

# ENERGY

## Ensuring energy security



SAMRUK-ENERGY JSC WAS ESTABLISHED IN 2007 WITH THE PRIMARY OBJECTIVE OF IMPLEMENTING STRATEGIC STATE TASKS FOR MODERNIZING CURRENT GENERATION FACILITIES AND DEVELOPING NEW PRODUCTION CAPACITIES IN THE ENERGY SECTOR.

### KEY PERFORMANCE RESULTS FOR 2023

Indicator	2022	2023
<b>Production indicators:</b>		
Electricity generation volumes, million kWh	35,884	35,330
Capacity sales volumes, MW	4,013	3,138
Heat energy sales volumes, million Gcal	5.50	5.78
Electricity transmission volumes, million kWh	8,154	8,686
Coal sales, million tons	42.4	42.5
<b>Financial indicators, KZT billion:</b>		
Revenue	381.5	444.96
Dividends	2	2
Net profit	30.1	43.08
Operating income	64.6	92.8
Net debt	231.3	228
Taxes paid	54.6	54.1
<b>Sustainability indicators:</b>		
CO <sub>2</sub> emissions into the atmosphere (excluding fuel gas compressor)	31,978	31,877
Volume of disposed waste	0	1,342
Accidents	10	10
Fatal accidents	4	2

Installed capacity

# 6,275

MW



**POWER GENERATION**

In 2023, the total electricity generation by the Samruk-Energy JSC group of companies reached 35,330 million kWh, distributed among the facilities as follows: Ekibastuz SDPP-1 generated 22,870 million kWh, Ekibastuz SDPP-2 – 5,659 million kWh, Almaty Power Plants – 5,055 million kWh, Moinak HPP – 832 million kWh, and Shardara HPP – 530 million kWh. During this period, Samruk-Energy JSC produced 31.3% of the total electricity generated in the Republic of Kazakhstan.



**MODERNISATION AND RECONSTRUCTION OF POWER GENERATING FACILITIES**

As part of the project to convert Almaty CHPP-2 to gas, following the completion of an international two-stage tender under the auspices of the European Bank for Reconstruction and Development, an EPC contract was signed on May 31, 2023, with a consortium that includes Dongfang Electric International Corp., Power China Sepco1 Electric Power Construction Co. Ltd., and Power China Hebei Electric Power Engineering Co. Ltd. On October 27, 2023, the EPC contractor signed a deal with Siemens Energy to supply three gas turbine units. Subsequently, on November 30, 2023, an agreement was reached with Dongfang Electric Group Dongwan Steam Turbine Co., Ltd. to supply a steam turbine and generator. On De-

cember 20, 2023, the EPC contractor finalized an agreement with Dongfang Electric Group Boiler Co., Ltd. for the supply of four water boilers, three steam boilers, and three heat recovery steam generators.

For the conversion of Almaty CHPP-3 to gas, the EPC contract was signed on September 12, 2023, with a consortium including KBI Energy Group LLP, Energo Spets Stroy LLP, StandardEnergо KZ LLP and STROYINDUSTRIA LLP. On November 9, 2023, the EPC contractor signed a reservation agreement with Ansaldo Energia for the manufacture and supply of gas turbine units.

For the restoration of power unit No. 1 at Ekibastuz SDPP-1 with the installation of new electrostatic precipitators, the physical volume of construction and installation works is estimated at 99.16%. On December 22, 2023, a test run of the power unit was conducted, including its connection to the grid.

In the framework of the project for the expansion and reconstruction of Ekibastuz SDPP-2 with the installation of units No. 3 and No. 4, by the end of 2023, 76% of the equipment had been delivered to the station. Efforts are being made to secure financing.

**CONTRIBUTION TO THE DEVELOPMENT OF RENEWABLE ENERGY**

In 2023, the electricity production from RES at the facilities of Samruk-Energy JSC group companies (solar power stations, wind power stations, and small hydropower plants) increased by 32.8%, totaling 554.4 million kWh. This figure accounts for 8.1% of the total RES-generated electricity in Kazakhstan.

Together with foreign investors, such as Total Eren, ACWA Power, Masdar, China Power International Holding Ltd, and Power China, projects were launched to construct solar and wind

power stations with a combined capacity of up to approximately 6 GW. Documents establishing the main terms of cooperation have been signed, including a joint venture agreement with Total Eren and joint development agreements with ACWA Power, Masdar, and China Power International Holding Ltd. Additionally, principal terms for solar power station construction projects between Samruk-Energy JSC and Unigreen Energy have been developed, as well as a shareholders' agreement between Qazaq Green Power PLC and Tumar Commerce LLP (a subsidiary of Uni-

green Energy). Intergovernmental agreements have also been concluded between the Republic of Kazakhstan and France, as well as between the Republic of Kazakhstan and the UAE, in the context of wind power station construction projects with Total Eren and Masdar.

Moreover, efforts are ongoing to develop the TEJ for the construction of the counter regulating Kerbulak HPP on the Ili River and the preliminary TEJ for the construction of the Semipalatinsk HPP.

**BOGATYR KOMIR**

BOGATYR KOMIR LLP IS A LEADING COAL MINING COMPANY SPECIALIZING IN OPEN-PIT COAL EXTRACTION. THE COMPANY'S TOTAL INDUSTRIAL RESERVES AMOUNT TO ABOUT 3 BILLION TONS OF COAL.

In 2023, the cyclic-flow technology was implemented at the Bogatyr mine. As a result, the production capacity of Bogatyr Komir LLP increased to 50 million tons.

Bogatyr Komir LLP accounts for 66% of the coal mined in the Ekibastuz basin and 38% of the total coal production in Kazakhstan.

The Company is a reliable energy partner for major thermal power plants in Kazakhstan and Russia, including the Reftinskaya SDPP, and provides employment for more than 6.3 thousand people.

The production capacity of Bogatyr Komir LLP increased to

**50**

million tons

**CONSTRUCTION OF NEW PROJECTS**

In 2023, the construction of the 110/10 kV "Kokozek" substation was completed, with connection to the 110 kV open switchgear at the 220 kV "Kaskelen" substation in the Karasai district of the Almaty region. The project is aimed at covering the deficit of free capacities needed to ensure reliable electricity supply and prospective development of the social infrastructure in the Karasai, Zhambyl, and Ili districts of the Almaty region, as well as the implementation of investment projects in the existing Industrial Zone.

There are plans to construct a maneuverable power station based on clean coal technologies (SDPP-3). Efforts are being made to develop a preliminary TEJ and to attract investors in collaboration with companies from China, Russia, Turkey, and India.

**PLANS FOR 2024**

In 2024, the Company will continue implementing projects aimed at improving the reliability of energy supply for the industrial and residential sectors of the country, supporting low-carbon development strategies, supporting, developing, and integrating RES, enhancing the export potential, energy security, and energy independence of Kazakhstan.







Kazakhstan Electricity Grid Operating Company JSC (hereinafter – KEGOC JSC) is a key organization that manages the National Power Grid of Kazakhstan and holds the status of the system operator of the Unified Power System of the country's Unified Energy System, playing a central role in managing and regulating national electricity supply.

Transmitted electricity

**38.2**

billion kWh

**FACTORS AFFECTING ACTIVITIES**

In 2023, KEGOC JSC, as the system operator, completed several significant projects, including the reinforcement of the electrical networks in the Western energy hub, a secondary public offering (SPO), market reform, and the introduction of a new service for the use of the National Electric Grid. Additionally, the project to strengthen the Southern zone of Kazakhstan's Unified Power System was initiated.

During this period, KEGOC JSC continued to ensure the quality operation of Kazakhstan's Unified Electric Power System and reliable electricity supply to the country's consumers. Electricity consumption in the country in 2023 amounted to 115.1 billion kWh, which is 1.9% more than in 2022. This increase contributed to the Company achieving a net profit of KZT 42.7 billion, which is KZT 15.9 billion or 60% higher than in 2022.

1.	2.	3.
ABOUT THE FUND	CONSOLIDATED FINANCIAL INDICATORS	<b>FUND PERFORMANCE</b>

**KEY PERFORMANCE RESULTS FOR 2023**

Indicator	2022	2023
<b>Production indicators:</b>		
Electricity transmission volumes, billion kWh	58.5	38.2
Volumes of NEG utilisation services, billion kWh	-	36.0
Volumes of technical dispatching services, billion kWh	104.26	106.28
Volumes of balancing services, billion kWh	203.12	205.41
<b>Financial indicators<sup>14</sup>, KZT billion:</b>		
Revenue	217.3	252.14
Dividends	30.2	33.3
Net profit	26.7	43.4
Costs	166.4	181.4
Operating income	40.9	56.6
Net debt	69.5	83.7
Taxes paid	36	40.5
<b>Sustainability indicators:</b>		
CO <sub>2</sub> emissions into the atmosphere, thousand tons	0.01	0.001
Volume of disposed waste, million tons	2.6	3.4
Number of people injured in accidents <sup>15</sup>	3	1
Fatal accidents	1	0

Furthermore, due to amendments made in 2023 to the Law of the Republic of Kazakhstan "On Electric Power Engineering" regarding the introduction of the single buyer model and the launch of the balancing electricity market on July 1, 2023, KEGOC introduced a new service related to the use of the national electric grid. This service, related to the transmission of electric energy according to the legislation of the Republic of Kazakhstan on natural monopolies, is provided by KEGOC to wholesale market participants for purchasing electricity from the single buyer and for carrying out transactions of buying and selling balancing electricity and negative imbalances with the balancing market settlement center. As of July 1, 2023, KEGOC provides the following main types of system services: transmission of electric energy via the National Electric Grid, use of the national electric grid, technical dispatching of grid feed and electricity consumption, and organization of the balancing of electricity production and consumption.

In 2023, significant efforts were made to improve the welfare of the Company's employees, with a focus on supporting production personnel. A Preferential Lending Program was implemented by KEGOC, aimed at the social support of employees to retain and attract highly qualified personnel needed by the Company. As a result, 51 employees purchased housing during the year. Additionally, the Company assisted in resolving housing issues for 129 employees by partially reimbursing housing expenses totaling KZT 155.1 million. Consequently, in 2023, the total funds allocated for the social support of the Company's employees amounted to KZT 810 million.

<sup>14</sup> Financial indicators for 2022 are as per the Company's 2022 Consolidated Financial Statements.  
<sup>15</sup> Fixing from the date of accident occurrence.

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SUSTAINABLE DEVELOPMENT	CORPORATE GOVERNANCE	ANNEXES	CONTACT INFORMATION



**INVESTMENT ACTIVITY**

To ensure the reliability of electricity supply to consumers and the sustainable development of Kazakhstan's UES, KEGOC JSC continued implementing several investment projects aimed at developing the National Electric Grid.

In November 2023, the Company successfully completed a project to strengthen the electrical network of the Western Zone of Kazakhstan's UES, as a result of which the transmission capacity of the lines on the "West Kazakhstan Energy Hub – Atyrau – Mangystau" route more than doubled. Thanks to the timely measures taken, the reliability of energy supply in the region significantly increased, and a foundation was laid for further integration of the Western Zone with UES of Kazakhstan.

The modernization of 220-500 kV lines has been completed in three of KEGOC's nine branches. The reconstruction continues and will cover transmission lines in all the Com-

pany's production branches. Over the next eight years, transmission lines that have been in operation for extended periods will be updated, and their operational lifespans will be extended for at least another 30 years.

Additionally, the Company has begun the "Strengthening the Electrical Network of the Southern Zone of Kazakhstan's UES" project. This project is aimed at improving the reliability of electricity supply to consumers in the southern energy zone by strengthening the 500 kV electrical networks in the Zhambyl and Turkestan regions, including the construction of the 500 kV Shu-Zhambyl-Shymkent overhead line with the corresponding expansion of 3 electrical substations.

All the Company's projects are implemented using its own and borrowed funds, without budget financing.

**DIVIDENDS AND PAYMENTS**

KEGOC JSC paid dividends of KZT 30.2 billion for the year 2022, and for the first half of 2023, the dividends amounted to KZT 20.2 billion. The sum of dividends paid in the second half of 2023 was KZT 21.9 billion.

SPO LAUNCH

One of the major events for the Company in terms of enhancing shareholder value was the secondary public offering (SPO) of shares, which raised more than KZT 34.8 billion, exceeding the proposed volume by 1.5 times. The funds raised through the SPO will be used to implement KEGOC's major investment project aimed at strengthening the networks of the Southern Zone of Kazakhstan's UES.

In 2023, KEGOC JSC successfully carried out the second issuance of KEGOC "green" bonds on the KASE trading platform, totaling KZT 16.9 billion. The cumulative volume of "green" bond issuances since December 2022 amounted to KZT 33 billion. The funds raised are directed towards financing the Company's investment projects, "Reconstruction of 220-500 kV Lines at KEGOC Branches" and "Strengthening the Electrical Network of the Western Zone of the UES of Kazakhstan. Construction of Electric Power Facilities."

On June 7, 2023, during the "Astana Finance Days" conference, the "Green Finance Awards 2023" ceremony took place, where KEGOC JSC was awarded the "Largest Non-Financial Corporate Green Bond" for the largest issue of "green" bonds in 2022.

OCCUPATIONAL HEALTH AND SAFETY

KEGOC JSC HAS ESTABLISHED AN EFFECTIVE OCCUPATIONAL SAFETY SYSTEM, WHICH REPRESENTS A COMPREHENSIVE APPROACH TO ENSURING SAFE WORK IN PRODUCTION FROM THE IMPLEMENTATION AND CONTROL OF NECESSARY SAFETY STANDARDS AND REGULATIONS TO THE COMMITMENT OF LEADERS IN THE FIELD OF HEALTH & SAFETY.

ESG PRINCIPLES

KEGOC recognizes the importance of its impact on the economy, environment and society and seeks to grow long-term value by ensuring that its operations are aligned with the principles of sustainable development by aligning its environmental (E), social (S) and governance (G) objectives.

The Company is methodically working to improve ESG principles, including corporate governance with a focus on ensuring environmental and social responsibility. This involves the effective implementation of shareholders' rights, fair treatment of shareholders, a balanced dividend policy, the efficiency of the Board of Directors and the Management Board of KEGOC, as well as a system for interacting with stakeholders and proper disclosure of company information.

Due to the Company's efforts to integrate ESG factors into its strategy and business processes, as well as its commitment to the principles of corporate governance, social responsibility and business ethics, and the quality of its disclosures, KEGOC was awarded an S&P Global CSA Score 2023 ESG rating of 51/100 on 25 August 2023. This score confirms the Company's commitment to environmental, social and governance sustainability and reflects its contribution to creating a more sustainable future.

KEGOC JSC is a participant in the "Vision Zero" movement, whose principles include "zero tolerance" for safety violations, continuous improvement of personal safety systems, and the implementation of the best global practices in occupational safety.

Thanks to a systematic approach, KEGOC JSC has reduced the Lost Time Injury Frequency Rate (LTIFR) by three times during the reporting period, and the Fatality Accident Rate (FAR) has been reduced to zero.

KEGOC JSC was ranked first among the portfolio companies of Samruk-Kazyna JSC for achievements in production safety for the year 2023.

NEW TECHNOLOGIES

As part of the measures to create an intelligent energy system, Smart Grid, the Company is systematically implementing modern intelligent digital technologies. Within the strategic goal of "Ensuring reliable operation of Kazakhstan's UES in the context of energy transition", the Company continues to implement projects to modernize the SCADA/EMS system and expand the WAMS system, which will enhance the efficiency of managing Kazakhstan's UES. Additionally, in the reporting year, within the framework of automating and digitizing business processes, robotic systems and BI were successfully implemented, and an automated human capital management (HCM) portal was launched.

Furthermore, in 2023, KEGOC JSC implemented advanced technologies for the security of electrical networks by introducing a centralized system of emergency automation. This system ensures the reliability of the national grid in real-time and minimizes disconnections of consumers in the event of disruptions in the operation of the electrical networks.

PLANS FOR 2024

KEGOC JSC's plans include the implementation of its investment portfolio for the development of the National Electric Grid, which includes the integration of the Western Power System with the UES of Kazakhstan, construction of a direct current line from North to South, construction of the 500 kV line from "City step-down substation (TsGPP) — Karaganda — Nura", and continuation of two more phases of the Company's power network reconstruction covering all regions of presence.

KEGOC JSC will continue its active efforts to create conditions for the development of generating capacities, including traditional and maneuverable generation. The Company will also actively participate in the development and discussion of a new electric power market model, and in the preparation of legal acts related to the integration of wholesale market participants into Kazakhstan's National Electric System.

Low-carbon Energy Sources



KAZAKHSTAN NUCLEAR POWER PLANTS LLP (HEREINAFTER — KNPP LLP) WAS ESTABLISHED TO PREPARE THE GROUNDWORK AND DETAILED PLANS FOR THE CONSTRUCTION OF NUCLEAR POWER PLANTS (HEREINAFTER — NPPS) IN KAZAKHSTAN, INCLUDING THE DEVELOPMENT OF TEJ AND THE COMPLETE PACKAGE OF PROJECT DOCUMENTATION, AS WELL AS TO COORDINATE THE NPP CONSTRUCTION PROCESS.

CURRENT STATUS OF IMPLEMENTATION OF THE NPP CONSTRUCTION PROJECT WITH CAPACITY UP TO 2.8 GW

In 2023, public hearings were held in the village of Ulken in the Zhambyl district of the Almaty region, dedicated to the construction of a nuclear power plant near the village. Residents expressed support for the construction of the NPP in the Republic of Kazakhstan. The Ministry of Energy of the Republic of Kazakhstan approved the Technical Assignment for the development of the TEJ for the "Construction of the Ulken Nuclear Power Plant" in the Almaty region.

INFORMATION AND EXPLANATORY WORK

In 2023, the Kazakhstani media actively covered the topic of nuclear energy, releasing 1,061 pieces, including 108 television segments, 2 radio broadcasts, and 951 online publications. On social networks, including the official pages of KNPP LLP on Instagram, Facebook, and YouTube, 1,355 posts were made.

KNPP LLP conducted a comprehensive sociological study to gauge the opinion of the Kazakhstani population regarding the use of nuclear energy and specific initiatives related to the construction of NPPs.

The survey conducted in 2023 recorded a positive shift in public perception and a higher level of public acceptance of nuclear energy compared to the previous year: 57.2% of respondents supported the development of nuclear energy (compared to 48% in 2022). About the plans for NPP construction in Kazakhstan, 73% of respondents were aware (in 2022 — 65%). 53.6% of survey participants believe that Kazakhstan needs its own NPP (in 2022 — 48%). Opponents of the project accounted for 40% of respondents, which is less than the 44% recorded in 2022.

PLANS FOR 2024

- ◆ Participation in the preparation and holding of the National Referendum on the construction of NPP in Kazakhstan;
- ◆ Initiation of the Resolution of the Government of the Republic of Kazakhstan on selection of location for NPP construction;
- ◆ Determination of the marketing cost of engineering surveys and feasibility studies for the construction of a nuclear power plant in Kazakhstan;
- ◆ Supporting the Government of the Republic of Kazakhstan in selecting the main supplier of technologies for NPP (vendor).