****

**REPORT**

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

**JANUARY-DECEMBER 2021**

**DEPARTMENT "MARKET DEVELOPMENT"**

**January, 2022**

Table of contents

[**SECTION I**](#_Toc94276143)  [3](#_Toc94276143)

[**1.**](#_Toc94276144)  [**Production of electricity in the UES of Kazakhstan**](#_Toc94276144)  [3](#_Toc94276144)

[*Electricity generation by regions of the Republic of Kazakhstan*](#_Toc94276145)  [3](#_Toc94276145)

[**2.**](#_Toc94276146)  [**Consumption of electric energy in the UES of Kazakhstan**](#_Toc94276146)  [4](#_Toc94276146)

[*Consumption of electrical energy by zones and regions*](#_Toc94276147)  [4](#_Toc94276147)

[**3.**](#_Toc94276148)  [**Results of the work of the industry in January-December 2021**](#_Toc94276148)  [5](#_Toc94276148)

[*Electricity consumption by large consumers in Kazakhstan*](#_Toc94276149)  [7](#_Toc94276149)

[**4.**](#_Toc94276150)  [**Coal**](#_Toc94276150)  [8](#_Toc94276150)

[*Coal mining in Kazakhstan*](#_Toc94276151)  [8](#_Toc94276151)

[*Coal mining Samruk-Energy JSC*](#_Toc94276152)  [8](#_Toc94276152)

[*Sales of coal JSC "Samruk-Energy"*](#_Toc94276153)  [8](#_Toc94276153)

[**5.**](#_Toc94276154)  [**Renewable energy sources**](#_Toc94276154)  [9](#_Toc94276154)

[**6.**](#_Toc94276155)  [**Centralized trading in electricity of KOREM JSC**](#_Toc94276155)  [10](#_Toc94276155)

[**7.**](#_Toc94276156)  [**Export-import of electrical energy**](#_Toc94276156)  [10](#_Toc94276156)

[**SECTION II**](#_Toc94276159)  [14](#_Toc94276159)

[**9.**](#_Toc94276160)  [**Status of formation of the Common Electricity Market of the Eurasian Economic Union**](#_Toc94276160)  [14](#_Toc94276160)

[**10.**](#_Toc94276161)  [**Status of formation of the Electricity market of the CIS**](#_Toc94276161)  [15](#_Toc94276161)

[**11.**](#_Toc94276162)  [**Media review in the CIS countries**](#_Toc94276162)  [16](#_Toc94276162)

# **SECTION I**

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

According to the System Operator, power plants of the Republic of Kazakhstan in January-December 2021, 114,447.9 million kWh of electricity were generated, which is 5.8% more than the same period in 2020. The growth in generation was observed in all zones of the UPS of Kazakhstan.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Zone** | **Generation type** | **January-December** | | **Δ, %**  **2020** |
| **2020** | **2021** |
| **Kazakhstan** | **Total** | **108,085.8** | **114,447.9** | **5.8%** |
| *TPP* | *86662.6* | *91164.2* | *5.2%* |
| *GTES* | *9527.7* | *10701.8* | *12.3%* |
| *hydroelectric power station* | *9545.8* | *9184.9* | *-3.8%* |
| *WES* | *1094.1* | *1758.0* | *60.6%* |
| *SES* | *1250.7* | *1636.5* | *30.8%* |
| *BSU* | *4.9* | *2.5* | *-49%* |
| **Northern** | **Total** | **83032.0** | **87783.9** | **5.7%** |
| *TPP* | *72345.7* | *76954.6* | *6.3%* |
| *GTES* | *3159.4* | *2949.9* | *-6.7%* |
| *hydroelectric power station* | *6553.0* | *6515.6* | *-0.6%* |
| *WES* | *515.9* | *841.3* | *63%* |
| *SES* | *453.1* | *520.0* | *14.7%* |
| *BSU* | *4.9* | *2.5* | *-49%* |
| **South** | **Total** | **11565.7** | **12175.0** | **5.2%** |
| *TPP* | *7338.6* | *7517.3* | *2.4%* |
| *GTES* | *166.7* | *269.7* | *61.7%* |
| *hydroelectric power station* | *2992.8* | *2669.3* | *-10.8%* |
| *WES* | *273.0* | *605.3* | *221.7%* |
| *SES* | *794.6* | *1113.4* | *40.1%* |
| **Western** | **Total** | **13488.1** | **14489.0** | **7.4%** |
| *TPP* | *6978.3* | *6692.3* | *-4.1%* |
| *GTES* | *6201.6* | *7482.2* | *20.6%* |
| *WES* | *305.2* | *311.4* | *2.0%* |
| *SES* | *3.0* | *3.1* | *3.3%* |

# 

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

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

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **January-December** | | **Δ, %** |
| **2020** | **2021** |
| 1 | Akmola | 4628.5 | 5413.7 | 17% |
| 2 | Aktobe | 3,816.5 | 3,747.9 | -1.8% |
| 3 | Almaty | 7201.8 | 6,827.5 | -5.2% |
| 4 | Atyrau | 6261.9 | 7,041.4 | 12.4% |
| 5 | East Kazakhstan | 9482.1 | 9255.9 | -2.4% |
| 6 | Zhambyl | 2388.8 | 3,028.4 | 26.7% |
| 7 | West Kazakhstan | 2254.3 | 2411.8 | 6.9% |
| 8 | Karaganda | 16,346.8 | 15746.0 \_ | -3.7% |
| 9 | Kostanay | 1,082.9 | 995.0 | -8.2% |
| 10 | Kyzylorda | 505.7 | 623.6 | 23.3% |
| 11 | Mangistau | 4,971.9 | 5,035.8 | 1.2% |
| 12 | Pavlodar | 44,336.1 | 49,915.5 | 12.5% |
| 13 | North Kazakhstan | 3339.1 | 2,709.1 | -18.9% |
| 14 | Turkestan | 1469.4 | 1695.5 | 15.3% |
|  | **Total for Kazakhstan** | **108,085.8** | **114,447.9** | **5.8%** |

The volume of electricity production by energy producing organizations of Samruk-Energy JSC for January-December 2021 amounted to 35,609.3million kWh The increase in electricity generation compared to the same period in 2020 amounted to 13.5%.

*million kWh*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Δ 2021/2020** | |
| **January December** | **share in Kazakhstan, %** | **January December** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **JSC "Samruk-Energy"** | **31,385.4** | **29.0%** | **35,609.3** | **31.1%** | **4223.9** | **13.5%** |
| *1* | *JSC AlES* | *5335.1* | *4.9%* | *5008.4* | *4.4%* | *-326.7* | *-6.1%* |
| *2* | *LLP "Ekibastuz GRES-1"* | *19466.4* | *18.0%* | *22788.4* | *19.9%* | *3 322* | *17.1%* |
| *3* | *JSC "Ekibastuz GRES-2"* | *4974.2* | *4.6%* | *6433.4* | *5.6%* | *1459.2* | *29.3%* |
| *4* | *JSC "Shardara HPP"* | *513.5* | *0.5%* | *455.8* | *0.4%* | *-57.7* | *-11.2%* |
| *5* | *JSC "Moinak HPP"* | *929.5* | *0.9%* | *758.3* | *0.7%* | *-171.2* | *-18.4%* |
| *6* | *Samruk-Green Energy LLP* | *7.3* | *0.0%* | *20.4* | *0.0%* | *13.10* | *179.5%* |
| *7* | *LLP "First wind power plant"* | *159.4* | *0.1%* | *144.6* | *0.1%* | *-14.8* | *-9.3%* |

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

# *Consumption of electrical energy by zones and regions*

According to the System Operator, in January-December 2021, there was an increase in the dynamics of electricity consumption in the republic compared to January-December 2020 by 6%. Thus, in the northern zone of the republic, consumption increased by 5%, in the southern zone by 9% and in the western zone by 7%.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **January - December 2020** | **January - December 2021** | **Δ,  million kWh** | **Δ, %** |
|  | **Kazakhstan** | **107 344.8** | **113890.28** | **6545.48** | **6%** |
| 1 | Northern zone | **70,522.2** | **73853.89** | **3331.69** | **5%** |
| 2 | Western zone | **13,535.2** | **14548.24** | **1013.04** | **7%** |
| 3 | Southern zone | **23,287.4** | **25488.15** | **2200.75** | **9%** |
|  | ***including by regions*** |  |  |  |  |
| 1 | East Kazakhstan | 9 204.8 | 9636.86 | 432.06 | 5% |
| 2 | Karaganda | 18 461 | 19001.58 | 540.58 | 3% |
| 3 | Akmola | 9,196.6 | 10304.97 | 1108.37 | 12% |
| 4 | North Kazakhstan | 1665.2 | 1729.56 | 64.36 | 4% |
| 5 | Kostanay | 4615.8 | 4809.73 | 193.93 | 4% |
| 6 | Pavlodar | 20,731.4 | 21482.31 | 750.91 | 4% |
| 7 | Atyrau | 6255.6 | 6673.33 | 417.73 | 7% |
| 8 | Mangistau | 5,023.1 | 5267.39 | 244.29 | 5% |
| 9 | Aktobe | 6,647.5 | 6888.89 | 241.39 | 4% |
| 10 | West Kazakhstan | 2256.6 | 2607.52 | 350.92 | 16% |
| 11 | Almaty | 11,367.8 | 12452.86 | 1085.06 | 10% |
| 12 | Turkestan | 5211.2 | 5759.94 | 548.74 | 11% |
| 13 | Zhambyl | 4948.3 | 5321.86 | 373.56 | 8% |
| 14 | Kyzylorda | 1760.1 | 1953.488 | 193.39 | eleven% |

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

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

January-December 2021 compared to January-December 2020, the industrial production index (hereinafter referred to as IPP) amounted to 103.8 % . An increase in production volumes was recorded in 15 regions of the republic, a decrease was observed in the West Kazakhstan and Mangystau regions.

**Changes in industrial output by region**

*in % to the corresponding period of the previous year, increase +, decrease -*

In the city of Almaty, due to an increase in the production of soft drinks, boxes, boxes made of paper or cardboard, plastic bags and bags, ready-mixed concrete, mortars, steel pipes, building prefabricated metal structures, cars, buses, the IPP amounted to 120.8%.

In the city of Nur-Sultan, the IPP was 112.4% due to the growth in the production of soft drinks, preforms, ready-mixed concrete, mortars, refined gold, tiles, bricks from cement and concrete, prefabricated structures from cement and concrete, production of railway and diesel locomotives .

In the Almaty region, the IPP was 111.8% due to an increase in the production of soft drinks, pasta, sugar, tiles, cement and concrete bricks, prefabricated metal structures, Portland cement, glass containers, electrical wires and cables, mortars.

In the Akmola region, due to an increase in the extraction of gold ores, the production of chilled poultry meat, pesticides, ready-made animal feed, pipes and hoses made of rubber, slag wool, the production of combines, tractors and trucks, the IPP amounted to 109.5%.

In the Kostanay region, the IPP amounted to 110.8% due to an increase in the extraction of gold and aluminum ores, copper and iron ore concentrates, iron ore pellets, asbestos, the production of gold in doré alloy, hot-rolled bars and rods from steel, tractors, combines, cars and trucks.

In the city of Shymkent, due to an increase in the production of sunflower oil, Portland cement, motor oil, heating oil, diesel fuel, kerosene, transformers, plastic pipes, the IPP amounted to 106.6%.

In the North-Kazakhstan region, due to the growth in the extraction of uranium and thorium ores, the production of milk, confectionery, cheese, bags and packaging bags, an increase in the production of freight cars, the IPP amounted to 105.8%.

In the East Kazakhstan region, the IPP amounted to 103.4% due to an increase in the extraction of copper and gold ores, lead-zinc ores, gold concentrates, the production of refined copper, gold in doré, raw zinc, oxygen, building solutions, trucks.

In the Zhambyl region, due to the growth in the extraction of copper and gold-bearing ores, finely ground phosphate raw materials, the production of sugar, sausages, pesticides, pharmaceuticals, ferrosilicomanganese, phosphoric acid, fuel oil, the IPP amounted to 104.6%.

In Pavlodar region, the IPP amounted to 102.3% due to the growth in the production of pesticides, ferrosilicochromium, ferrosilicomanganese, propylene polymers, gasoline, diesel fuel, kerosene, parts of railway locomotives, and electricity.

In the Turkestan region, due to the growth in the extraction of uranium and thorium ores, gold concentrates, the production of soft drinks, sausages, cheeses, wires and cables, circuit breakers, cement clinkers, Portland cement, natural uranium, building prefabricated metal structures, the IPP amounted to 103.6%.

In the Aktobe region, the IPP amounted to 102.7% due to an increase in the production of oil, gas condensate, copper and zinc concentrates, iron ores, an increase in the production of ferrochromium, chromium salts, chromium oxide, sodium dichromate, diesel fuel, fuel oil, building prefabricated metal structures.

In the Atyrau region, the IPP amounted to 102.1% due to an increase in oil production, the production of gasoline, kerosene, diesel fuel, heating oil, domestic furnace fuel, and vacuum gas oils.

In the Karaganda region, the growth of IPP amounted to 102.2% due to an increase in the extraction of coal, gold ores and concentrates, copper ores, lead-zinc ores, the production of medicines, pig iron, flat and galvanized rolled products, non-alloyed steel.

In the Kyzylorda region, the IPP amounted to 100.8% due to an increase in the extraction of uranium and thorium ores, the production of rice, sulfuric acid, natural uranium, Portland cement, building prefabricated structures made of concrete.

In Mangistau oblast, the IPP decreased mainly due to the reduction in the provision of services in the mining industry (98.6%).

In West Kazakhstan IPP amounted to 94.5% due to a decrease in gas condensate production.

# *Electricity consumption by large consumers in Kazakhstan*

In January-December 2021, compared to the same period in 2020, electricity consumption by large consumers decreased by 1.9%.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Consumer** | **January-December** | | |
| **2020** | **2021** | **Δ, %** |
| 1 | ArcelorMittal Temirtau JSC | 3,708.1 | 3,771.6 | 1.7% |
| 2 | JSC AFP (Aksu) "TNK Kazchrome" | 5,819.6 | 5,172.0 | -11.1% |
| 3 | Kazakhmys Smelting LLP | 1208.7 | 1060.3 | -12% |
| 4 | Kazzinc LLP | 2858.2 | 2,787.4 | -2% |
| 5 | JSC "Sokolovsko-Sarbayskoye GPO" | 1,734.5 | 1624.2 | -6% |
| 6 | Kazakhmys Corporation LLP | 1282.3 | 1292.8 | 1% |
| 7 | AZF JSC (Aktobe) "TNK Kazchrome" | 3235.2 | 3272.2 | 1% |
| 8 | RSE “Channel them. Satpaev" | 271.5 | 393.5 | 45% |
| 9 | Kazphosphate LLP | 2212.2 | 2,102.3 | -5% |
| 10 | NDFZ JSC (part of Kazphosphate LLP) | 1935.8 | 1,777.2 | -8% |
| 11 | LLP "Taraz Metallurgical Plant" | 278.7 | 295.4 | 6% |
| 12 | JSC "Ust-Kamenogorsk titanium and magnesium plant" | 643.5 | 690.3 | 7% |
| 13 | Tengizchevroil LLP | 1,834.6 | 1,837.0 | 0% |
| 14 | PAZ JSC (Pavlodar Aluminum Smelter) | 953.9 | 950.6 | 0% |
| 15 | JSC "KEZ" (Kazakhstan electrolysis plant) | 3,773.0 | 3,780.7 | 0% |
| 16 | TemirzholEnergo LLP | 1506.7 | 1672.2 | eleven% |
| 17 | JSC "KEGOC" | 4,865.9 | 5480.1 | 13% |
| **Total** | | **36,186.6** | **35,495.2** | **-1.9%** |

In 2021, there is an increase in electricity consumption by the companies of Samruk-Energy JSC by about 9.9% compared to 2020.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Name** | **January-December** | | **Deviation, million kWh** | **Δ, %** |
| **2020** | **2021** |
| **I** | **JSC "Samruk-Energy"** | **7385.04** | **8,119.3** | **734.3** | **9.9%** |
| *1.* | *LLP "Bogatyr-Komir"* | *300.73* | *300.4* | *-0.3* | *-0.1%* |
| *2.* | *JSC "AlatauZharyk Kompaniyasy"* | *1012.00* | *1050.6* | *38.6* | *3.8%* |
| *3.* | *AlmatyEnergoSbyt LLP* | *6072.30* | *6,768.3* | *696.0* | *11.5%* |

# **Coal**

# *Coal mining in Kazakhstan*

According to the Bureau of National Statistics, Kazakhstan produced 111,742.4 thousand tons of coal in January-December 2021, which is 2.3% more than in the same period in 2020 (109,227.6 thousand tons).

*Coal mining by Samruk-Energy JSC*

In January-December 2021, Bogatyr Komir LLP produced 44,632 thousand tons, which is 0.5% more than in the corresponding period of 2020 (44,436 thousand tons).

*Sale of coal by Samruk-Energy JSC*

In January-December 2021, 44,741 thousand tons were sold, including:

- to the domestic market of the Republic of Kazakhstan 34,939 thousand tons, which is 4.7% more than in the corresponding period of 2020 (33,378 thousand tons);

- for export (Russian Federation) - 9,802 thousand tons, which is 2.5% less than for the corresponding period of 2020 (10,058 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **Sales volume, thousand tons** | | **Δ, %**  **2021/2020** |
| **January-December 2020** | **January-December 2021** |
| **Total to the domestic market of the Republic of Kazakhstan** | | **33 378** | **34 939** | **104.7%** |
| **Total for export to Russia** | | **10 058** | **9 802** | **97.5%** |

According to the indicators for January-December 2021, compared to the same period in 2020, the Company has observed an increase in coal sales by 2.2%.

# **Renewable energy sources**

According to the Ministry of Energy of the Republic of Kazakhstan, the volume of electricity production by renewable energy facilities (SPP, WPP, BGS, small hydropower plants) of the Republic of Kazakhstan for January-December 2021 amounted to 4,220.3 million kWh. In comparison with the period of January-December 2020 (3,245.1 million kWh), the increase was 30.1%.

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **20 2 1g** | | **Deviation 20 2 0/2021,** | |
| **January December** | **share in Kazakhstan, %** | **January December** | **share in Kazakhstan, %** | **million kWh** | **%** |
| **I** | **Total output in Kazakhstan** | **108,085.8** | **100%** | **114,447.9** | **100%** | **6362.1** | **5.9** |
| **II** | **Total RES in the Republic of Kazakhstan, incl. by type** | **3245.1** | **3.0%** | **4220.3** | **3.7%** | **975.2** | **30.1** |
| 1. | *SES* | *1349.7* | *41.6%* | *1641.1* | *38.9%* | *291.4* | *21.6* |
| 2. | *WES* | *1076.7* | *33.2%* | *1776.4* | *42.1%* | *699.7* | *65.0* |
| 3. | *Small HPPs* | *812.1* | *25.0%* | *799.7* | *18.9%* | *-12.4* | *-1.5* |
| 4. | *BiogasInstallations* | *6.6* | *0.2%* | *3.04* | *0.1%* | *-3.6* | *-53.9* |

January-December 2021 there is an increase in the production of electricity by SES and BSU compared to the same period in 2020.

According to the System Operator, the volume of electricity supplied to the unified energy system of Kazakhstan (EU RK) from facilities using renewable energy sources amounted to 4,163.6 million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **20 2 1g** | | **Deviation 20 2 0/2021,** | |
| **January December** | **share in Kazakhstan, %** | **January December** | **share in Kazakhstan, %** | **million kWh** | **%** |
| **I** | **Total output in Kazakhstan** | **108,085.8** | **100%** | **114,447.9** | **100%** | **6362.1** | **5.9** |
| **II** | **Total RES in UES RK, incl. by zones** | **3072.3** | **2.8%** | **4163.6** | **3.6%** | **1091.3** | **35.5** |
| 1. | *Northern zone* | *1117.5* | *36.4%* | *1514.2* | *36.4%* | *396.7* | *35.5* |
| 2. | *Southern zone* | *1646.6* | *53.6%* | *2334.9* | *56.1%* | *688.3* | *41.8* |
| 3. | *Western zone* | *308.2* | *10.0%* | *314.5* | *7.6%* | *6.3* | *2.0* |

Electricity generation by renewable energy facilities of Samruk-Energo JSC (SPP, WPP, small hydropower plants) in January-December 2021 amounted to 325.3 million kWh or 7.7% of the volume of electricity generated by renewable energy facilities in the Republic of Kazakhstan, which is compared to the same the period of 2020 is lower by 2.1% (for January-December 2020, the generation of RES of the Company amounted to 332.3 million kWh, and the share of RES in the volume of RES in the Republic of Kazakhstan was 10.2%).

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Deviation 2020/2021,** | |
| **January December** | **share in Kazakhstan, %** | **January December** | **Share in Kazakhstan, %** | **million kWh** | **%** |
| **I** | Production of “clean” electricity by Samruk-Energy JSC (RES excluding Large HPPs), including: | **332.3** | **10.2%** | **325.3** | **7.7%** | **-7.0** | **-2.1** |
| **1** | *JSC AlES Cascade of small HPPs* | *165.6* | *5.1%* | *160.3* | *3.8%* | *-5.3* | *-3.2* |
| **2** | *Samruk-Green Energy LLP SPP 2 MW* | *3.8* | *0.1%* | *5.3* | *0.1%* | *1.5* | *39.5* |
| **3** | *Samruk-Green Energy LLP WPP Shelek 5 MW* | *3.5* | *0.1%* | *15.1* | *0.4%* | *11.6* | *331.4* |
| **4** | *First Wind Power Plant LLP WPP 45 MW* | *159.4* | *4.9%* | *144.6* | *3.4%* | *-14.8* | *-9.3* |

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

*(information of KOREM JSC for December is not provided)*

# **Export-import of electrical energy**

In order to balance the production and consumption of electricity in January-December 2021, exports to the Russian Federation amounted to 1,326.6 million kWh, imports from the Russian Federation 1,788.32 million kWh.

Including export of JSC " KEGOC " to the Russian Federation 1,267.7 million kWh, import of electricity for the reporting period in the amount of 1,506.41 million kWh.

million kWh

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **January-December 2020** | **January-December 2021** | **million kWh** | **%** |
| **Export of Kazakhstan** | **-2296.46** | **-2650.43** | **-353.97** | **15.4%** |
| **in Russia** | **-1117.48** | **-1326.60** | **-209.13** | **18.7%** |
| **in the IPS of Central Asia** | **-1178.98** | **-1323.83** | **-144.85** | **12.3%** |
| **Import of Kazakhstan** | **1555.44** | **2093.53** | **538.08** | **34.6%** |
| **From Russia** | **1240.60** | **1788.32** | **547.72** | **44.2%** |
| **from IPS Central Asia** | **314.85** | **305.21** | **-9.64** | **-3.1%** |
| **Balance flow "+" deficit, "-" excess** | **-741.01** | **-556.90** | **184.11** | **-24.8%** |

1. **Installed and available capacity of power plants in Kazakhstan**

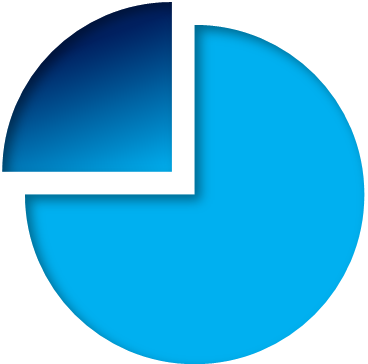
The installed capacity of the power plants of the Republic of Kazakhstan as of January 1, 2022 amounted to 23,959.3 MW, which is 412.3 MW more than as of January 1, 2021.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **power plants** | **Installed capacity** | | | **Available power** | | |
| **2021** | **2022** | **Δ, MW** | **2021** | **2022** | **Δ, MW** |
| **UPS of Kazakhstan** | | | | | | |
| **Total** | **23,547.1** | **23,959.3** | **412.3** | **20,039.1** | **20 200.5** | **161.4** |
| total TPP | 19,419.5 | 19458.2 | 38.7 | 17456.1 | 17454.4 | 1.7 |
| including steam turbine thermal power plants | 17,404.5 | 17,394.5 | 10 | 15 679 | 15,662.7 | 16.3 |
| GTES | 2015.0 | 2063.7 | 48.7 | 1,777.1 | 1,791.7 | 14.6 |
| SES | 885.3 | 1,034.3 | 149.0 | 641.6 | 834.3 | 192.7 |
| WES | 511.6 | 659.5 | 148.0 | 311.6 | 376.8 | 65.2 |
| hydroelectric power station | 2,729.6 | 2806.2 | 76.6 | 1628.7 | 1534 | 94.7 |
| BSU | 1.1 | 1.1 | - | 1.1 | 1.1 | - |
| **Northern zone of UPS of Kazakhstan** | | | | | | |
| **Total** | **15,892.7** | **16,079.1** | **186.3** | **14,079.6** | **14,174.5** | **94.8** |
| total TPP | 13,528.6 | 13,566.9 | 38.3 | 12650.6 | 12,653.8 | 3.2 |
| including steam turbine thermal power plants | 13,000.5 | 13,020.5 | 20 | 12,147.7 | 12,150.5 | 2.8 |
| GTES | 528.1 | 546.4 | 18.3 | 502.9 | 503.3 | 0.4 |
| hydroelectric power station | 1,774.6 | 1,811.7 | 37.1 | 1044.5 | 1020 | 24.5 |
| WES | 232.5 | 343.4 | 111 | 164.6 | 261.8 | 97.3 |
| BSU | 1.1 | 1.1 | - | 1.1 | 1.1 | - |
| SES | 356.0 | 356.0 | - | 218.9 | 237.8 | 18.9 |
| **Western zone of the UES of Kazakhstan** | | | | | | |
| **Total** | **3,533.1** | **3,563.5** | **30.4** | **2,728.1** | **2,728.0** | **0.1** |
| **total TPP** | 3414.7 | 3445.1 | 30.4 | 2677.0 | 2679.4 | 2.4 |
| **including steam turbine thermal power plants** | 1974.0 | 1974 | - | 1449.0 | 1432 | 17 |
| **GTES** | 1440.7 | 1471.1 | 30.4 | 1228.0 | 1247.4 | 19.4 |
| **SES** | 2 | 2 | - | 2 | 2 | - |
| **WES** | 116.4 | 116.4 | - | 49.1 | 46.6 | 2.5 |
| **Southern zone of UPS of Kazakhstan** | | | | | | |
| **Total** | **4,121.2** | **4316.7** | **195.5** | **3,231.4** | **3,298.1** | **66.6** |
| total TPP | 2476.2 | 2446.2 | thirty | 2,128.5 | 2121.2 | 7.3 |
| including steam turbine thermal power plants | 2430 | 2400 | thirty | 2082.3 | 2080.2 | 2.1 |
| GTES | 46.2 | 46.2 | - | 46.2 | 41.0 | 5.2 |
| SES | 527.3 | 676.3 | 149 | 420.7 | 594.5 | 173.8 |
| WES | 162.7 | 199.7 | 37 | 98 | 68.4 | 29.6 |
| hydroelectric power station | 955 | 994.5 | 39.5 | 584.2 | 514.0 | 70.2 |
| **Akmola region** | | | | | | |
| **Total** | **961** | **1089** | **128.0** | **869.0** | **1015.6** | **146.6** |
| including steam turbine thermal power plants | 682 | 802 | 120.0 | 638.1 | 741.8 | 103.7 |
| WES | 179 | 187.0 | 8.0 | 139 | 181.8 | 42.8 |
| SES | 100 | 100 | - | 91.9 | 92 | 0.1 |
| **Aktobe region** | | | | | | |
| **Total TPP** | **702.1** | **768.4** | **66.3** | **684.1** | **706.4** | **22.3** |
| including steam turbine thermal power plants | 315 | 315 | - | 320 | 318 | 2 |
| GTES | 339.1 | 357.4 | 18.3 | 340.1 | 340.4 | 0.3 |
| WES | 48 | 96 | 48 | 24 | 48 | 24 |
| **Alma-Ata's region** | | | | | | |
| **Total** | **1953.6** | **1980.4** | **26.8** | **1463.8** | **1462.6** | **1.2** |
| including steam turbine thermal power plants | 852 | 852 | - | 739 | 753 | 14 |
| hydroelectric power station | 804.8 | 830.6 | 25.8 | 485 | 468.8 | 16.2 |
| SES | 257.4 | 261.4 | 4 | 228.6 | 232.6 | 4 |
| WES | 39.5 | 36.5 | 3 | 11.3 | 8.3 | 3 |
| **Atyrau region** | | | | | | |
| **Total** | **1618.3** | **1618** | **0.3** | **1344.5** | **1328.5** | **16** |
| including steam turbine thermal power plants | 624 | 624 | - | 526 | 509 | **17** |
| GTES | 941.5 | 941.5 | - | 793.7 | 794.7 | **1** |
| WES | 52.8 | 52.8 | - | 24.8 | 24.8 | **-** |
| **East Kazakhstan region** | | | | | | |
| **Total** | **2346.5** | **2383.6** | **37.1** | **1515.5** | **1530.4** | **14.9** |
| including steam turbine thermal power plants | 542.5 | 542.5 | - | 461.6 | 501 | 39.4 |
| hydroelectric power station | 1 774 | 1,811.1 | 37.1 | 1,043.9 | 1,019.4 | 24.5 |
| SES | thirty | thirty | - | 10 | 10 | - |
| WES | - | 5 | 5 | - | 3 | 3 |
| **Jambyl Region** | | | | | | |
| **Total** | **1528.7** | **1,577.9** | **49.2** | **1353.2** | **1313.1** | **40.1** |
| including steam turbine thermal power plants | 1 290 | 1 290 | - | 1,172.8 | 1157.8 | 15 |
| SES | 100.5 | 100.5 | - | 83.6 | 83.6 | - |
| WES | 123.2 | 163.2 | 40 | 86.7 | 60.1 | 26.6 |
| hydroelectric power station | 15 | 24.2 | 9.2 | 10.1 | 11.6 | 1.5 |
| **West-Kazakhstan region** | | | | | | |
| **Total** | **390.3** | **390.3** | **-** | **368.4** | **374.4** | **6** |
| including steam turbine thermal power plants | 20 | 20 | - | 18.0 | 18.0 | - |
| GTES | 370.3 | 370.3 | - | 350.4 | 356.4 | 6 |
| **Karaganda region** | | | | | | |
| **Total** | **2979.7** | **2,879.7** | **100** | **2431.9** | **2378.8** | **53.1** |
| including steam turbine thermal power plants | 2563 | 2463 | 100 | 2150.4 | 2078.4 | 72 |
| GTES | 189 | 189 | - | 162.8 | 162.9 | 0.1 |
| hydroelectric power station | 0.6 | 0.6 | - | 0.6 | 0.6 | - |
| Biogas plant (BSU) | 1.1 | 1.1 | - | 1.1 | 1.1 | - |
| SES | 226 | 226 | - | 117 | 135.8 | 18.8 |
| **Kostanay region** | | | | | | |
| **Total** | **283** | **333** | **50** | **159.1** | **190.1** | **31** |
| **Kyzylorda Region** | | | | | | |
| **Total** | **210.4** | **220.4** | **10** | **121.3** | **152.1** | **30.8** |
| including steam turbine thermal power plants | 85.5 | 85.5 | - | 40 | 38.9 | 1.1 |
| GTES | 46.2 | 46.2 | - | 46.2 | 41.0 | 5.2 |
| SES | 78.7 | 88.7 | 10 | 35.1 | 72.2 | 37.1 |
| **Mangistau region** | | | | | | |
| **Total** | **1524.5** | **1554.9** | **30.4** | **1015.2** | **1,025.1** | **9.9** |
| including steam turbine thermal power plants | 1 330 | 1 330 | - | 905.0 | 905 | - |
| GTES | 128.9 | 159.3 | 30.4 | 83.9 | 96.3 | 12.4 |
| SES | 2 | 2 | - | 2 | 2 | - |
| WES | 63.6 | 63.6 | - | 24.3 | 21.8 | 2.5 |
| **Pavlodar region** | | | | | | |
| **Total steam turbine TPPs** | **8074** | **8074** | **-** | **7,877.5** | **7805.2** | 72.3 |
| **North-Kazakhstan region** | | | | | | |
| **Total** | **546.5** | **546.5** | **-** | **542.6** | **545.1** | **2.5** |
| including steam turbine thermal power plants | 541 | 541 | - | 541 | 541 | - |
| WES | 5.5 | 5.5 | - | 1.6 | 4.1 | 2.5 |
| **Turkestan region** | | | | | | |
| **Total** | **428.5** | **538** | **109.5** | **293.2** | **370.4** | **77.2** |
| TPP | 202.5 | 172.5 | thirty | 130.5 | 130.5 | - |
| hydroelectric power station | 135.3 | 139.8 | 4.5 | 89.2 | 33.7 | 55.5 |
| SES | 90.7 | 225.7 | 135 | 73.5 | 206.2 | 132.7 |

**Share of power plants of Samruk-Energy JSC**

**in the installed capacity of the Republic of Kazakhstan**

Total installed capacity of power plants of Samruk-Energy JSC as of 01.01.2022 amounted to 6,214.1 MW, which is 25.9% of the total installed capacity of power plants in Kazakhstan.



**25,9%**

**Samruk Energy JSC**

**6 214,1 MW**

**Kazakhstan**

**23 959,3 МW**

| **power plants**  **JSC "Samruk-Energy"** | **Installed capacity as of 01.01. 2022** | **Available power**  **01.01. 2022** |
| --- | --- | --- |
| **JSC "Samruk-Energy"** | **6214.1** | **5,753.4** |
| *JSC AlES* | 1235.7 | 904.7 |
| *LLP "Ekibastuz GRES-1"* | 3500 | 3 500 |
| *JSC "Ekibastuz GRES-2"* | 1000 | 971.3 |
| *JSC "Shardara HPP"* | 126 | 25 |
| *JSC "Moinak HPP"* | 300 | 300 |
| *Samruk-Green Energy LLP* | 7.4 | 7.4 |
| *LLP "First wind power plant"* | 45 | 45 |

# **SECTION II**

# **Status of formation of the Common Electricity Market of the Eurasian Economic Union**

The common electricity market of the Eurasian Economic Union is planned to be formed by integrating the national electricity markets of **Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.** The EAEU Member States are gradually forming a common electric power market of the Union on the basis of parallel operating electric power systems, taking into account the priority provision of electric energy to domestic consumers of the Member States.

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

May 29, 2019 as part of the celebration of the fifth anniversary of the signing of the Treaty on the Eurasian Economic Union The Supreme Council signed an international agreement on the formation of a common electric power market of the Union in the form of a Protocol on amendments to the Treaty on the Eurasian Economic Union dated May 29, 2014 (in terms of the formation of a common electric power market of the Eurasian Economic Union).

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

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

In 2021, three meetings of the Advisory Committee on the Electricity Industry under the EEC Board were held (14th meeting on January 21, 15th meeting on April 21, 16th meeting on October 6), two meetings of authorized representatives of the Member States (March 18 and July 30) , 23 meetings of the Subcommittee on the Formation of the ERA of the EAEU of the Advisory Committee on the Electric Power Industry under the EEC Board (56th meeting on January 14, 57th meeting on February 5, 58th meeting on February 25-26, 59th meeting on March 11-12, 60- th meeting 26 March, 61st meeting 9 April, 62nd meeting 16 April, 63rd meeting 13 May, 64th meeting 7 June, 65th meeting 24-25 June, 66th meeting 7 July, 67 th meeting 22-23 July, 68th meeting 12-18 August, 69th meeting 26-27 August, 70th meeting 9-10 September, 71st meeting 16-17 September, 72nd meeting 1 October , 73rd meeting 15 October, 74th meeting 25-26 October, 75th meeting 17-18 November, 76th meeting 25-26 November, 77th meeting 14 December, 78th meeting 21 December) and one workshop on July 1, 2021

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

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

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

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

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

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

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

**TAJIKISTAN**

**The World Bank Board of Executive Directors has approved additional funding in the form of a $65 million grant to finance the second phase of the Nurek HPP rehabilitation project.**

The first phase of the Nurek HPP rehabilitation project, financed by the World Bank ($225.7 million), the Asian Infrastructure Investment Bank (AIIB) ($60 million) and the Eurasian Development Bank (EDB) ($40 million), was launched in March 2019.

As part of its implementation, support is being provided to rehabilitate three of the nine hydroelectric units and key infrastructure components of the power plant, replace six autotransformers that are used to transmit generated electricity, improve the safety of the dam to protect the facility from seismic hazards and floods, as well as technical assistance to strengthen the operational, technical and financial potential for the management of the energy company OAHK "Barki Tojik".

According to the source, the second phase of the project, financed by the World Bank ($50 million, approved in June 2020), supports the rehabilitation of the remaining six hydro units, the Nurek bridge, the power plant and other key structures, along with building the capacity of hydroelectric power plants to operate efficiently. and maintenance of the power plant.

The $65 million additional funding approved the day before is intended to cover a $164 million funding gap in the second phase of the project.

It is expected that the remaining shortfall will be covered by other potential sources of co-financing, including the reallocation of savings from the EDB and AIIB allocated to support the first phase of the project. The total investment of the World Bank for this strategically important project is $341 million.

Nurek HPP provides about 50% of the total annual energy demand in Tajikistan and supplies most of the energy for export. Due to technical problems, the plant's original installed capacity has dropped from 3,000 megawatts to 2,320 megawatts over the past four decades. The facility is currently undergoing its first major renovation since its commissioning   
in 1972-1979.

Once rehabilitated, the hydropower plant's capacity will increase to 3,214 megawatts, providing improved electricity supply during the cold winter months and generating much-needed revenue from expanded electricity exports during the summer months.

As part of the rehabilitation of the HPP, measures will also be taken to improve the safety of the dam, which will help reduce operating and maintenance costs. Finally, the project will generate global environmental and climate benefits in terms of net CO2 emission reductions, resulting in a net emission reduction of 69 Mt CO2 from baseline over the lifetime of the facility.

**AZERBAIJAN**

# **Azerbaijan plans to expand power transmission lines in the direction of Russia - Azerenerji OJSC**

"Azerbaijan is fully self-sufficient in electricity and also exports it. There are only a few companies in our country that are engaged in energy generation. Over the past five years, a number of technical indicators for energy generation companies have been reduced to increase energy production. New modern equipment has been purchased. Electricity transmission lines have been laid to the settlements of Georgia, Russia, Iran, and it is planned to expand these lines in the Russian direction.We plan to expand the export of electricity to a number of other neighboring countries.

# **Azerbaijan to attract $500 mln foreign investment in renewable energy sector**

In the coming months, within the framework of various projects, Azerbaijan will attract foreign investment in the amount of $500 million in the renewable energy sector.

Azerbaijani Energy Minister Parviz Shahbazov said this during the CAREC Energy Investment Forum.

The total capacity of projects in the field of solar and wind energy will be 470 MW. In addition, the Energy Efficiency Improvement Fund will be established in Azerbaijan in the near future.

**THE REPUBLIC OF KAZAKHSTAN**

# **Kazakhstan and the EU considered the implementation of the Enhanced Partnership Agreement.** On November 26, President of Kazakhstan Kassym-Zhomart Tokayev discussed with the President of the European Council Charles Michel the current situation and prospects for strategic cooperation between Kazakhstan and the EU in terms of the qualitative implementation of the Enhanced Partnership and Cooperation Agreement as part of an official visit to Belgium. This was reported in the press service of the President of the Republic of Kazakhstan. Kassym-Zhomart Tokayev emphasized that over three decades Kazakhstan and the European Union have built strong relations based on trust, mutual respect and joint priorities.

Politicians agreed on the importance of the full implementation of the Agreement, which established the legal format for joint work in 29 areas. In this context, the process of implementation of the new EU and Central Asia Strategy, as well as the active nature of the dialogue between the EU and Central Asia, were positively noted.   
The head of Kazakhstan, along with other topical issues, also touched upon the situation with water resources in the Central Asian region, in particular, he stated the necessary expediency of creating an International Water and Energy Consortium. The functionality of this organization should be aimed at balancing the strategic interests of the states of the region in hydropower, water use and ecology. In this vein, the President called on European partners to support the implementation of the Kazakh initiative.

**KYRGYZSTAN**

**JSC "NESK" reported on the progress of construction of CASA-1000 in Kyrgyzstan.**

As part of the implementation of the CASA-1000 project in Kyrgyzstan, the construction of a 500 kV transmission line is underway. In total, 455 kilometers of transmission lines will be laid in Kyrgyzstan from a 500 kV cell, which will be built specifically for this transmission line at the 500 kV Datka substation, from there the line will stretch through Jalal-Abad, Osh and Batken regions to the border with Tajikistan .

To date, the following construction work has been completed: Construction of access roads to the construction sites of supports was completed for 727 supports, digging pits for supports - 632, reinforcement and pouring of concrete - 563, installation of supports - 389. A total of 1241 supports will be built under the project.

Currently, active work is being carried out in Batken, Osh and Jalal-Abad regions. The work involves 59 units of special equipment and special vehicles, 76 units of vehicles and 300 workers, of which almost 65% are local residents.

To mobilize specialists for the construction of infrastructure facilities in these three regions, 6 construction bases have been created.

*Information from JSC "NESK":*

**UZBEKISTAN**

# **In Uzbekistan, projects in the field of hydropower were considered.**

The energy industry is actively developing in Uzbekistan. In addition to power plants operating on the basis of traditional raw materials such as oil and gas, facilities are also being built that generate electricity from renewable sources - the sun, wind and water.

In particular, in 2017, the joint-stock company Uzbekhydroenergo was established by decree of the President. Over the past period, 11 new hydroelectric power stations have been built and 8 have been modernized. As a result, additional power generating capacities of 244 megawatts have been created.

However, the country's hydropower potential is only half used. In this regard, 21 major projects have been developed for the construction of power plants with a total capacity of 740 megawatts. In particular, next year it is planned to implement 7 projects with a total capacity of 170 megawatts, in 2023-2024 - 12 projects with a capacity of 150 megawatts, in 2025-2026 - 2 projects with a capacity of 420 megawatts.

During the presentation, instructions were given on high-quality construction and ensuring the sustainable functioning of these structures.

The head of state paid special attention to the construction of small hydroelectric power plants that do not require the construction of dams, emphasizing the need to involve the private sector in this area.

To date, a list of 22 promising sites has been compiled, on which, on the basis of a tender, it is planned to build a mini hydroelectric power station with a capacity of up to 5 megawatts.

It also indicated the possibility of installing compact hydropower plants with a capacity of up to 500 kilowatts to supply electricity to villages located along rivers and canals, such as Naryn, Sokh, Tankhoz, Akbulak, Ugam. The list of such sites will be announced to the population and entrepreneurs. It was determined that the benefits and subsidies due to individuals and entrepreneurs for the installation of wind farms will also apply to small hydropower plants.

The issue of training qualified specialists for the operation of hydraulic structures was also touched upon. It was noted that higher educational institutions in the field of engineering, irrigation and architecture need to intensify work in this direction, create educational laboratories in construction and hydraulics.

**REPUBLIC OF BELARUS**

# **Results Press conference with participation of the Minister of Energy of the Republic of Belarus.**

# The press conference was attended by Minister of Energy of the Republic of Belarus Viktor Karankevich, Director General of State Production Association "Belenergo" Pavel Drozd, Director General of State Production Association "Beltopgaz" Alexei Kushnarenko, Director General of Gosenergogaznadzor Alexander Ozerets.

As the Minister noted, this year was a jubilee for power engineers and was held under the auspices of the 90th anniversary of the energy system. The power engineers approached this significant date with significant results and achievements, the main of which was the commissioning of the first power unit of the Belarusian nuclear power plant.

The station generates about 28 million kWh of electricity every day, which is 22% of its total production in the country. Since the first power unit was included in the unified energy system, 5.7 billion kWh of electricity has been generated, which made it possible to replace 1.6 billion m 3 of natural gas. This is 2.5 times more than the annual volume of electricity consumption by the country's petrochemical complex.

The readiness of the second power unit is 95%. Currently, work is being carried out on it to fulfill the necessary conditions for obtaining permission from Gosatomnadzor to load nuclear fuel into the reactor core. It is planned that these works will be completed in the coming days.

A lot of work has been done to integrate the BelNPP into the country's energy system. This is the construction of new and modernization of existing high-voltage power lines and backbone substations. This made it possible to ensure the supply of electricity from nuclear power plants to all regions of the country. In addition, the construction of electric boilers with a total capacity of more than 916 MW was completed at 20 power facilities. Since this year, these facilities have been actively used for heating large settlements.

Projects for the construction of peak-reserve sources are at the final stage. In 2022, they will be put into operation at four large stations of the Belenergo State Production Association. Their total capacity will be 800 MW. Peak-reserve sources will ensure the reliability of the functioning of the power system, taking into account the various modes of operation of the nuclear power plant.

The Council of Ministers identified the potential for growth in electricity consumption by the real sector of the economy and approved an intersectoral set of measures to increase electricity consumption until 2025, including through the implementation of investment projects in various sectors of the economy. Its implementation will ensure an increase in electricity consumption at the level of 2.7 billion kWh per year by 2026. This will be achieved both through the modernization of existing production facilities and through the creation of new ones.

The electrification of the country's housing stock will continue. The Ministry of Energy approved the Program for Increasing Electricity Consumption for Heating, Hot Water Supply and Food Preparation for 2021–2025. The document includes three main areas. The first is the construction of new electrified housing, where electricity will be used for heating and hot water supply. The second direction is the transfer of multi-apartment housing stock from the use of solid fuel to electricity. The third direction is the transfer of the existing individual housing stock to the use of electricity for heating and hot water supply. Along with gasification, these works will cover a larger number of settlements to create more comfortable living conditions for our citizens. At the level of the Head of State, incentive tariffs for the population were approved, Decree No. 127 of April 14, 2020 determined a mechanism for reimbursement of part of the costs of citizens for the electricity supply of the operated housing stock. This gave a serious impetus to the use of electricity for heating and hot water. As a result, the volume of electricity consumption by the population for heating and hot water supply in Belarus for 11 months of this year increased by 3.3 times compared to the same period last year - from 69 to 225 million kWh.

Starting January 1, 2027, a transition to deeper integration in the electric power sector is envisaged, which involves the convergence of business conditions for market participants.

The question of the implementation of a new Union program in the field of nuclear energy was also raised. As Viktor Karankevich said, cooperation with Russia will develop within the framework of the further operation of the BelNPP and the extension of its service life. This implies partnership in a wide range of areas: scientific support of the project, introduction of new repair technologies, maintenance of security systems, involvement of Russian institutions in the development of legal documents. A new area of cooperation will be the management of radioactive waste and spent nuclear fuel. The first practical steps have already been taken to implement this task - an intergovernmental agreement has been signed between the countries on the transportation of nuclear materials.

Together with Russian colleagues, an intergovernmental agreement on the management of spent nuclear fuel from the Belarusian NPP is being developed. The document is planned to be prepared for signing by July 1, 2022.

**RUSSIAN FEDERATION**

**The World Bank proposes that Russia introduce a carbon tax on industries with high greenhouse emissions, including the fuel and energy complex, to achieve carbon neutrality, the organization says in a report on the Russian economy.**

“The introduction of carbon prices is primarily advisable in the fuel and energy complex, transport and industrial production. First of all, the introduction of carbon prices in the fuel and energy complex, in transport and for large industrial enterprises should be considered. If carbon prices cover carbon emissions in these sectors, then this will cover 79% of all emissions in Russia,” the report says.

It is explained that the price of carbon can be set in the form of a tax, a system of paid permits, or both.

As an alternative, the WB proposes the use of a trading system for greenhouse gas emissions. It operates on a cap-and-trade principle: the authority sets an aggregate emission limit for a number of polluting facilities, which is then divided into quotas and distributed among the facilities. If the level of production emissions is higher than the quota level, then he must buy a permit for additional emissions. At the first stage, permits are often allocated free of charge, but ultimately the organizers of such systems tend to distribute all quotas through auctions.

“Another way to price carbon is to levy emissions-linked fuel excises and carbon taxes. Compared to other countries in the world, fuel excises in Russia are very low,” the report added.

In November, the Cabinet of Ministers adopted a long-term strategy for low-carbon development of the Russian Federation until 2050. Its goal is to adapt the Russian economy to the global energy transition, reduce greenhouse gas emissions and achieve carbon neutrality by 2060. So far, key policy measures and specific investment projects to achieve these goals have not been identified.

# **On November 30, 2021, the annual International Forum "Electric Networks" was held in the format of an online conference in Moscow**

In full face-to-face format, the Electric Networks International Forum will be held in March 2022 at VDNKh, including an expanded business program, the Digital Breakthrough competition and exhibition space.

The meeting of professionals of the power grid complex from different countries of the world at the Forum site is of great importance for the development of the power industry.

The planned business program of IFES 2021 consisted of the following plenary sessions:

• Changing the model of relationships between suppliers and consumers in modern conditions, the transition to remote services.

• Russian power industry – how to attract investments in the era of decarbonization?

• Personnel for "industry 4.0" - new competencies and forms of employment.

• Intelligent electricity metering systems. prospects for the development of the Russian component base.

• Microgeneration within networks - how to protect yourself or use it to your advantage.

• Birds are the cause of power line failures.

The main topic of the meeting was energy, which is in the process of global transformation. During the discussion, disputes about the role of hydrocarbons in the energy balance of the future did not subside, but the majority of the meeting participants agreed that it was low-carbon sources that would play the predominant role: renewable energy, the atom, hydrogen energy. A trend has been outlined for the electrification of industrial production, transport, and at the same time a task has been set to improve the quality of life of people, eliminate "energy poverty" while maintaining the level of reliability of energy supply. The task of increasing energy efficiency has become the basis for the low-carbon development of the economies of various countries of the world. The global transformation of the energy sector is accompanied by the processes of digitalization, the introduction of energy storage devices, and decentralization.

However, during the meeting, it was noted that the processes of energy transformation are not homogeneous and have their own characteristics in different countries of the world, while the global course forms new requirements for the energy of "tomorrow", including the power grid complex of countries.

**The Russian Ministry of Energy has formed a working group that has already begun updating the current Energy Strategy and expanding its scope until 2060, said Alexei Kulapin, head of the Russian Energy Agency (REA) under the Ministry of Energy of the Russian Federation.**

“To date, the Ministry of Energy has already organized work in this area, a corresponding working group has been formed, which is developing a draft amendment to the current version of the Energy Strategy,” said Kulapin, speaking at the SPIMEX Exchange Commodity Market forum. The current version of the document is valid until 2035.

The prerequisites for adjusting the Energy Strategy were created by Russia's low-carbon development strategy until 2050, Kulapin explained. It, in turn, was created to solve the problem set by Russian President Vladimir Putin to achieve carbon neutrality by 2060.

In September, Deputy Energy Minister Pavel Sorokin said that the Russian Ministry of Energy was working on an Energy Strategy until 2040, including taking into account negative scenarios for the development of the oil and gas industry. Later, in October, Energy Minister Nikolai Shulginov said that the horizon would be extended to 2060.

# **The State Duma of the Russian Federation approved in the first reading a bill simplifying the interaction of subjects of the electric power industry**

The State Duma of the Russian Federation in the first reading approved a bill on amendments to the Federal Law "On the Electric Power Industry", which simplifies the interaction of subjects in terms of the technological functioning of the electric power industry.   
The bill provides for the exclusion of non-functioning regulatory mechanisms in the electric power industry, said Anastasia Bondarenko. This will simplify the procedure for concluding an agreement with grid organizations for companies and consumers who are not payers for Unified Dispatch Control (UTC) services,” the Deputy Minister explained. and 29 of the Federal Law "On the electric power industry".   
“The amendments proposed by the draft law will make it possible to comprehensively regulate the technologically interrelated issues of reliability, safety in the electric power industry and the quality of electric energy within the framework of a single system of regulations. The changes envisaged by the draft law correspond to the principles of implementing the “regulatory guillotine” mechanism and take into account the modern system of regulatory regulation being formed in the industry,” said Anastasia Bondarenko. a procedure for coordinating technical solutions and measures aimed at ensuring the reliable functioning of the energy system will be provided, as well as the rule on establishing a legal penalty for late payment for services for operational dispatch control," she added. The project is aimed at clarifying the conceptual apparatus, improving the procedure for interaction between energy companies and consumers of energy, as well as the unification of certain provisions of the Federal Law based on the results of established practice, said Anastasia Bondarenko, presenting the bill in the State Duma.

“In terms of the conceptual apparatus, the definitions of such terms as “operational and technological management”, “operational and dispatching management in the electric power industry”, “installed generating capacity”, “installed generating capacity” will be clarified. In addition, it is planned to introduce the definition of "available generating capacity" and eliminate the outdated concept of "rolling off" and the unused concept of "maximum available generating capacity," explained the Secretary of State - Deputy Minister of Energy of the Russian Federation.