wires passing through the lands of the forest fund have been replaced with protected (coated) wires. 7,321.03 km (63.51% of the total length) of 10 kV overhead lines passing through the lands of the forest fund are made in an isolated design.

6-10 kV cable lines were replaced in the regional, district cities of the republic and in Minsk in the amount of 230.05 km (76.48% of the 2020 plan).

As of December 21 of this year, the operational reserves of heating oil of RUP-oblenergo amounted to more than 352 thousand tons.

The systems of fire automation, smoke removal, sources of external and internal fire-fighting water supply, and the possibility of access to them have been checked.

There are 184 mobile diesel power plants on the balance sheet of RUP-oblenergo.

Emergency recovery and operational field teams are fully equipped with protective equipment and necessary materials and tools. Emergency training and personnel briefings are conducted.

The number of emergency recovery and operational field teams for the State enterprise "Belenergo" is more than 1,250 with a staff of more than 8,800 people. The number of automotive and special equipment is more than 3280 units.

The project of automation of distribution networks has been successfully completed in Pinsky rural RES.

This is the first project of its kind in the Brest region and only the third in Belarus. Its implementation was carried out within the framework of a Comprehensive action plan for accelerated socio-economic development of the Pinsky district for the period up to 2020. The General contractor for the reconstruction was JSC Belelektromontazhnaladka. The undoubted advantage of the project is that it is implemented mainly on the basis of Belarusian-made equipment. On August 14, the renovated facility was opened by Yuri KLIMOVICH, Director of the Pinsk Electric Networks branch of RUE Brestenergo, Oleg GRISCHUK, Deputy General Director of JSC Belelektromontazhnaladka, and Vladimir ZABAVNYUK, head of the Pinsk Rural RES.

In two years, reconstruction of 35/10 kV substations "Rudka" and "Molotkovichi", telemechanization of twelve 35-220 kV substations, renovation of the distribution point "Tepenets" with retrofit of 10 kV cells were carried out. The equipment of five transformer substations has been replaced, 128 reclosers have been installed.

Communication channels are organized with all renovated facilities. The main communication channel is implemented on the basis of HTC-7075 PLC modems manufactured by NPO NovoTestSystems LLC using existing high-frequency channels. The cost of channels based on these modems is significantly lower than the cost of high-voltage communication equipment. During the period of trial operation, modems have shown a stable connection, and their use can be considered as a basic option for organizing communication channels with objects during the implementation of such projects.

During the work in the Pinsky district, 55 short-circuit current indicators of the ITKZ LineTroll R400D were also installed. In order to detect malfunctions, they use both magnetic and electric fields, these devices are completely autonomous and do not require external transformers or connections. To detect a short circuit on the line, the indicator reacts to an increase in current beyond the set value and starts flashing when fixed. The red LED beacon shows the location of the damage and is visible at a great distance both during the day and at night. A very important section of the project was the installation of a new dispatch board for the district dispatch service. The shield is a "video wall" that combines several screens into one visual field. 32 Samsung UH55F-E high-resolution liquid crystal panels with an ultra-narrow frame of 1.7 mm are used, which allows the most holistic reading of graphic information. The total size of the video wall is 9.7 x 2.7 m. Such a dispatch board, built on display panels, allows not only to display a dynamic model of a 10 kV network on the screen, but also makes it possible to obtain up-to-date technical information on each specific electrical installation. The dispatcher has schemes with reference to the terrain, modes and switching programs, as well as photo and video materials obtained from surveillance cameras at controlled facilities. According to Oleg KOZIK, the head of the automated control systems section of JSC Belelektromontazhnaladka, the introduction of a video wall for RDS will help to effectively monitor in operating mode and respond promptly in cases of emergency or emergency situations. "When the staff of the power grids regularly goes around the facilities and notices some defects somewhere, they bring them into this dispatch system. If an accident occurs, the system automatically detects the location of the damage and localizes the damaged area, and the dispatcher immediately sees on the screen exactly where the breakdown occurred. He also has the ability to switch the system to demo mode and calculate the network. This is usually done when new consumers appear or it is necessary to calculate how the network mode will be maintained during repair work." In addition, the project has an SMS notification system. For example, if you need to temporarily withdraw a line, the dispatcher switches to demo mode and sees a list of consumers who will be disconnected. After that, he sends them a message that there will be no voltage for some time due to repair work. In case of an accident on the line, the system generates such a list automatically. This approach also gives an advantage in terms of logistics. To make it easier for the dispatcher to find places where the visiting team should go, he has a road map with all the objects at his disposal, and the exact location of the cars of the OVB is also displayed on it. If you need to inspect a certain substation, the dispatcher, opening the map, sees the car closest to the TP and gives the crew the command to leave. "The system of issuing orders is very convenient. The dispatcher on his equipment enters into the program what, where and how exactly it should be connected. The field team has a tablet on which this "switching form" is automatically transmitted. The OVB goes to the place, performs the necessary operations and indicates on the tablet that the action has been performed. The notification immediately comes to the dispatcher's monitor. This whole procedure is tied to coordinates, that is, if the OVB arrived at the wrong place where it was supposed to, the navigator will indicate that "you are not there," Oleg Mikhailovich shares innovations.

According to the Pinsk Electric Networks branch of RUE Brestenergo, the introduction of a set of automation measures in Pinsk rural RES will allow: – to improve the quality of power supply to consumers, as well as the safety of personnel during the production of operational switches in the network; – to reduce the monetary costs of repair and operation of substation equipment and the time it is under repair; – to receive information about the parameters of the network mode at its various states, calculation of generalized technical and economic characteristics of network operation; – give advice and hints to the dispatcher on the optimal management of network modes in normal and post–emergency conditions; – display switching devices and bus sections through which power can be supplied to the disconnected section, indicating the maximum possible power that does not overload other network elements; - minimize power interruptions, power and energy losses in the network, the number of operational switches, moving from one facility to another; – to replace a part of physically worn-out and obsolete network equipment. We hope that such developments will find wide application in the distribution power grids of Belarus.

The power system of the Russian Federation is ready to issue electricity to neighboring states - ROSSETI

The Russian energy system is ready to provide the necessary amount of electric power to neighboring states, the CEO of PJSC ROSSETI told reporters> Pavel Livinsky.

In 2018, the Baltic states, Poland and the European Commission signed a political agreement in Brussels on synchronizing the power grids of the three Baltic countries with the networks of continental Europe. By 2025, the Baltic states will have to finally withdraw from the BRALL energy ring (Belarus, Russia, Estonia, Latvia, Lithuania) and connect to the European energy system.

Ties with neighboring states remain, there is a flow, including to the Lithuanian energy system. In case of changes, and if there are no such needs, we can switch to isolated work at any time, but electricity exports are carried out, all flows are working as long as there is a need for this.

Now the Kaliningrad Region's power system is connected to the rest of Russia via the electric networks of Belarus, Estonia, Latvia and Lithuania. The energy independence of the region will be provided by four new power plants with a total capacity of about 1 GW. Three of them (on gas fuel) already put into operation, another one, coal, is being built as a spare and will operate in cold reserve mode.

The power generation facilities of the Kaliningrad Region have successfully tested the operation of the region's power system in an isolated mode. For eight hours, the power system of the Kaliningrad Region was disconnected from the BRALL energy ring and worked in isolation.

Generating companies are leaving the wholesale energy market en masse due to a variety of non-market mechanisms.

Over the past five years, 49 power plants with a total capacity of 1.2 GW have decided to trade electricity on the retail market - directly with the consumer or a distribution company. In this way, a thermal power plant can quadruple its income, experts say, and a direct buyer can save up to 10% of the cost of electricity. Only special restrictions can stop the generation leaving.

The wholesale energy market is losing its attractiveness for generating companies. Since 2015, 49 power plants with a total installed capacity of 1.25 GW have gone into the retail segment, according to the Market Council (energy market regulator). According to the rules, stations with a capacity of no more than 25 MW can switch from wholesale to retail, and this is prohibited for large facilities. As noted in the "Market Council", the transition is taking place for economic reasons, since the working conditions in the retail market are more attractive for some stations.

The cost of electricity in the wholesale market consists of two components - capacity (ready to work) and electricity (actually generated kilowatt-hours). In most thermal power plants, the payment for capacity is formed through a competitive power take-off (COM) mechanism. However, some of the stations also receive various additional payments: a surcharge under the program of contracts for the supply of power (PDM, guarantees a return on investment in the construction of the facility), to reduce energy tariffs in the Far East, the construction of a new generation in the Kaliningrad region and Crimea. Due to the increase in the number of surcharges, the average one-rate price of the wholesale market is constantly growing: in January - July of this year it was 2.5 thousand rubles. for 1 MWH in the first price zone (the European part of the Russian Federation and the Urals) and 1.8 thousand rubles. for 1 MWH in the second price zone.

In the retail market, the price is formed differently. A power plant with a capacity of less than 25 MW sells electricity to a specific consumer, a guaranteeing supplier (GP) or an energy sales company (ESC). Moreover, the contractual price cannot be higher than the one-rate price of the wholesale market. If the station receives only a payment by WHOM, but does not receive other surcharges for power, then it becomes more profitable for it to negotiate with the consumer directly. In addition, electricity producers in the retail market have no requirements for maintaining equipment in working condition, and there is also no need to undergo a power take-off procedure, the "Market Council" adds. Some generators specifically reduce the power of their stations in order to go to the retail market.

In the Council of Energy Producers (SPE, unites general companies), that objects that cannot compete with highly efficient generation in the wholesale market primarily go to the retail market. The SPE believes that it is necessary to raise the issue of finalizing the models of the wholesale and retail energy markets, including through the development of the institute of free bilateral agreements, leveling the conditions for the functioning of distributed generation and generation of the wholesale market. The Association of SOEs and ESC agree that without the introduction of special restrictions, the trend for the withdrawal of generation from the wholesale energy market will continue.

Taking into account the style of initiatives to introduce payment for the network reserve and differentiation of the FGC tariff, we do not exclude that instead of eliminating non-market surcharges to restore the attractiveness of the wholesale market, proposals for restrictions and surcharges for retail generation may appear.

The retail segment is more interesting for generators: they get the opportunity to sell power four times more expensive than on the wholesale market, as well as get rid of unprofitable obligations under regulated contracts (RD, contracts for the sale of power and electricity to the population at reduced prices), says Alexey Zhikharev, partner at Vygon Consulting. Moreover, the direct buyer will receive from such a generator a price lower by 5-10% than from the GP, he continues. But for consumers buying electricity and power from the wholesale market, the outcome of generation in the retail segment will mean an increase in final prices. According to Alexey Zhikharev, an additional 1.2 GW in retail increases the total load for such consumers by more than 10 billion rubles per year.

Republic of Tajikistan

The water level in the Nurek reservoir has reached its maximum level

In the energy sector of the republic on December 2, the water level in the reservoir of the Nurek HPP reached its maximum level.

According to the technical parameters, in order to fully fill the reservoir of the Nurek HPP, the water level should reach 910 meters. The day before , the water level in the reservoir of the Nurek HPP reached 909 m. 69 cm .

According to the source, the water flow on the Vakhsh River in the area of the Nurek reservoir yesterday amounted to 869 cubic meters per second, which is 346 cubic meters less than the same period last year.

According to the source, every day in the country, on average, more than 43.5 million kWh of electricity is generated.

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

According to the ministry, 546.6 million kWh of electricity was exported to Afghanistan in six months. This indicator in Uzbekistan amounted to 358.3 million kWh.

For the first time in 10-12 years, there was no idle discharge of water from the reservoirs of the Vakhsh cascade hydroelectric power station.

In the energy sector of the country, this year, due to low water, there was no idle discharge of water from the reservoirs of the Vakhsh cascade hydroelectric power station, including the Nurek hydroelectric power station. The water level in the reservoir of the Nurek HPP reached its maximum level in early December.

Compared to previous years, the inflow of water on the Vakhsh River was significantly less. Due to the lack of water this year, the export of electricity to Afghanistan and Uzbekistan was stopped earlier than the agreed deadlines. This is due to a decrease in the inflow of water on the Vakhsh River.

The water flow on the Vakhsh River near the Nurek reservoir in early December averaged 869 cubic meters per second, which is 346 cubic meters less than the same period last year. Every day in the country, on average, more than 43.5 million kWh of electricity is generated.

A few years ago, the annual idle discharge of water from reservoirs of hydroelectric power plants in Tajikistan was equivalent to 7-8 billion kWh of electricity. In order to somehow reduce the volume of idle water discharge, the republic began to supply electricity to neighboring countries at a relatively low price. At that time, Tajik power engineers said that it was better to sell electricity than to pass water into "idle".

135 border villages of Tajikistan will be electrified within five years

In the energy sector of the country, more than 500 km of power transmission lines will be stretched in 135 villages of Gorno-Badakhshan Autonomous Region and Khatlon Region within the framework of the Rural Electrification project.

The project will also install 139 transformers to provide electricity to 135 border villages.

The International Development Association (World Bank Group) will allocate $31.7 million to implement a rural electrification project in Tajikistan.

The project provides for the construction of small networks for connection to centralized networks, the construction of infrastructure for electricity generation, in particular, small hydroelectric power plants, the installation of wind generators and solar panels, the construction of infrastructure for electricity distribution, including power lines, transformers, electricity meters, etc.

The project also includes the provision of technical support to Pamir Energy for the construction of the Sebzor hydroelectric power plant.

The project implementation period is five years, that is, in the period from 2020 to 2025.

Electricity production in Tajikistan decreased by 5.6%

Tajikistan has reduced the production and export of electricity. According to Avesta in the energy sector of the republic, in the eight months of 2020, 13 billion 477.9 million kWh of electricity was produced in the country, which is 803 million kWh less than in the same period last year, or 5.6%.

According to the source, electricity exports also decreased during this period. Compared to January-August 2019, the amount of electricity sales to neighboring countries decreased by more than $30 million, or almost 40%, and amounted to over $46.4 million. At the same time, the volume of electricity exports for eight months is not reported.

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

In early December, Tajikistan resumed the export of electricity to Afghanistan, which was interrupted due to low water and a decrease in the water level in the reservoirs of the country's hydroelectric power plants, including the reservoir of the Nurek hydroelectric power plant.

At that time, Barki Tojik reported that due to the fact that the water level in the reservoir of the Nurek HPP reached the maximum level, it was decided to resume electricity supplies to Afghanistan.

"Now about 1.3 million kWh of electricity is exported to Afghanistan every day, in the summer period, up to 8 million kWh were exported to the neighboring country every day, depending on the circumstances," the ministry noted.

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

Tajikistan and Afghanistan supported the rapid implementation of the CASA-1000 project

Tajikistan and Afghanistan, during the visit of the Afghan delegation headed by Acting Minister of Foreign Affairs of Afghanistan Hanif Atmar, considered issues of bilateral relations and cooperation between the two countries in various fields, and also exchanged views on the situation in the region and the world, the RT MFA reports.

As part of the visit, on the eve of December 17, Tajikistan's Foreign Minister Sirodjiddin Muhriddin met with his Afghan counterpart Hanif Atmar in Dushanbe.

The sides noted that the joint fight against terrorism, extremism and drug smuggling is an important area of cooperation between the two countries. It was stressed that in order to eliminate the consequences of the COVID-19 pandemic, it is necessary to develop cooperation and partnership between the two countries.

In a joint statement following the meeting of the delegation of the parties, it is noted that Tajikistan supports the efforts of the Government of Afghanistan to ensure peace and stability in the country. In this regard, the Tajik side welcomes the process of inter-Afghan negotiations, which began on December 12, 2020 in Doha.

The Tajik side hopes that the inter-Afghan peace talks will lay a solid foundation for restoring peace and stability in this war-torn country.

Tajikistan is well aware of the key role of Afghanistan in ensuring security in the entire Central Asian region and has always supported the constructive initiatives of the international community to ensure peace and stability in Afghanistan and its economic and social reconstruction. Tajikistan has paid close attention to these issues during its current chairmanship of the Istanbul Process — the Heart of Asia.

Today, the whole world is witnessing bloody conflicts in various countries and regions, the growing activity of terrorist and extremist groups, the aggravation of geopolitical and geostrategic competition. Undoubtedly, these phenomena can pose a serious threat to the current situation and the future of the countries of our region. In this regard, it is considered necessary to take joint measures to destroy the bases of terrorists, organized criminal groups and drug traffickers.

Tajikistan is ready to strengthen and expand the legal framework of bilateral cooperation with Afghanistan. Currently, the parties are considering a number of new documents on cooperation in various fields.

One of the priority areas of cooperation between the two countries is the energy sector. Tajikistan is ready to take the necessary measures to ensure and increase regular electricity supplies to neighboring Afghanistan. In this context, cooperation between the two countries is of great importance in the joint implementation of the CASA-1000 regional project in the shortest possible time.

Tajikistan strives to build new transport corridors between our countries and implement mutually beneficial regional projects. In this regard, it fully supports the creation of the KTAI transit corridor (Kyrgyzstan, Tajikistan, Afghanistan and Iran) and creates all the necessary conditions for its effective functioning.

Within the framework of the Tajikistan— Afghanistan—Turkmenistan railway program, the project of the Jaloliddin Rumi—Nizhny Panj railway and the bridge over the Panj River to Kunduz have been agreed, and their construction will begin in the near future. It will be part of the railway between Tajikistan, Afghanistan and Iran and will be connected to the international transport corridor "North —South".

Tajikistan and Afghanistan successfully cooperate within the framework of international and regional organizations, such as the UN, the Shanghai Cooperation Organization, the Organization of Islamic Cooperation and others.

Tajikistan and Afghanistan are countries with deep historical, cultural, linguistic, spiritual and artistic ties. Tajikistan is ready to continue to provide assistance to Afghanistan in training national personnel. Dozens of Afghan students are currently studying at Tajik universities in various disciplines on the basis of scholarships from the Government of Tajikistan.

Following the meeting, in the presence of the heads of the two delegations, a Memorandum of Understanding was signed between the Committee for Environmental Protection under the Government of the Republic of Tajikistan and the National Agency for Environmental Protection under the Government of the Islamic Republic of Afghanistan on cooperation in the field of environmental protection.

The President commissioned two modernized units of the Sarband HPP

Emomali Rahmon visited Sarband HPP in Levakant today and commissioned two blocks of this important hydropower facility. According to the press service of the head of state, power units No. 2 with a capacity of 39 MW and No. 6 with a capacity of 49 MW have been put into operation. It is noted that the reconstruction of power unit No. 3 has now begun.

It should be noted that the design capacity of the Sarband HPP is 240 MW, and this is the fifth largest power plant in the republic.

In 2010-2012, the 4th HPP unit with a capacity of 45 MW was completely reconstructed.

Earlier it was reported that five of the six units of the Sarband hydroelectric power station should be reconstructed by 2022. After the reconstruction, the capacity of the HPP will reach 270 MW, instead of the current 240 MW.

Recall that the reconstruction of the Sarband HPP began in November 2016. Later, changes were made to the HPP modernization project, according to which five hydroelectric units will be upgraded instead of three.

The joint venture Sinohydro-Heidrochaina is engaged in the replacement of HPP units.

The project of rehabilitation of the Main HPP with a capacity of 240 MW is financed by a grant of the Asian Development Bank in the amount of $136 million. Earlier it was planned that the first, second and fifth hydroelectric units of the station would be upgraded. Also, as part of the modernization, major repairs of the third and sixth hydraulic units were planned.

According to the energy sector, during the dismantling of unit No. 5, the condition of the equipment turned out to be worse than expected. Since units No. 3 and No. 6 have the same design and age, it can be reasonably assumed that their replacement may be preferable to an assessment of their condition and repair, as originally determined.

In turn, Barki Tojik requested ADB to make a minor change in the scope of work of the project in order to use the saved grant funds for the modernization of units No. 3 and No. 6. The project consists of two phases, its implementation will be completed in 2022.

The Sarband HPP was put into temporary operation as part of the construction of a cascade of hydroelectric power plants on the Vakhsh River in 1962, and in 1966 it was fully launched. Over the years of operation, the HPP has generated more than 50 billion kWh of electricity.

 Republic of Kazakhstan

Kyrgyzstan plans to buy 500 million kWh of electricity from Kazakhstan in the first quarter of 2021

Kyrgyzstan has a preliminary agreement with Kazakhstan on the purchase of 500 million kWh of electricity in the first quarter of 2021, First Deputy Prime Minister Almazbek Baatyrbekov said on Birinchi Radio.

According to him, now there is a cycle of low water and little water has entered the Toktogul reservoir compared to last year — 14.8 billion cubic meters of water have been accumulated, or 2 billion cubic meters less.

"At the same time, this year the government exchanged electricity with Kazakhstan in the amount of about 300 million kWh. Since December 15, these 300 million kW.We will start receiving electricity from Kazakhstan. In addition, due to the lack of water on the part of the government, 500 million kWh is planned to be purchased and by the end of the year, if we buy, we plan that 800 million kWh will be saved in the Toktogul reservoir," the first Deputy Prime Minister said.

There is also a preliminary agreement with the Kazakh side on the purchase of 500 million kWh for the 1st quarter of 2021, but today the price has not been specified.

Kazakhstan says that according to their internal procedures, the price for this year has been clarified, and next year it will be clarified at the beginning of the year, he added.

"In addition, it is planned to increase the volume of electricity generation at the Bishkek CHP. God willing, there will be no rolling blackouts," he said.

Transfer of Almaty CHPP-2 to gas. Briefly about the most important thing.

As it is known, JSC "Samruk-Energo" is working on the modernization of the Almaty CHP-2 in order to minimize emissions into the environment. Given the importance of the topic, the company tried to provide answers to the most pressing questions related to this project.

 Almaty CHPP-2: gasification

Almaty CHPP-2 will be fully converted to gas. Thus, an end has been put to active discussions on how to modernize the CHP-2 and minimize its harmful effects from emissions on the environment.

This issue was initiated by the public of the city, environmentalists – they were uncompromising in their conviction, demanding the transfer of the station to environmentally friendly fuel – gas. The arguments were heard, and a principled positive decision on this issue was made at the state level. On August 1, 2019, the roadmap for the modernization of CHP-2 was approved.

About the choice of project options.

 Discussions and discussions of the modernization option were also hot and not only in person, but also online. In particular, using the Zoom and Facebook platforms. In total, over 20 thousand people took part in the open debate. In accordance with the technical specification for the development of the feasibility study, four options were considered:

• Modernization of boilers with conversion to gas;

• Reconstruction of existing boilers with installation of gas cleaning equipment;

• Expansion of CHP-2;

• Construction of a new gas station.

 After discussing the problem with energy specialists, environmentalists, economists, and government representatives, the sole shareholder of the owner of the station, JSC Samruk–Energo, taking into account the opinion of the public and industry professionals, chose an acceptable, environmentally friendly and technically feasible option No. 1. Its developer of the feasibility study is KazNIPIEnergoprom JSC.

Why KazNIPIEnergoprom?

The selection of the feasibility study "Modernization of Almaty TPP-2 with minimization of environmental impact" was carried out by an open tender with the participation of several potential development groups: JSC "Kazakhstan Research and Design and Survey Institute of Fuel and Energy Systems "Energia", IP "Kuanysh Yerlan Muratuly", JSC "KazNIPIEnergoprom Institute".

The only potential supplier with the relevant application is KazNIPIEnergoprom Institute JSC, which has a 60–year history of energy construction and carries out the entire range of pre-design and design work in the field of thermal power engineering. On November 15, 2019, an agreement was signed with this organization for the development of a feasibility study with a validity period until December 31, 2020.

And if the CHP-2 is demolished at all?

 CHP-2 provides about 50% of the heat of the district heating and electricity supply zone of Almaty. The remaining facilities of JSC "AlES" will not be able to compensate for such a volume of heat and electric energy that has been eliminated.

 In addition, the station is connected by extended thermal networks with other energy sources of the company – CHP-1 and the Western Thermal Complex. Together they optimize the production of thermal energy, balance each other and minimize fuel costs. In the event of the demolition of CHP-2, 14 boiler houses with a capacity of 100 Gcal per hour will be required to replace its installed thermal capacity with the construction of the necessary infrastructure. Of course, all these measures to compensate for the loss of thermal energy of the CHP-2 will not improve the ecology of the city. And if the import of electricity at certain multibillion-dollar costs can be adjusted, then the import of thermal energy from other regions is impossible. Especially in such significant volumes – 3,200 thousand Gcal per year.

And if you build a new station?

The construction of a new gas power plant on another site is an expensive project in itself. The price of the issue is about 275 billion tenge. Plus, it is necessary to build additional infrastructure for the station: water supply, gas supply, extended heating networks, etc.

About suggestions and comments.

 At the stages of discussion of the feasibility study, there is an opportunity for everyone to speak out. The document in full will be submitted to public hearings during the state environmental assessment, according to the "Environmental Code of the Republic of Kazakhstan". All interested organizations and members of the public will be able to take part in public hearings.

 ...Minus 80% of emissions, plus gas from KazTransGas

 What does this choice of project No. 1 give to Almaty residents? The main thing is clean air. The transfer of the CHP-2 station included in the complex of JSC ALES to the combustion of natural gas completely eliminates the atmosphere of the city from emissions of coal ash, sulfur dioxide and ash. Emissions of nitrogen oxides and carbon are reduced, greenhouse gas emissions are reduced. In general, it is estimated that when converting CHP-2 to gas, the annual amount of emissions of pollutants into the atmosphere is reduced by more than 80%.

 At the same time, the project has the lowest construction cost – 98.4 billion tenge. This is without taking into account the construction of two external gas pipelines. There is a preliminary technical condition for gas supply from the national operator KazTransGas JSC. In addition, the implementation of this project also removes the problem with ash dumps. Today, the total area of dry storage gold dumps at CHP-2 is 200 hectares. The transfer of the station to gas will allow the use of these lands for other needs of the city.

Improve what is there.

 Is it really possible to "tune" the project of the 70s of the last century to the level of the 21st century? The specialists who dealt with this issue give their reasoned arguments. To put it simply, then:

• the reconstruction of CHP-2 is based on the preservation of the energy source using the existing site with the existing infrastructure;

• pulverized coal boilers will be replaced with new gas boilers with the preservation and strengthening of the existing frame; that is, the foundation is reliable and strong, with a high degree of seismic safety - existing, and the equipment, technology – new, with high efficiency;

• new boiler units are placed above the station level of 0.000 m, which meets the regulatory requirements of the Republic of Kazakhstan; they are installed on existing boiler frames;

• new boilers have improved environmental and technical and economic indicators; their efficiency is 94.5% (on existing boilers about 89%);

• to ensure emissions of nitrogen oxides during natural gas combustion, it is proposed to install 8- and low-toxic vortex gas burners and 4 air blast nozzles.

At whose expense is the project?

 In 2019, a roadmap for the implementation of the project was approved, according to the points of which the project will be financed. JSC "AlES" does not have such resources. The city will not pull the project either. Currently, various financing options are being worked out: lending, funds from the state budget, shareholder support, participation of Kazakhstani development institutions, PPP, marginal tariffs. Combined solutions are possible. But it is unequivocally clear: green energy requires considerable investments.

Clean air costs money.

Natural gas is a much more expensive type of fuel for Almaty than Ekibastuz coal. If we compare in terms of conventional fuel, its price is currently 2.3 times higher than the cost of coal. The final tariff for thermal energy for Almaty consumers consists of tariffs for its production, transmission, distribution of several companies of the city's energy complex.

 But the feasibility study did not determine the tariff itself, but assessed the impact of changes in the costs of CHP-2 on tariffs. The document shows the impact on the tariffs of the transfer of the station to the production of thermal energy of JSC "AlES" and on heat supply services for Almaty consumers.

After the implementation of the project of converting CHP-2 to gas, the following algorithm was determined:

• the fuel component in the cost increases 2.2 times,

• the cost of heat energy production will increase by 1.6 times,

• the estimated tariff for the production of thermal energy of JSC "AlES" will increase by 30-40%.

• the estimated tariff for thermal energy for consumers will increase by 20-25%.

• all other heat sources, except CHP-2, are taken into account at the level of 2020 indicators.

What stages of project approvals and approvals are coming?

• Public hearings of the EIA (Environmental Impact Assessment) will be held in October-November 2020.

• Then the feasibility study will be submitted for approval to the state expertise.

• Based on the conclusion of the state expertise, the feasibility study will be approved by the customer – JSC "Samruk-Energo".

What are the realistic deadlines for the completion of the project?

Taking into account the opinion of the public and the Akimat of Almaty, actions are currently being taken to optimize the timing of the final transfer of the station to gas. As previously reported, according to the approved plan, the completion of the complete modernization of the CHP-2 was planned in 2029. But it is worth noting that the station has 8 boilers, and their conversion to gas will be carried out in stages. This means that from 2025, part of the CHP will already be converted to gas.

Almaty's energy sector is "green"

by AlES JSC on a systematic basis and consistently engaged in improving the environmental friendliness of its facilities. A few facts:

• by 2013, all boilers of the company's thermal power plants were equipped with emulsifiers of a new generation, with a degree of ash recovery of 99.2%, at CHP-1, and 99.5% at CHP-2 and CHP-3;

• this made it possible to reduce the total emissions of AlES for inorganic dust from 19 thousand tons in 2007 to 8 thousand tons in 2019;

• work was carried out to reduce the yield of nitrogen oxides and environmental measures were carried out in terms of repairing the main and auxiliary equipment of all three of the company's CHP plants;

• CHP-1 has been switched to 100% gas combustion since 2017;

• total emissions of JSC AlES were reduced from 68 thousand tons in 2007 to 49 thousand tons in 2019, which is 27%;

• the development of a pre-feasibility study for the transfer to gas of CHP-3 has begun.

 JSC "AlES" together with JSC "Samruk-Energy", other large industrial enterprises of the country and associations of KEA and Kazenergy participates in the working group on the creation of a new Environmental Code of the Republic of Kazakhstan, as well as a handbook on the best available technologies.

The first step is done. Who's next?

The main investment projects of Pavlodar CHP-3 and CHP-2

The total amount planned for the implementation of investment programs of two heat and power plants of PAVLODARENERGO JSC in 2020 is 1 billion 428 million tenge. Including investments in projects under the investment program approved by the DCREM amount to 91 million 652 thousand tenge. The power engineers told about which investment projects are being implemented at Pavlodar CHP-3 and CHP-2 during a press tour with the participation of representatives of the DCREM in the Pavlodar region, non-governmental organizations and regional media.

"We have the right to know what results have been achieved with the funds that consumers have paid under the tariff," said Timur Amirkhanov, head of the Department of the Committee for Regulation of Natural Monopolies, Protection of Competition and Consumer Rights of the Ministry of National Economy of the Republic of Kazakhstan for the Pavlodar region. – According to the results of the press tour, we can say that the investment program for the previous year has been fully implemented, the indicators that were agreed with the authorized body have been achieved."

One of the most significant recent projects has been the installation of a station coordinator at the Pavlodar CHP-3. PAVLODARENERGO has invested about 211 million tenge in its implementation.

"The station coordinator has been implemented to maintain the electrical and thermal load of the entire station in an automated mode. It connects the local control systems of five boilers and five turbine units of the CHP-3 into a single chain. The goal of the coordinator is to find a balance between the load of turbo generators and consumers of thermal energy. For example, with an increase in steam consumption, it is necessary to increase the load of boilers. Or, conversely, if the consumption changes downwards, the boiler must be unloaded. The station coordinator automatically balances the steam pressure in the main steam line and the load of the turbo generators. This reduces the risk of an emergency and an unplanned equipment shutdown," said Vadim Lesin, Deputy General Director of PAVLODARENERGO JSC.

In addition, in the conditions of the electric power market, the station coordinator allows you to execute the commands of the Kegoc system operator as quickly and accurately as possible, ensuring a uniform rate of load reduction and set, as well as maintaining the installed capacity.

As part of the investment program, a new automation project, the PRANA predictive and remote monitoring system has been implemented at Pavlodar CHP-3. The cost of the system is 195 million 387 thousand tenge, It allows you to anticipate the development of malfunctions and accidents at the turbine unit, ensures the trouble-free operation of power plants and reduces unplanned downtime. The system compares the current data on the condition of the equipment with mathematical models and automatically detects emerging malfunctions. In one second, PRANA processes 2500 parameters of a working power unit. And acoustic sensors are capable of detecting movement, vibration or deformation of the foundation plate of the turbo generator, changing and registering the parameters of the integrity and operation of the equipment. PRANA performs system diagnostics in seconds, whereas a specialist needs from several hours to several days for such work.

Among the major investment projects of CHP-3 is the expansion of the first stage of the ash dump. An additional capacity of 2,820 thousand m3 is necessary for the storage of ash and slag waste, since the current capacity of the second stage of the ash dump has already exhausted itself. In addition, a reserve of time is needed for the construction of the third stage of the TPP-3 ash dump. The expansion of the first stage will ensure the storage of ash and slag from CHP-3 for a little more than two years.

The costs planned for the implementation of the project amount to 188 million tenge.

PAVLODARENERGO JSC has signed an agreement with SEVKAZENERGOPROM LLP for the development of a project for the construction of a reinforced concrete chimney No. 2 at the CHP-3. This construction will make it possible to remove restrictions on the traction of the station's boilers and will make it possible to connect boilers No. 7 and No. 8 to the pipe, the construction of which is planned in the future.

In Kazakhstan, it was allowed to increase the marginal tariffs for electricity.

The Committee on Regulation of Natural Monopolies reported how much prices will rise because of this. The state agency noted that by the order of the Minister of Energy, the marginal tariffs for this type of utility services increased by an average of 17%. Due to this, the prices of energy supply organizations in 13% of the country's regions increased by an average of 8.2%. The average value of the selling price is 17.14 tenge per kWh without VAT, which is 1.25 tenge higher.

"By the end of the year, electricity prices are expected to increase by an average of 6% for the population in Kyzylorda, Mangystau, West Kazakhstan regions and Almaty," the KREMLIN predicted.

Tariffs for regulated water supply and sanitation services will be changed until the end of 2020 within the approved long-term tariff limits. The same applies to thermal energy.

At the same time, the KREMLIN explained that the marginal prices for these types of public services from 2015 are laid for five or more years. At the same time, a natural monopoly entity may apply for a tariff change, calling the reason for the increase in the marginal cost of electricity.