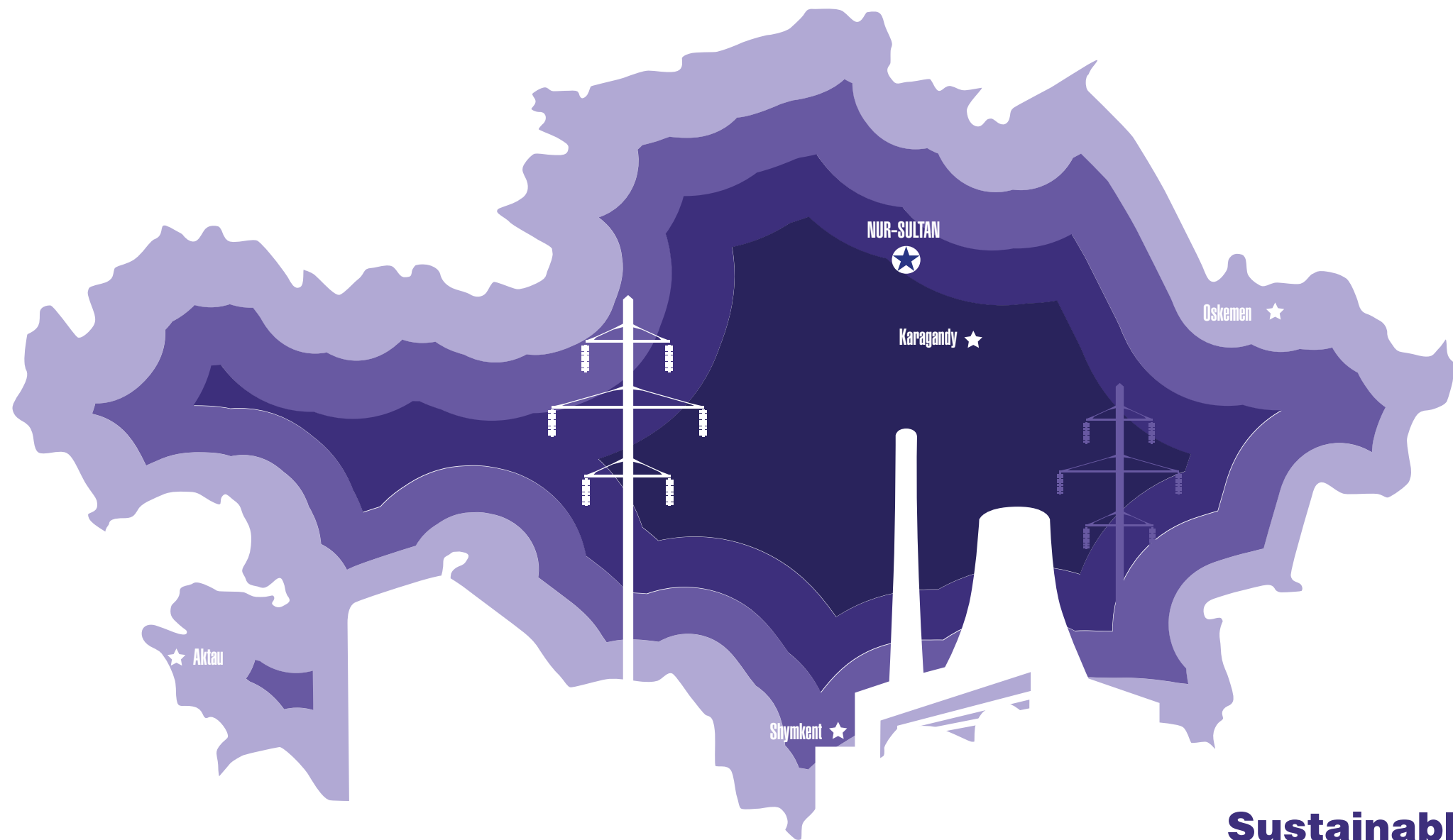


Annual report 2018



**Sustainable development today –
constructive future
tomorrow**

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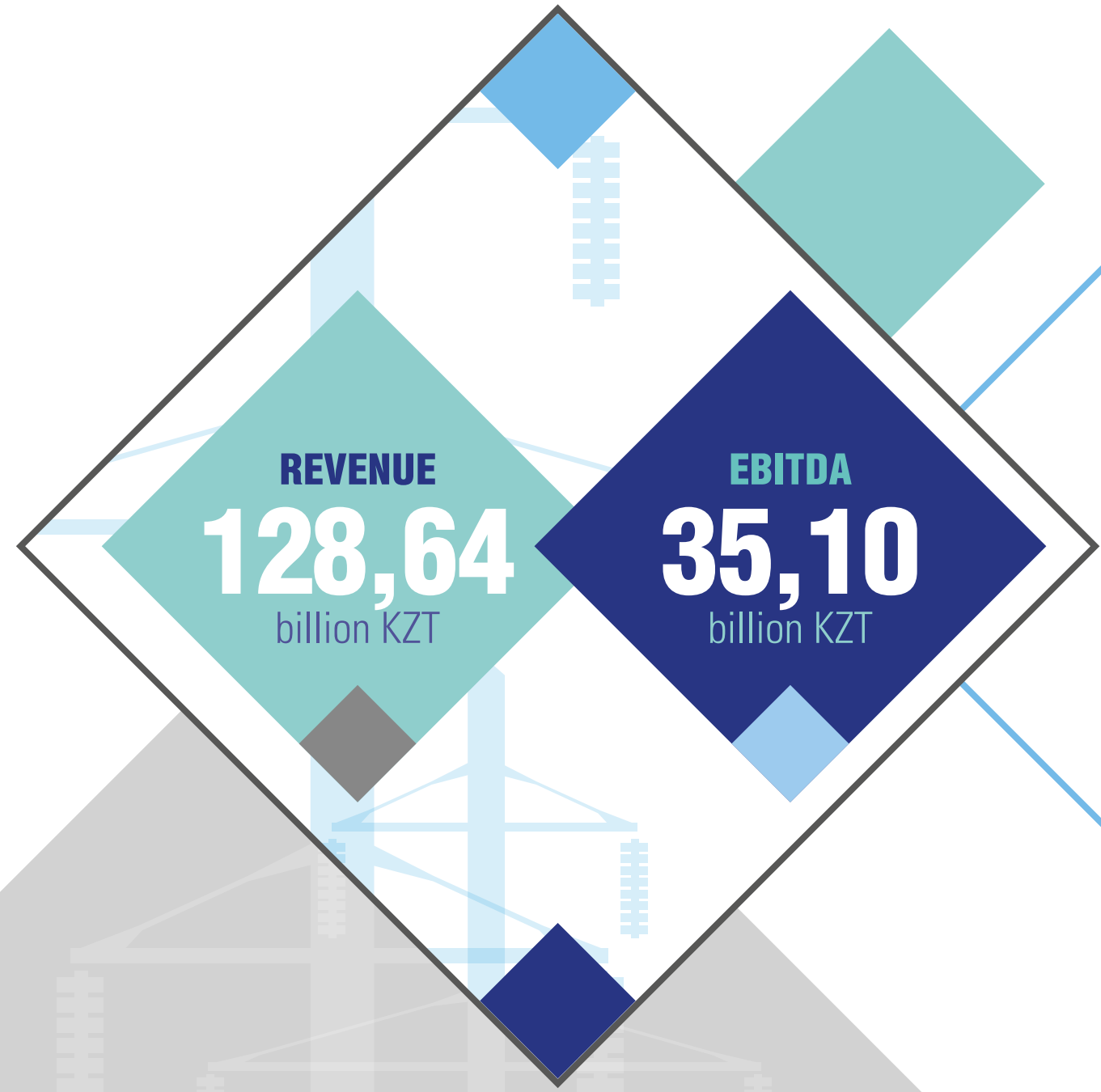
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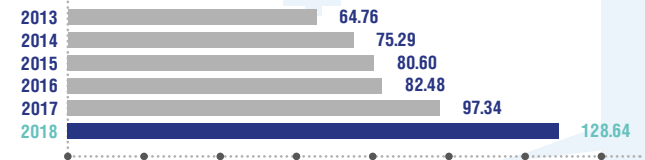
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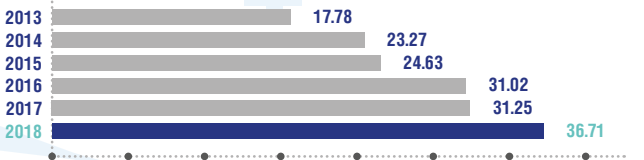
Key indicators



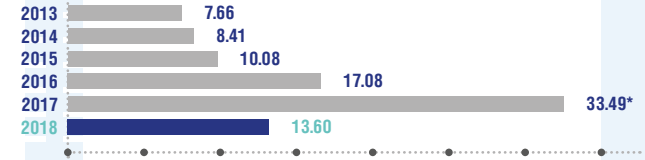
REVENUE
billion KZT



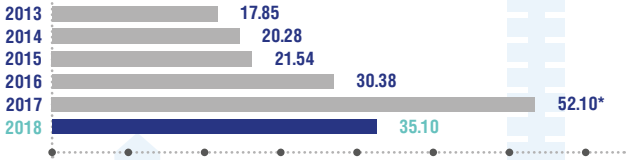
GROSS PROFIT
billion KZT



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billion KZT

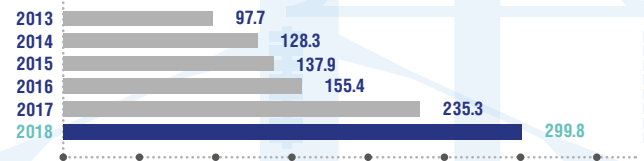


EBITDA
billion KZT

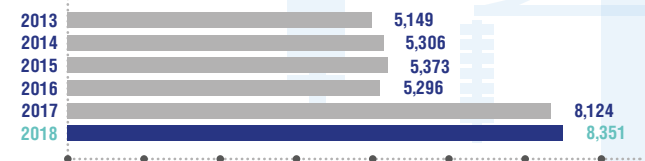


*data for 2017 were recalculated in 2018 financial statements (see IFRS statements)

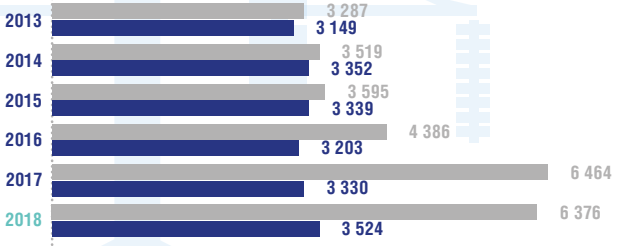
ASSETS
billion KZT



TRANSMISSION
million kWh



ELECTRIC POWER GENERATION AND SALE
million kWh



◆ Electric power generation ◆ Sale of electric power

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Message of the Chairman of the Supervisory Board



Ladies and gentlemen!

Let me greet you on behalf of the Supervisory Board of Kazakhstan Utility Systems LLP.

We are glad to represent our regular annual report that reflects all the main events, financial and production performances of Kazakhstan Utility Systems LLP for 2018.

Currently energy sector of our Republic undergoes large-scale reform that requires involvement of all industry participants. With structural interaction between regulatory authority and representatives of energy market, domestic power plants are actively upgrading their generating capacities, and electric power transmission enterprises are systematically carrying out a comprehensive upgrade of electric grid facilities.

Due to timely implemented measures, we can observe a concrete result – significant reduction in depreciation of fixed assets of generating enterprises and improvement of quality of electric power transmission and distribution.

We can predict with confidence that industry participants will continue to make stable investments in domestic energy system in the near future.

Kazakhstan Utility Systems LLP has always set as its priorities the system capacity building, use of innovative methods in asset management, innovative approach aimed at stable electric power supply to its consumers. The Group implements several large-scale activities to modernize production facilities aimed at improving the efficiency and reliability of equipment. For the period from 2010 to 2018, capital investments have already amounted to about 200 billion KZT.

I am pleased to note that KUS Group finished the year of 2018 with indicators demonstrating stable growth and progressive development of all three divisions – generation of electricity and heat, transmission and sale to end-users. This tells about successful implementation of corporate strategy and economic policy of KUS Group.

Kazakhstan Utility Systems LLP will continue to implement its policy aimed at systematic, comprehensive development of the Company. Implementation of large-scale investment programs, increase in generating capacity with construction of new power grids, as well as customer-oriented retail enterprises form the basis of philosophy of KUS Group.

I am convinced of further successful development of the KUS Group and its promising future. With existing potential, vast experience and opportunities, I sincerely wish all the KUS staff to realize their goals and tasks and I believe that they will achieve expected results.

*Best regards,
Dinmukhamet Idrissov*

I am pleased to note that KUS Group finished the year of 2018 with indicators demonstrating stable growth and progressive development of all three divisions – generation of electricity and heat, transmission and sale to end-users. This tells about successful implementation of corporate strategy and economic policy of KUS Group.

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Message of General Director



Dear readers!

Let me welcome you on behalf of the management of Kazakhstan Utility Systems LLP!

In accordance with Company's transparency policy, we are pleased to present you the annual report that contains economic indicators and dynamics of production activities of the KUS Group at the end of 2018. This report covers the full range of goals and objectives that we set for ourselves earlier and achieved in the reporting year.

I am confident that information published in this annual report will be useful both for our partners with whom we have long-term mutually beneficial cooperation, and for potential partners who will be able to get acquainted in detail with all aspects of the activities of Kazakhstan Utility Systems LLP, reflected in this report. This document will serve as a starting point and an additional drive for effective interaction in the future.

Today Kazakhstan Utility Systems LLP is one of the largest systemically important participant of country's energy market. We move beyond and set ourselves new goals aimed at building our potential and strengthening our position in the industry.

Structure of Kazakhstan Utility Systems LLP consists of following divisions: generation of heat and electricity, its transmission and distribution, as well as sale of electricity and heat.

Our corporate strategy covers all these areas and includes a well-thought-out mechanism to achieve the development indicators of these divisions.

Our corporate strategy demonstrates its success. Effectiveness of chosen course is demonstrated by concrete results. In 2018, Company continued to follow its course chosen from the date of its foundation.

As to specific figures, over the past 10 years, the power generation by CHPP of KUS Group has increased by 183%, heat – by 70%. During the same period, 8,500 kilometres of electric power transmission lines, as well as 1,860 substations and distribution stations were built and reconstructed by power transmission enterprises within our structure. Over 10 years, volume of electricity transmission services increased by 3.6 billion kWh, or 77%. Number of customers of Group's retail companies increased by more than 185,000 over the decade.

In 2018 alone, the increase in electric power generated by power plants of KUS Group amounted to 4.5%, in absolute terms it is 274 million kWh. Increase in volume of electric power transmission by energy transmission enterprises amounted to 2.8% or 228 million kWh in 2018. In the reporting period, volume of electric power sold by KUS Group's retail companies was higher by 5.8%, or 194 million kWh.

Undoubtedly, growth in production was possible primarily due to conscientious work of thousands of employees of KUS Group, the team that we are justly proud of. I would like to emphasize that human capital – highly skilled professionals committed to result is the supreme value of the Company.

I would particularly like to note that all the projects that we implement – modernization of existing assets, construction of new power grids, expansion of generating and electric power transmission capacities, and introduction of new technologies and automation of services in retail companies – are aimed at providing our consumers with

heat and electric power in the regions where the Group operates.

Operating in a strategically important industry, we fully understand our responsibility. I want to highlight that the Company strives not only to meet the requirements of our customers, but also to work ahead of the needs of residents of regions where the Group operates. The ultimate goal of our corporate development strategy, investment programs implemented by our subsidiaries, and all our comprehensive work is to ensure high quality and uninterrupted power supply to consumers. To achieve this goal, the Company increases generating capacity of CHPPs, upgrades power grid facilities, constructs new power facilities. Taking into account the steady increase in population, increase in number of small and medium-sized businesses, enhancing growth in construction of residential and social facilities and, as a consequence, the need for electric power supply to new consumers, this work will be continued.

Of course, corporate development strategy would not have been efficient without comprehensive support and trust of the Supervisory Board of KUS Group.

I am convinced that commitment to succeed and further joint work of Group's team will allow us to achieve goals that we set for ourselves in 2019, and to continue the dynamic development of the Company.

**Best regards,
Nabi Aitzhanov**

In 2018 alone, the increase in electric power generated by power plants of KUS Group amounted to 4.5%, in absolute terms it is 274 million kWh. Increase in volume of electric power transmission by energy transmission enterprises amounted to 2.8% or 228 million kWh in 2018.

Key events of the year 2018 and realization of priority tasks

Kazakhstan Utility Systems LLP

In January 2018, Kazakhstan Utility Systems LLP additionally acquired 6.77% of ordinary shares in SC MRENC JSC from Unified Accumulative Pension Fund JSC. Thus, the Group owns 50.19% of outstanding shares in MRENC JSC, ownership percentage of voting shares is 52.63%.

In February 2018, Kazakhstan Utility Systems LLP completed a transaction for sale of Sogrinsk CHPP.

In October 2018, international rating agency Fitch Ratings confirmed Kazakhstan Utility Systems LLP's long-term Issuer default ratings (IDR) in foreign and national currencies at the "BB-" level. The outlook is "Stable".

Karaganda Energocenter LLP

At Karaganda CHPP-3, the second stage of the project for increase in number of dams in the third section of the ash dump No. 2 was completed.

Ust-Kamenogorsk CHPP LLP

A project for reconstruction of existing ash dump is at completion stage, and construction of new ash dump for storage of ash and slag was started.

Ontustik Zharyk Tranzit LLP

HV line 110 kV L-108, feeding Baidibek area, with length of 45.05 km was reconstructed, insulators PF-6 were replaced for insulators PS-70, PSD-70, additional support to long spans were installed.

HV line 110 kV L-174 (loop line) feeding Turkestan city, with the length of 32.716 km, insulators PF-6 were replaced for insulators PS-70, PSD-70, additional supports were installed and AS-95,120 were replaced for AS-150.

HV line 110 kV L-141, with length of 10.456 km was reconstructed; PF-6 insulators were replaced for PS-70 insulators.

In order to reduce the impact of HV line 110 kV (L-149, L-Zhetysai, L-Feruz, L-6-A) on environment, a number of bird protective devices were installed.

Project was prepared and subsequent modernization of HL 0,4 kV were implemented using SIW with a length of 271.59 km.

Karagandy Zharyk LLP

Construction of substation 110/10 kV "Tikhonovka" was started.

Reconstructed: TS, ITS with replacement of power transformers – 139 pcs; CPDS 6 kV – 3 pcs. ACL 0,4–6–10 kV – 126 km.

Works on equipment of ARNES with radio relay communication were completed.

Engineering surveys were completed; design and estimate documentation for reconstruction of HV line 110 kV "Karaganda-New City" was developed.

Engineering surveys were completed and design and estimate documentation for construction of additional tap from HV line 110 kV "Saran – GPP-1" to substation 110/10 kV "Tikhonovka", 1,2 chains was developed.

Design and estimate documentation for wall diagram for UDF WPP has been developed.

Repair and production facility building for Shakhtinsk RES was purchased.

Construction of four automobile hangars and building of central warehouse in the territory of production base at SS "Zharyk" was started.

Technical modernization of equipment 6(10)–35–110 kV at 29 substations, including: Substation 110/10 kV "Vostok" – replacement of equipment outdoor switchgear 110 kV without replacement of power transformers; substation 35/6 kV "Central power plant" – replacement of outdoor switchgear 35 kV without replacement of power transformers and replacement of indoor switchgear 6 kV switchgear 6 kV; substation 110/35/6 kV "Kirovskaya" – replacement of all equipment of indoor switchgear 6 kV.

Overhaul of HV line 35-110 kV line with a length of 209 km was carried out.

Key events after the reporting date

In January 2019, international rating agency Fitch Ratings lowered Kazakhstan Utility Systems LLP's long-term Issuer default ratings (IDR) in foreign and national currencies to the level of "B+". The outlook is "Stable".

Mangistau Regional Electricity Network Company JSC

In March 2018, MRENC JSC attracted funding from the European Bank for Reconstruction and Development in the amount of 12.3 billion KZT from ordinary resources of the Bank and 5.3 million US dollars from the special Green Climate Fund for implementation of the investment program.

Construction of power line 220 kV Aktau-Karazhanbas with installation of autotransformer 1x150MVA at tie distribution substation 220/110/35/10 kV "Karazhanbas".

Construction of power line 110 kV from SS 220 kV "Uzen" to 110/35/6 kV "Plato" (length 1x18.7 km) with the replacement of transformer 1x40MVA.

Modernization (reconstruction) of indoor switchgear 6 kV substation of 110/6–6 kV "Promzona".

Modernization (reconstruction) of outdoor switchgear 110 kV of SS 220/110/10 kV "Uzen".

Retail companies of the Group

Increase of client base of Energopotok LLP through inclusion of customers of Ontustik Zharyk LLP.

KaragandyZhyluSbyt LLP successfully implemented an innovative IT system: electronic document flow; electronic queue for consumers; access system for employees based on their biometric data.

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Brief company profile

Kazakhstan Utility Systems LLP (KUS LLP, KUS, Company, KUS Group or the Group) is a successful vertically integrated company in the power and heat sector in the Republic of Kazakhstan.

Enterprises of the KUS Group form an industrial chain –from power and heat generation to their delivery to the end user In 2018, the Company operated in four regions of the country – Karaganda, East Kazakhstan, Mangistau and Turkestan regions, as well as in Shymkent. All KUS enterprises have unified management processes that provide effective interaction of all structural subdivisions of subsidiaries.

Development strategy of the Group corresponds to priorities of the state policy in the field of energy

sector development. The key strategic directions are: modernization of existing assets, expansion of generating and power transmission capacities, as well as customer orientation of retail companies. KUS is a stable company with a stable financial position, which is confirmed by ratings of international rating agency Fitch Ratings.

The company is a member of the Kazakhstan Electric Power Association (KEPA). KEPA includes 48 corporate members: energy producers and power grid companies, large industrial energy consumers, industry research and design institutes, power equipment producing companies, and other companies. In addition, KUS is a member of the KAZENERGY Association and the RK National Chamber of Entrepreneurs “Atameken”

Profiles of subsidiaries

Generation

Karaganda EnergoCenter LLP is a company that combined two power plants of the Group – Karaganda CHPP-1 and CHPP-3.

The total number of employees of KEC LLP is 1,297.

Karaganda CHPP-1
 Electric power: installed capacity – 32 MW, available – 24 MW.
 Heat power: installed – 460 Gcal/h, available – 235.8 Gcal/h.

Karaganda CHPP-3
 Electric power: installed – 670 MW, available – 562.5 MW.
 Heat power: installed – 1,429 Gcal/h, available – 1,077 Gcal/h.

Ust-Kamenogorsk CHPP LLP
 Electric power: installed – 372.5 MW, available – 277.8 MW.
 Heat power: installed – 881.7 Gcal/h, available – 881.7 Gcal/h.
 Number of employees – 558 people.

Zhuzimdyk Wind Farm LLP is a project for development of alternative energy in Turkestan region (Shayan village, Baidibek area of TR), which is being implemented
 Installed capacity of Zhuzimdyk Wind Farm – 40 MW.



Transmission and distribution

Karagandy Zharyk LLP is a power grid company in the Karaganda region
 0.4–220-kV Electrical networks designed for electricity supply to urban, industrial and agricultural consumers in Karaganda city and Karaganda region:

- ◆ 0.4–220 kV HV line – 5,161 km;
- ◆ 0.4–35 kV HV line – 1,678 km;
- ◆ substations 220/110/35 kV – 104 units;
- ◆ Service transformer – 242 pcs;
- ◆ TS, PTS, DB 6–10/0.4 kV – 1,811 pcs.

Number of employees – 1,624 people.

Ontustik Zharyk Tranzit LLP is a power grid company in Turkestan region
 0.4–110 kV electrical networks, designed for electricity supply to urban, industrial and agricultural consumers in Shymkent city and Turkestan region:

- ◆ 0.4–110 kV HV line – 22,810 km;
- ◆ 0.4–110 kV HV line – 659 km;
- ◆ substations 110-35 kV – 249 units;
- ◆ Service transformer – 352 pcs;
- ◆ TS, PTS, DB 6–10/0.4 kV – 5,717 pcs.

Number of employees – 3,391 people.

Mangistau Regional Electricity Network Company JSC is a power grid company in Mangistau region.
 0.4–220 kV power networks, designed for electricity supply to urban, industrial and agricultural consumers in Mangistau region:

- ◆ 0.4–220 kV HV line – 5,214 km;
- ◆ 0.4–35 kV CL – 40 km;
- ◆ substations 220/110/35 kV – 65 units;
- ◆ Service transformer – 114 pcs;
- ◆ Packaged transformer substation of 6-10/0,4 kV – 425 pcs.

Number of employees – 669 people.

Sale

Karagandy ZhyluSbyt LLP is an energy retail company in Karaganda and Karaganda region.
 Two district and two urban sales areas
 Number of subscribers for heat supply:

- ◆ 150,016 subscribers – individuals;
- ◆ 3,089 subscribers – legal entities.

Number of subscribers for power supply:

- ◆ 189–845 subscribers – individuals;
- ◆ 5,037 subscribers – legal entities.

Number of subscribers for hot water supply:

- ◆ 128,068 subscribers – individuals;
- ◆ 2,349 subscribers – legal entities.

Number of employees – 285 people.

Raschetnyi servisnyi center LLP is an energy retail company in the Karaganda region
 Two district and one urban sales area.
 Number of subscribers for power supply:

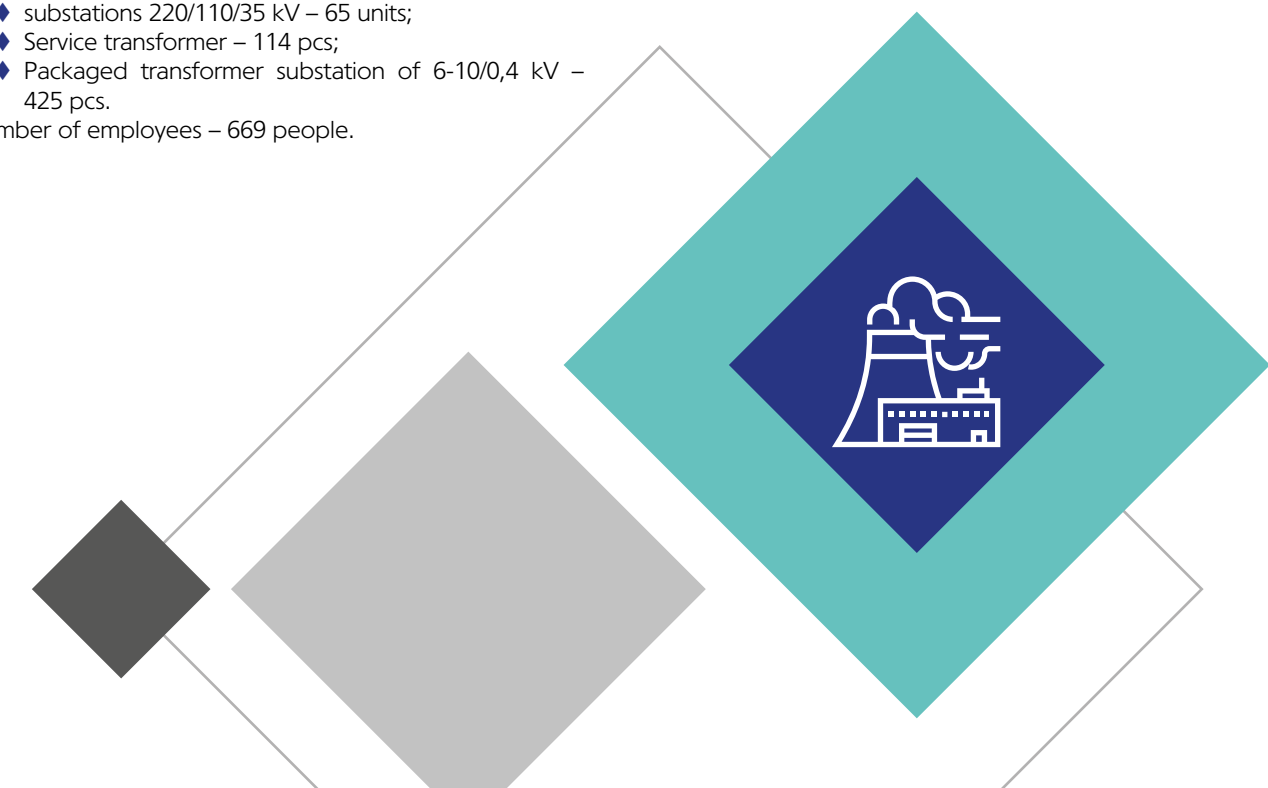
- ◆ 58,586 subscribers – individuals;
- ◆ 1,665 subscribers – legal entities.

Number of employees – 48 people.

Energopotok LLP is an energy retail company in Turkestan region in Shymkent
 13 regional and 3 urban sales areas.
 Number of subscribers for power supply:

- ◆ 583,802 subscribers – individuals;
- ◆ 25,777 subscribers – legal entities.

Number of employees – 649 people.



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Brief Company history

2008–2010

- ◆ On November 3, 2008 Management Company Kazakhstan Utility Systems LLP was formed.
- ◆ The Group gained control over 100% ownership interest in Ontustik Zharyk Transit LLP and Karagandy Zharyk LLP to create a vertically integrated energy company.
- ◆ In 2010, the Group joined the participants of Karaganda Energocenter LLP by making an additional contribution to the authorized capital and redistribution of shares between the participants.

2011

- ◆ Obtaining control over 100% shares in Karagandy ZhyluSbyt LLP, Raschetnyi servisnyi center LLP, Energopotok LLP and Ontustik Zharyk LLP with the goal of creating a vertically integrated energy company.
- ◆ Decision on the construction of a new power unit (boiler + turbine) at 110 MW and 185 Gcal/h at Karaganda CHPP-3.
- ◆ Karagandy Zharyk LLP commissioned two new substations.
- ◆ Karagandy Zharyk LLP has implemented an automated control and accounting system (ASKUE), the second stage.
- ◆ The construction of 110-kV HV line GRES-1 – CHPP-2 of Karagandy Zharyk LLP was completed.
- ◆ Ontustik Zharyk Transit LLP has implemented an automatic database and consumers system (ASBIP) with the purpose of issuing technical conditions for the fastest possible identification of connection points.
- ◆ Signing of EPC-contract for expansion of Karaganda CHPP-3, installation of power unit No. 6.
- ◆ Commissioning of a new turbine No. 5 with a capacity of 120 MW.
- ◆ Commissioning of the cooling tower No. 4 of Karaganda Energocenter LLP.
- ◆ Implementation of ASKUE by Karagandy Zharyk LLP, 3rd stage.

2012–2013

- ◆ Signing an agreement with Development Bank of Kazakhstan JSC for opening a credit line of KZT 30 billion for Karaganda Energocenter LLP.
- ◆ Construction of new ash dumps for dry storage of waste at stations of CHPP-1 and CHPP-3 of Karaganda Energocenter LLP.

- ◆ Construction of Zharyk substation (SS) of Karagandy Zharyk LLP.
- ◆ Ontustik Zharyk Transit LLP has begun construction of 110-kV Severnaya Substation and 110 kV Nursat Substation.
- ◆ Establishment of Energy Center LLP. The company's statutory activity is the production of heat and power energy. 100% share in the partnership belongs to KUS LLP.

2014

- ◆ Since 2013 there is a process of expansion of CHPP-3 of Karaganda Energocenter LLP, by installing turbine No. 6 and boiler No. 8.
- ◆ Karagandy Zharyk LLP commissioned 220/110/10 kV Zharyk and 110/35/6 kV Santechnicheskaya—2 substations.
- ◆ Ontustik Zharyk Transit LLP commissioned Severnaya substation (2x40,000 kVA), constructed and modernized 10/0.4 kV networks, and various voltage class substations.
- ◆ The project "Construction of a wind power station in the SKR" was initiated.
- ◆ Subsidiary marketing organizations expanded their customer base and introduced the "Unified Billing System" for suppliers of all types of utilities, buildings were acquired to create contact centers.

2015

- ◆ In December, Ontustik Zharyk Transit LLP introduced 10/0.4-kV ASKUE, as a result, in 2015 in Turkestan, 31 package transformer substations and 3,740 consumers were connected.
- ◆ Ontustik Zharyk Transit LLP designed, built and commissioned 110/10–10 kV Nursat closed type substation with installed capacity of 2 x 40 MVA power transformers.
- ◆ Karagandy Zharyk LLP constructed and commissioned 220/110/35-kV Zharyk substation.
- ◆ Karagandy Zharyk LLP constructed and commissioned 110/35/10-kV Santechnicheskaya-2 and 110-kV CHPP-3 Santechnicheskaya-2 HV line, L = 1.3 km with the installation of AC wire 300 sq. mm.
- ◆ In order to diversify the Group's activities through the development of alternative energy, on July 15, 2015, Zhuzimdyk Wind Farm LLP was established, with 100% shares belonging to KUS LLP.

- ◆ In November, in Karaganda region, for the convenience of consumers, a joint project with ERC LLP for implementation of a unified payment document (UPD) was completed and developed on the principle of "one window", the number of cash handling units was increased, and the electronic queue system was introduced.
- ◆ Installation of the new 110-MW power unit was completed at Karaganda CHPP-3 of Karaganda Energocenter LLP. A trial run of the unit was carried out at full capacity with an ad hoc acceptance of equipment; a new fan-cooling tower was commissioned.
- ◆ New contact centers were opened in subsidiaries of retail organizations of the South Kazakhstan region and Shymkent.

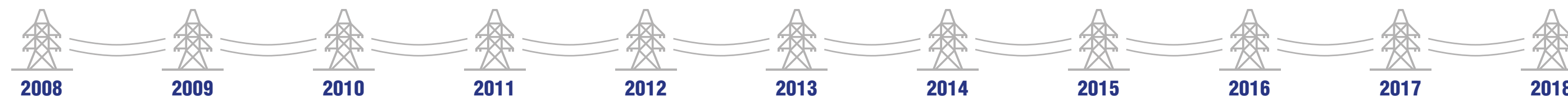
2016

- ◆ Kazakhstan Utility Systems LLP acquired 6.54% of common shares of Mangistau Regional Electricity Network Company JSC.
- ◆ In the trading system of Kazakhstan Stock Exchange JSC (KASE) the first specialized trades on placement of bonds of Kazakhstan Utility Systems LLP were held.
- ◆ The international rating agency Fitch Ratings confirmed that Kazakhstan Utility Systems LLP has long-term issuer default ratings (IDR) in foreign and national currencies at the level of "BB-". The outlook is "Stable".
- ◆ During the international contest "Choice of the Year No. 1 in Kazakhstan" Kazakhstan Utility Systems LLP officially received "Energy Company No. 1 of 2016 in Kazakhstan" award.
- ◆ A new power unit commissioned at Karaganda CHPP-3 of Karaganda Energocenter LLP, which includes a 110-MW power turbine and a 400 Gcal/h steam heat boiler. Due to this, Karaganda CHPP-3 became the largest heat and power plant in the Republic of Kazakhstan.
- ◆ In Shymkent 110/10 kV Nursat power substation of closed-type was commissioned
- ◆ Ontustik Zharyk Transit LLP has developed the project and completed modernization of 0.4–10 HV transmission lines with the use of self-supporting insulated wire with total length of 0.4 kV overhead transmission line – 220 km for 0.4-kV HV lines, for 6–10 kV HV line – 7 km.
- ◆ Karagandy Zharyk LLP reconstructed TSS, PTS with power equipment – 119 pcs, CL – 52 km, ACL (SIW) – 88 km; a new building of dispatcher station of the UDF WPP.

- ◆ In 2016, Karagandy ZhyluSbyt LLP switched to unified payment document (UPD) in settlements with consumers.

2017

- ◆ KUS LLP has attracted funding in the amount of 882.4 million KZT through successful placement of bonds on Kazakhstan stock exchange.
- ◆ A credit line was opened with SB Sberbank JSC for purchase of 100% of shares in AES Middelzee Holding B. V. for a total amount of 7.2 billion KZT maturing in March 2024. 6.6 billion KZT was used.
- ◆ Generating assets purchased in East Kazakhstan region: Ust-Kamenogorsk CHPP and Sogrinok CHPP with total installed capacity 447,5 MW.
- ◆ 37.5% of shares of total placed shares in Mangistau Regional Electricity Network Company JSC (MRENC) were acquired, and the total number of MRENC shares in KUS portfolio reached 43.73%.
- ◆ The international rating agency Fitch Ratings confirmed that Kazakhstan Utility Systems LLP has long-term issuer default ratings (IDR) in foreign and national currencies at the level of "BB-". The outlook is "Stable".
- ◆ Karaganda CHPP-3 completed the first stage of project to increase the number of dams of 3rd section of ash dump No. 2.
- ◆ At Ust-Kamenogorsk CHPP, the project for reconstruction of existing ash dump is completed, and construction of new ash dump for storage of ash and slag was started.
- ◆ MRENC JSC constructed 220 kV power line Aktau – Karazhanbas with autotransformer 1x150MVA at tie distribution substation "Karazhanbas".
- ◆ In the course of diversification of activities, the project for maintenance of household utilities successfully expanded the market for services.
- ◆ Number of serviced personal accounts of consumers has increased by almost 20 thousand, or 1.8%, compared to 2016.



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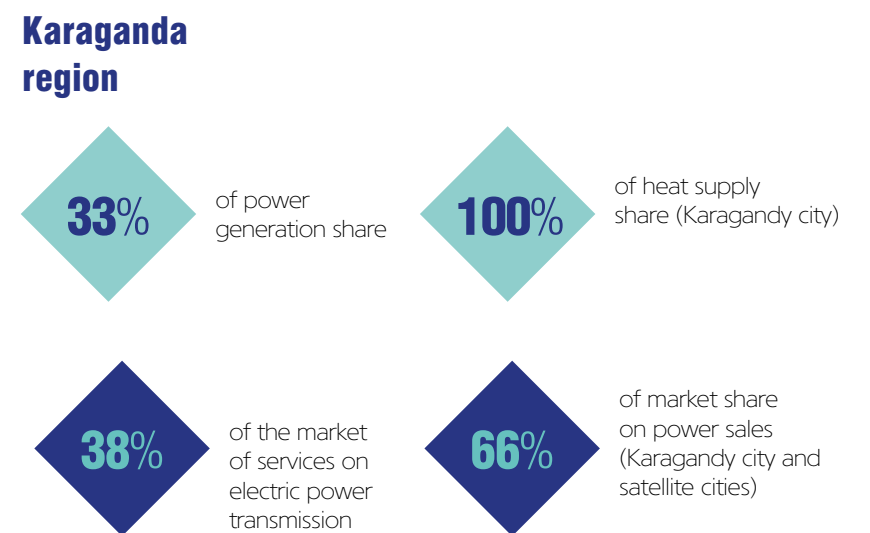
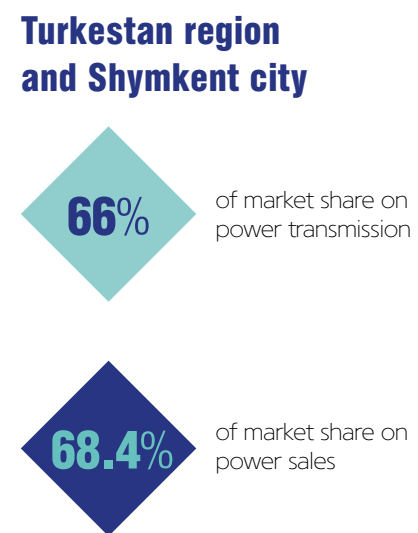
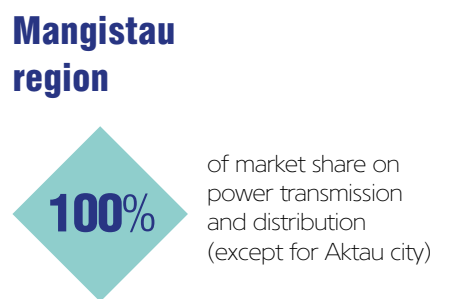
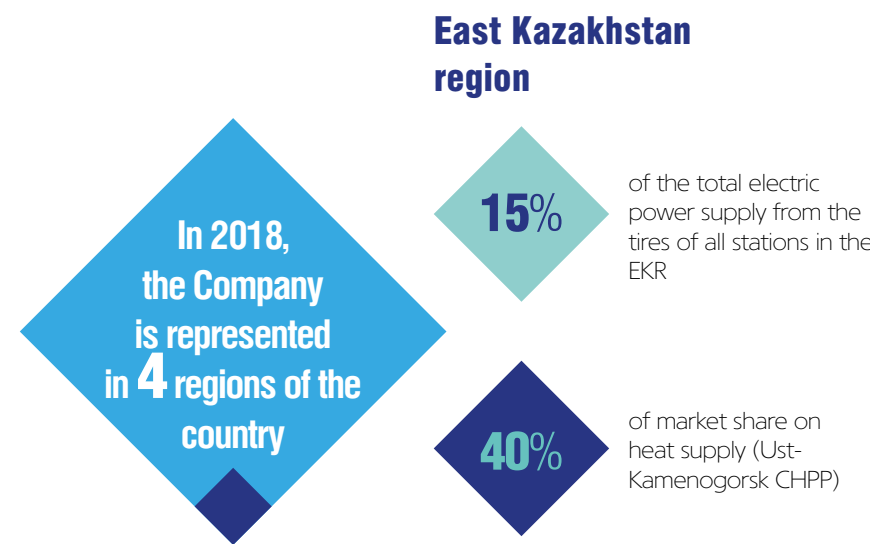
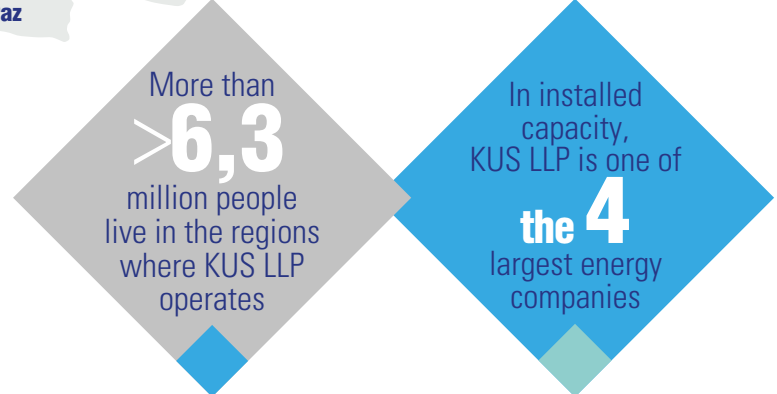
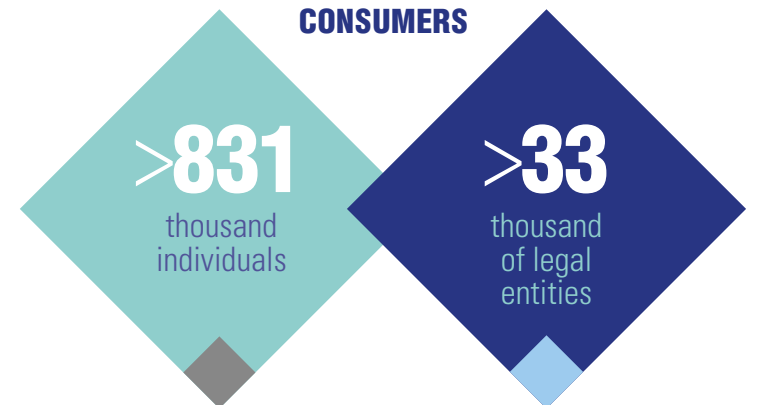
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Geography of locations

In 2018, the Group was represented in four of 14 regions of Kazakhstan – Karaganda, South Kazakhstan, East Kazakhstan and Mangistau. The total population of these regions is 6.3 million people, which is about 35% of the republic's population

In 2018, consumers of KUS services were more than 831 thousand individuals and over 33 thousand of legal entities

In Karaganda region, the Group focuses on production of heat, electric power energy and chemically purified water, as well as transmission, distribution and sale of electric power and heat. In Turkestan region – only transmission, distribution and sale of electric power, in the East Kazakhstan – production of heat and power energy, in Mangistau – transmission and distribution of electric power.



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Mission, vision, values

Mission

The mission of the KUS Group is to provide reliable and high-quality power supply to its consumers, to promote long-term economic growth and social stability in the regions of presence, their prosperity and progress. The Group also sees its mission in preservation and protection of the environment when using natural resources rationally. At the same time, the Group places its unity with consumers, honest and open dialogue and implementation of joint tasks as the main priority.

Vision

The KUS Group is an actively developing structure that is leading in key segments of power and heat energy of Kazakhstan: generation, transmission and sale of energy.

The Group constantly expands the list of assets and geography of its presence through inclusion of various power engineering industry companies, use of renewable power sources and provision of support to promising innovative projects.

Values

Reliability is ensuring reliability and high quality of the services provided by the Company.

Professionalism and team spirit – improvement of professional level of employees as one of the most important tasks of the company

Human capital asset is a belief in success of a common goal, mutual respect, assistance to each employee in growth and development, understanding of their interests and needs.

Innovativeness – continuous aspiration to improve and optimize already existing approaches and technologies as well as strenuous support and promotion of development of new products and solutions

The goal of KUS LLP is to increase the value of the Company, to maintain profitability and stability of business, to ensure shareholders' return on investment through increase in the value of assets.

To achieve these goals, the Company is constantly working to develop and optimize business processes, including reducing costs, increasing the efficiency of operations, improving the quality of products and services provided, and applying new advanced technologies.

The Company's responsibility to the country is to ensure:

- ◆ that Company's energy assets networks meet the growing demand for heat and power;
- ◆ sufficiency and reproducibility of the resource base, efficient management of costs;
- ◆ effective and reasonable use of funds invested in the Company, as well as minimizing the risks of investment activity;
- ◆ coordinating the Company's plans and regional development plans to satisfy the region's future energy supply needs.

Kazakhstan Utility Systems LLP considers quality management, labor safety and preservation of life, health, environmental protection as an integral part of its mission of a high-tech, efficient and dynamically developing company in the Republic of Kazakhstan.

The main priorities of Kazakhstan Utility Systems LLP that allow us to ensure quality and timely implementation of all projects are:

- 1) systematic training and continuous improvement of professional skills of KUS Group employees, improvement of human resources, preservation and enhancement of human capital assets of KUS LLP

- 2) maximum of effective use of existing production, financial and human assets of the KUS Group to achieve set goals;
- 3) customer orientation of retail companies, providing constant feedback to consumers, improving services;
- 4) strict observance of legislation of the Republic of Kazakhstan, state legal acts regulating energy policy, which are guides to the KUS Group in its activities;
- 5) construction of new power grids, expansion of generating and power transmission capacities, stable growth of production indicators of enterprises belonging to the KUS Group;
- 6) modernization of existing energy assets, use of innovative solutions at their production facilities, scientific, innovative approach and optimization of energy costs;
- 7) constant focus on preserving the environmental balance in the course of operations of the organizations belonging to the KUS Group, implementation of the most progressive, energy efficient and safe solutions considering the environment and labor protection, technical solutions for implementation of projects;
- 8) openness and transparency of all activities of KUS Group, provision of necessary information to consumers, partners and the public about the work of KUS LLP, including media coverage, taking into account the high social significance of the products manufactured and sold by the Group;
- 9) Continuous analysis of activities of all suppliers and contractors of the KUS Group, building long-term, mutually beneficial relationships with them.

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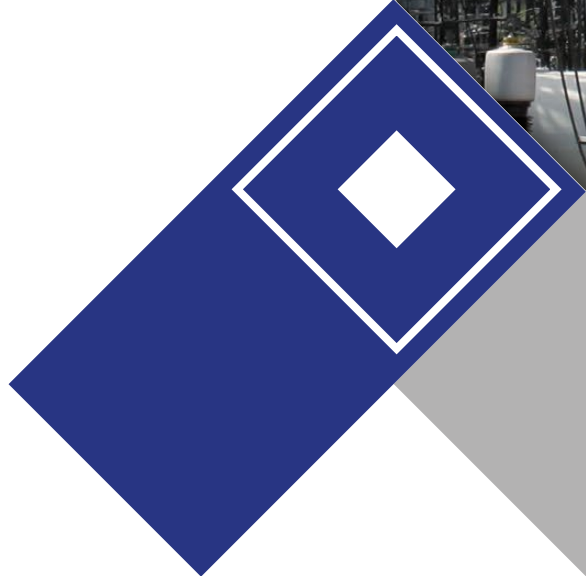
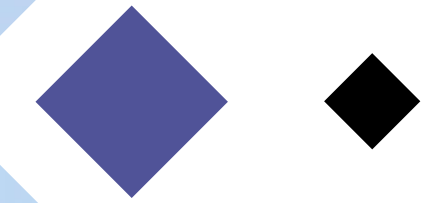
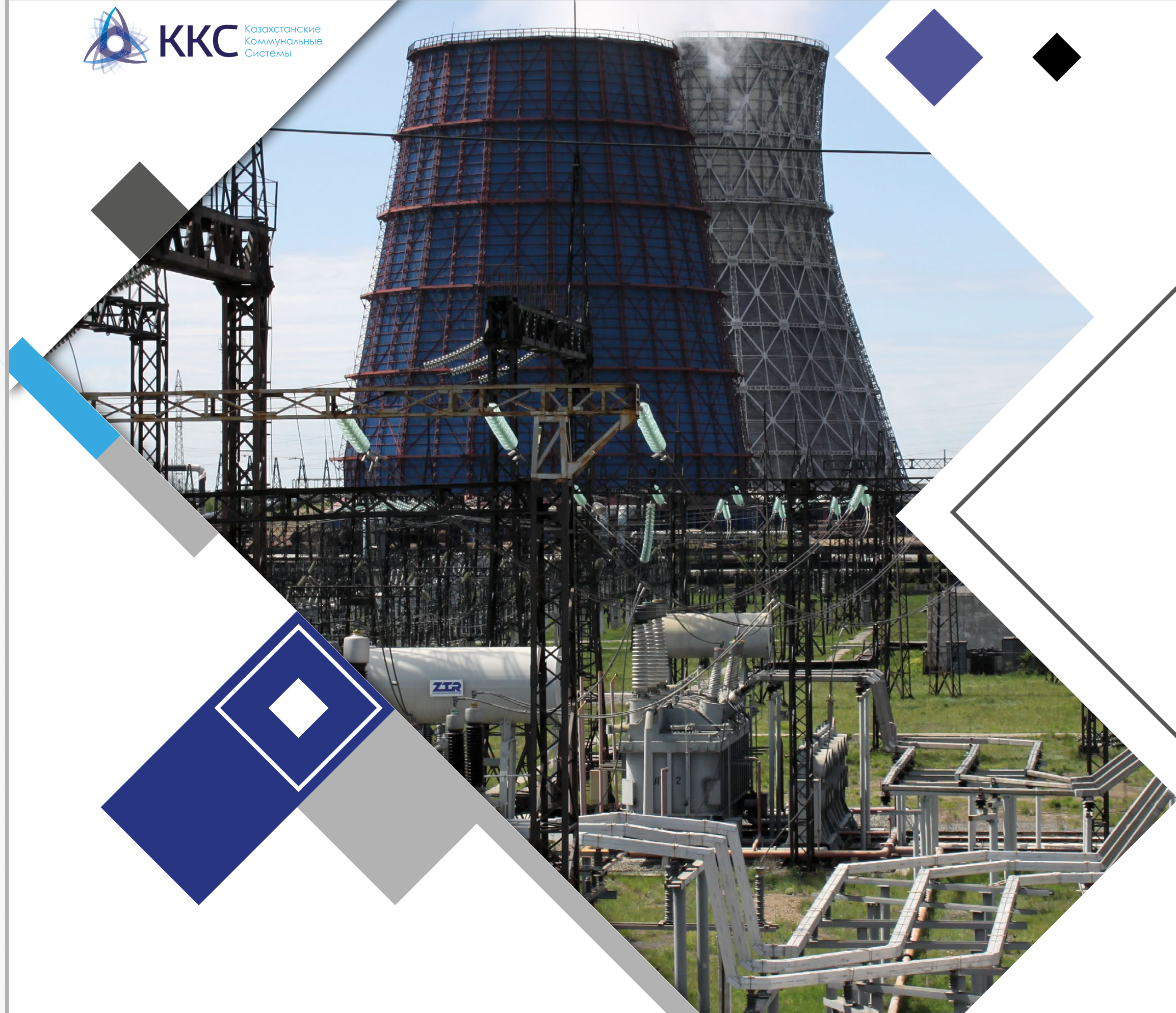
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Strategy of Kazakhstan Utility Systems LLP

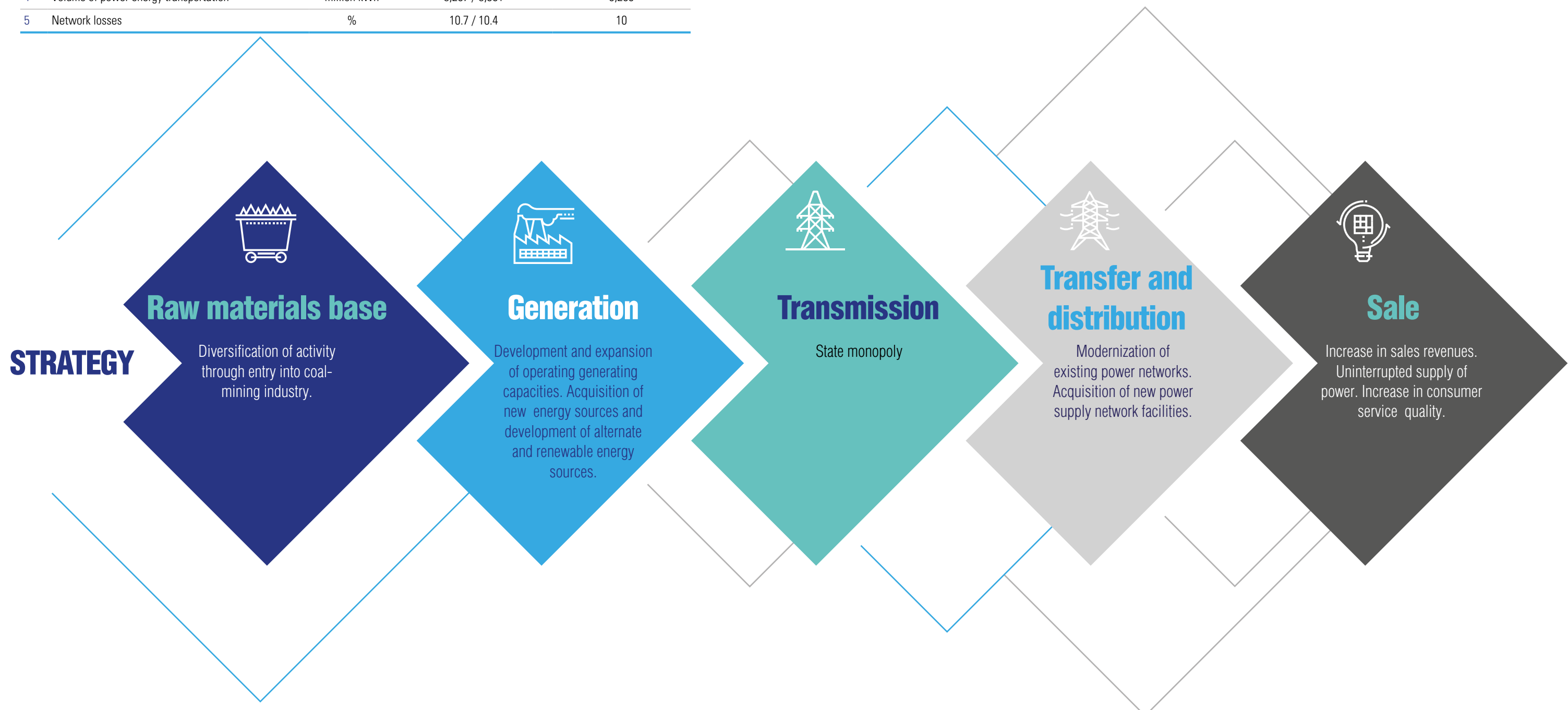
The KUS Group occupies one of the leading places in the list of energy companies of the country. The strategic goal of KUS is to become one of the three largest energy companies in Kazakhstan in the perspective of five years.

KPI of Kazakhstan Utility Systems LLP for 2019

No.	Key performance indicator	Unit of measurement	Plan/Fact for 2018	Plan for 2019
1	EBITDA	million KZT	39,452 / 35,099	37,908
2	Capitalization	million KZT	261,094 / 233,060	251,709
3	Average annual power output	MW	611/737.2	730
4	Volume of power energy transportation	million kWh	8,257 / 8,351	9,259
5	Network losses	%	10.7 / 10.4	10

Corporate development

- ◆ The Group introduces managerial innovations, international standards of corporate governance.
- ◆ Focus on promotion of international investments in KUS and power industry of the country.
- ◆ The Group strives to support the development of human potential through establishing responsible relations with employees.
- ◆ Creation of positive reputation of the company and strong brand.
- ◆ Active promotion of company interests in terms of legislation.



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Business model

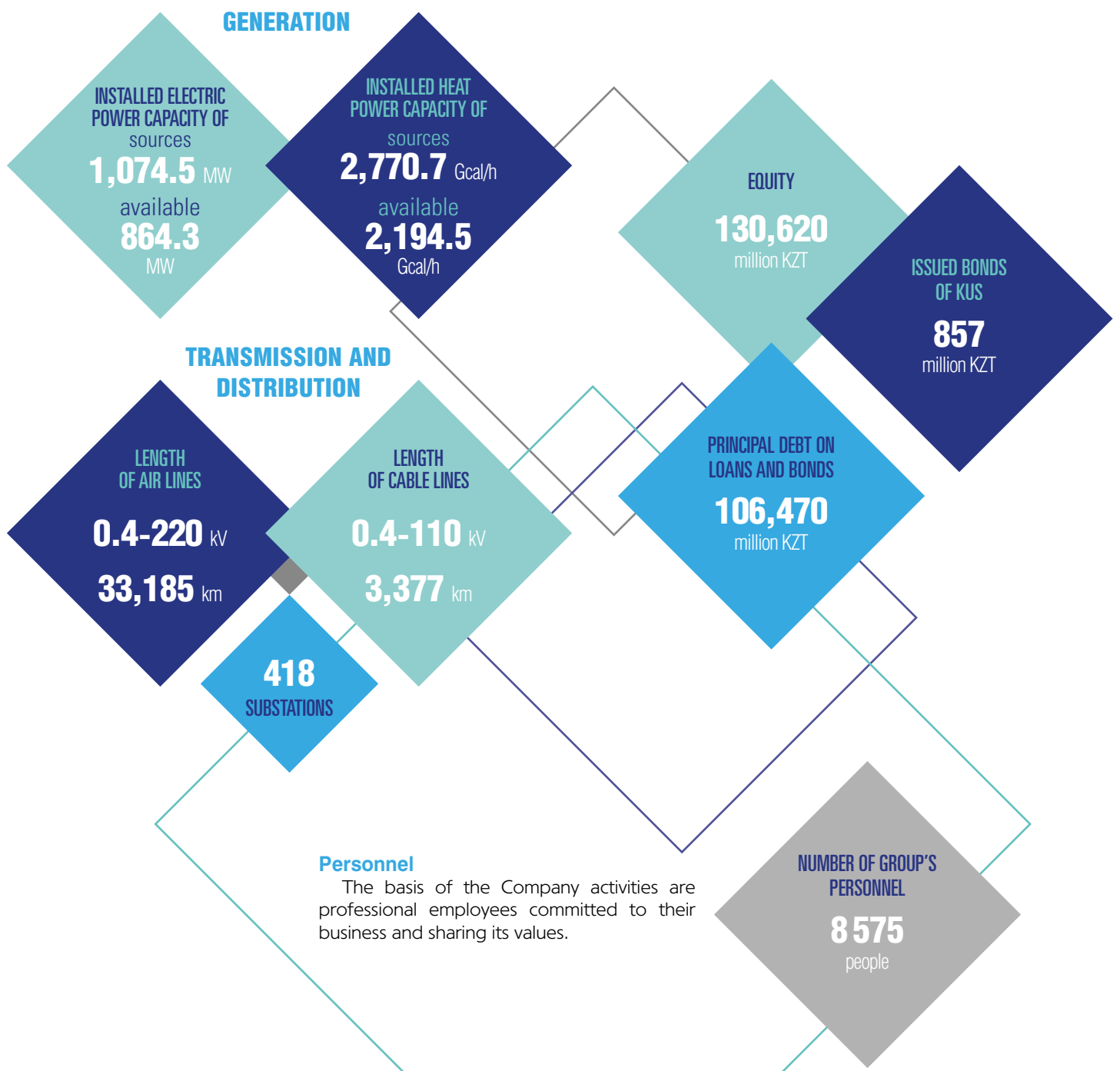
Our resources
(as of January 1, 2019)

Production capacities

The Group has a strong production base, which is a combination of power and heat generating sources, as well as power transmission networks, heating plants and substations.

Capital

The company strives to effectively use the shareholders' capital and borrowed financing, ensuring proper profitability and stably performing the financial liabilities, which is confirmed by high credit ratings ("BB-" from Fitch Ratings).



What we do?

Enterprises of the KUS Group form an industrial chain –from power and heat generation to their delivery to the end user. In 2018, the Company operated in four regions of the country. Effective interaction of all structural subdivisions of subsidiaries is provided.

Heat and power generation

The basis for heat and power generation of the Group consists of 3 combined heat and power plants. CHPP-1 and CHPP-3 are included in subsidiary organization of Karaganda Energo LLC, which is the only centralized supplier of thermal energy and the largest electricity supplier in Karaganda. Ust-Kamenogorsk CHPP is a subsidiary company of Shygys Energo LLC. The power and heat generated by Ust-Kamenogorsk CHPP covers 80% of the city's housing and utility services. Group assets play a significant role in the energy sector of these regions of operation.

Electric power transmission and distribution

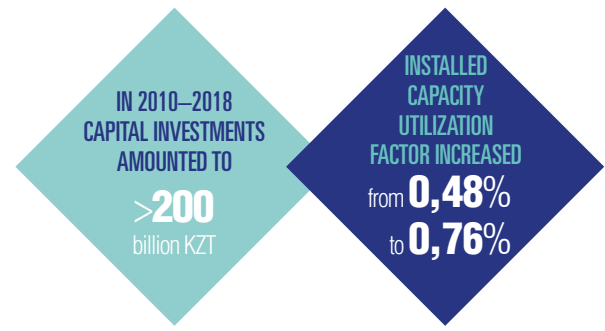
The Group's power networks are a set of substations, switchgears and transmission lines with a voltage of 0.4–220 kV. Three subsidiary power grid companies provide electricity to urban, industrial and agricultural consumers in Karaganda, Turkestan and Mangistau regions.

Sale

Power retail enterprises of the Group carry out direct work on interaction with consumers, which are both individuals and large industrial companies. Electric power retail companies of the Group operate in Karaganda and Turkestan regions.

Investment activity

The Group implements several large-scale activities to modernize production facilities aimed at significantly improving the efficiency and reliability of equipment. Execution of the investment program allows us to reduce the regulatory technical losses, as well as to increase the reliability of power supply to regions covered.



Value creation (2018 results)

Consumers

Consumers of KUS services in four regions of the Group's presence are more than 830 thousand individuals and over 33 thousand legal entities

Electric power production amounted to 6,377 million kWh.

5,868 thousand Gcal heat generated.

Personnel

The Company seeks to maintain the status of a good employer, creating the best working conditions for its employees, providing them with the appropriate material and non-material remuneration, training and development of competencies.

11,652,464 thousand KZT – expenses for labor payment.

59,904 thousand KZT – expenses for social support of employees.

5,369 people have been trained.

Founders and creditors

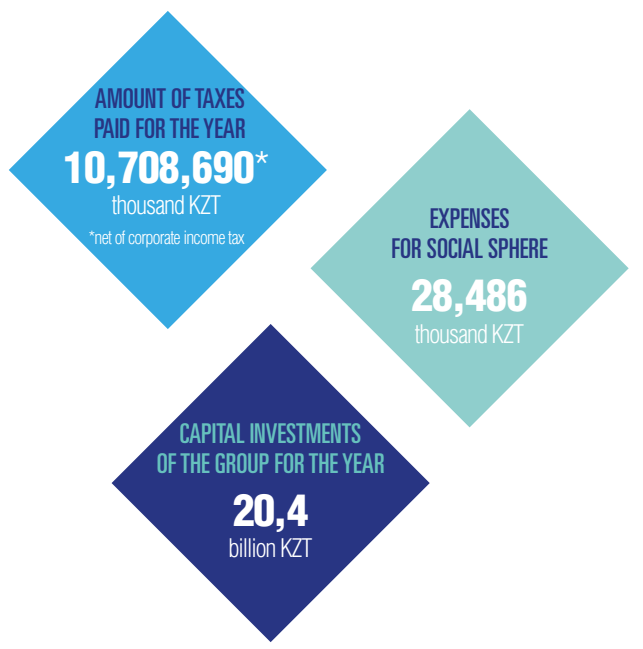
An effective system of corporate and risk management is aimed at maintaining the balance of interests of founders and creditors and Group's development.

128,512 thousand KZT – interest paid on issued bonds of KUS.

7,003,472 thousand KZT – interest paid on loans.

State bodies and regions of presence

The Company is a large employer and taxpayer in the regions of its presence, and also provides infrastructure development and supports local communities.



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Vertical integration

The Group is a vertically integrated company with 10 energy companies at the end of year 2018.

Within the Group, the following segments are distinguished:

Generation:

- ◆ Karaganda Energocenter LLP
 - Karaganda CHPP-1
 - Karaganda CHPP-3
- ◆ Shygys Energo LLP
 - Ust-Kamenogorsk CHPP LLP
- ◆ Zhuzimdyk Wind Farm LLP

Transmission and distribution:

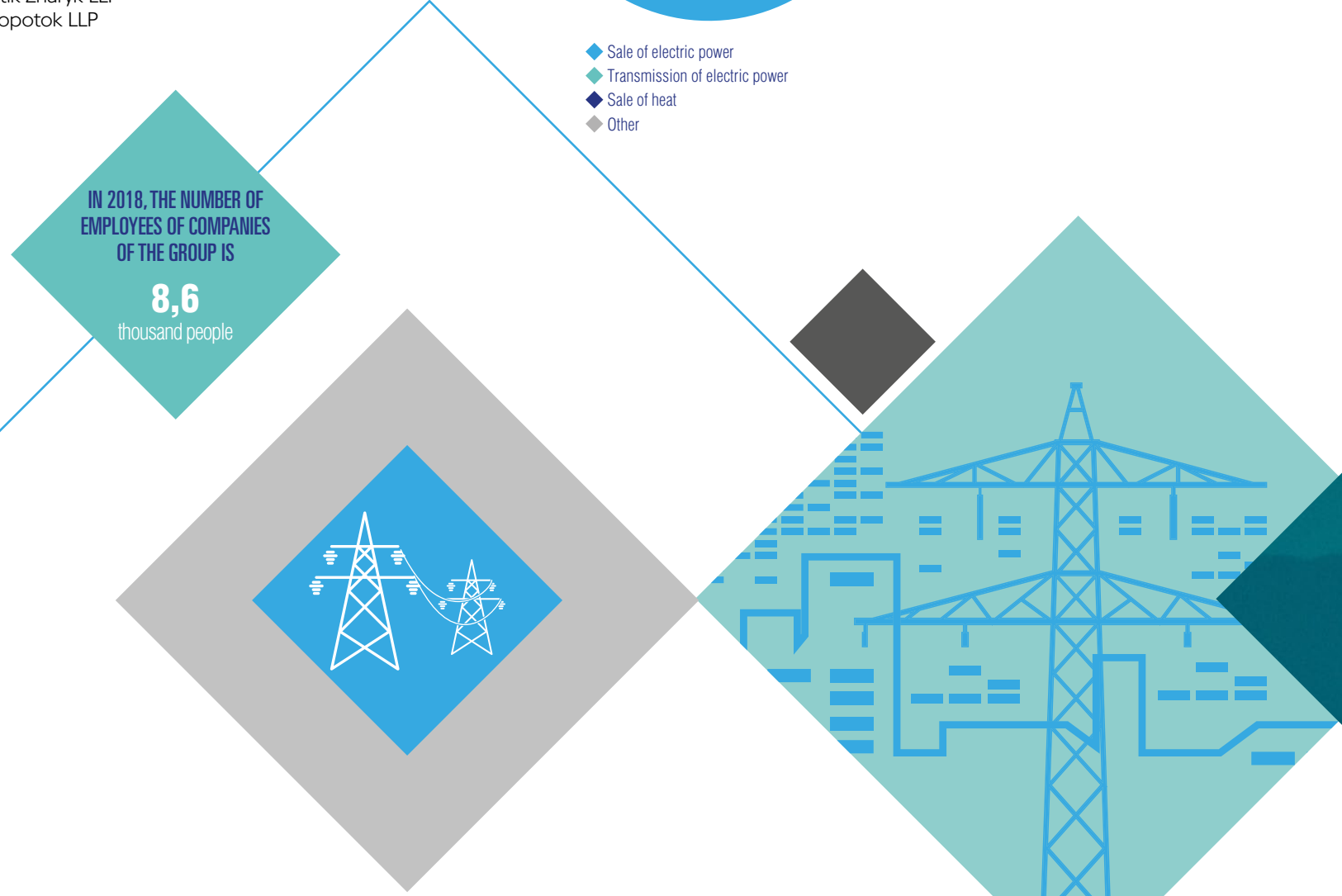
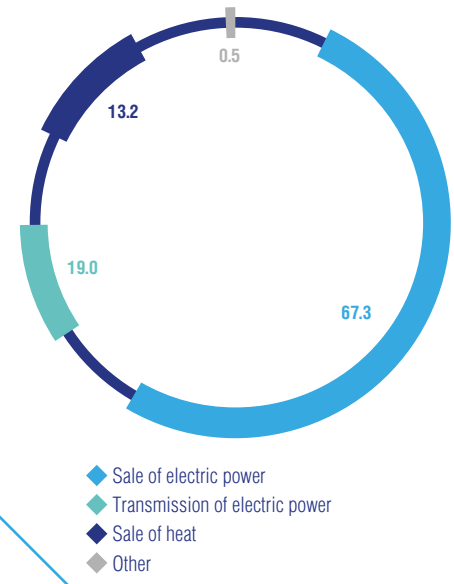
- ◆ Karagandy Zharyk LLP
- ◆ Ontustik Zharyk Tranzit LLP
- ◆ Mangistau Regional Electricity Network Company JSC

Sale:

- ◆ KaragandyZhyluSbyt LLP
- ◆ Raschetnyi servisnyi center LLP
- ◆ Ontustik Zharyk LLP
- ◆ Energopotok LLP

Following the results of 2018, KUS supplies regions of presence with power and heat, where lives 35% of the population of Kazakhstan.

Revenue structure, 2018



Competitive advantages

- ◆ Strategic importance – In 2018, the Group and its subsidiaries supply regions of presence with power and heat, **where lives 6.3 million peoples of Kazakhstan’s population.**
- ◆ Being a **vertically integrated, large scale and diversified**, the Group operates to a maximum effect in order to provide qualitative services to its customers, which at the end of 2018 counted more than 830 thousand individuals and 33 thousand legal entities. In the regions of its presence, KUS occupies a dominant position.
- ◆ The possibility of concluding **long-term purchase and sale contracts** for electricity allows us to attract large industrial consumers with longterm development plans.
- ◆ The Group has established itself as **one of the most attractive issuers** of debt obligations among operating companies present on Kazakhstan securities market.
- ◆ Absence of debt burden in foreign currency, and as a consequence, ability to **provide flexible pricing policy.**
- ◆ The Group successfully **diversifies its funding sources.**



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External environment review

Macroeconomic review

In 2018, the volume of Kazakhstan's gross domestic product increased by 4.1% compared to 2017 and amounted to KZT 59,613.7 billion (according to preliminary data of Committee on Statistics of MNE of the RK).

According to National Bank of the Republic of Kazakhstan, the increase in GDP in 2018 is explained by positive dynamics in all sectors of the economy. Mining industry (increase in production volumes by 4.6%), processing industry (4.0%), wholesale and retail trade (7.6%), transport and storage (4.6%), real estate operations (2.7%) provided largest input for economic growth.

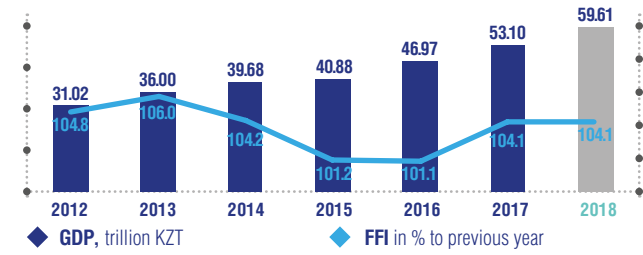
GDP growth was due to both improvement of price environment on world commodity markets and measures taken by the state to support the economy.

According to data of Committee on statistics of MNE RK, increase in volume of industrial production was observed in 14 regions of the Republic, decline was observed in Kyzylorda, West Kazakhstan and Turkestan regions. In the Karaganda region, there was increase in extraction of coal, copper ores and concentrates, increase in production of fine gold and insulated wire (industry index – 100.2%). In Turkestan region, industrial production index was 97.3% due to a decrease in uranium ore production and decrease in natural uranium production. Production of copper ores and concentrates increased in East Kazakhstan region, production of sunflower oil, refined gold, refined copper and passenger cars increased (109.3%). In Mangistau region, industrial production index was 100.4% due to increase in crude oil production.

According to National Bank of the Republic of Kazakhstan, in 2018 annual inflation was 5.3%. Annual inflation was largely owing to nonfood goods which went up by 6.4% during the year. Prices of food products and services increased by 5.1% and 4.5%, respectively during the year.

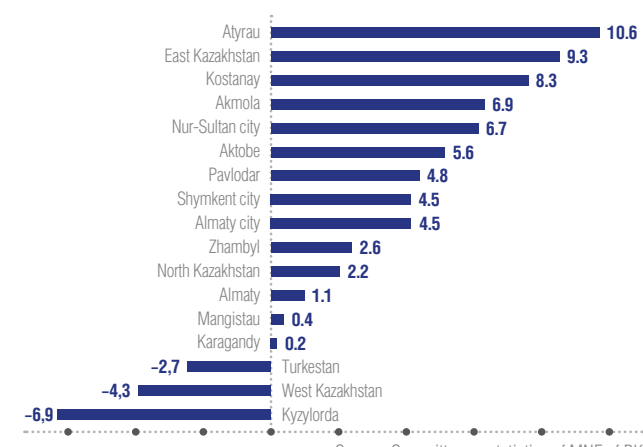
According to the forecasts of the National Bank, in 2019, annual inflation will gradually slow down, remaining within the new target corridor of 4–6%.

GDP DYNAMICS



Source: Committee on statistics of MNE of RK

CHANGE IN INDUSTRIAL PRODUCTION INDEXES BY REGIONS, year 2018 in % compared to year 2017



Source: Committee on statistics of MNE of RK

Industry overview

According to KEGOC, as of January 1, 2019, the total installed capacity of power plants in Kazakhstan is 21,902 MW – this is 220 MW more than on January 1, 2018, which is explained by commissioning of new capacities by large energy companies. At the same time, available capacity amounted to 18,895 MW and grew by 103.5 MW. 70% of the installed capacity is accounted for power plants of the Northern zone of UES of Kazakhstan, 15% – the Western zone of UES, 16% – Southern zone of UES.

In 2018, power generation in Kazakhstan amounted to 106,797.8 million kWh, i.e. 4.3% more compared to previous year.

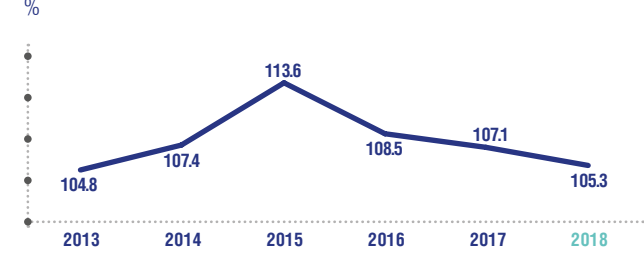
Performance of heat power plants, which are the basis of production capacities of Kazakh energy sector, increased by 5.3% in 2018. There has been a significant growth in efficiency of GTTP – 8.9%. At the same time, HPP showed a 7.3% decrease in production. In 2018, there was a 27% increase in electric power generation at generation facilities that use renewable energy sources, in particular wind and solar power plants. Kazakhstan is committed to development of alternative energy sources, but they still account for a small share in overall generation structure.

At year-end 2018, KUS LLP accounted for about 6% of total electricity generation in Kazakhstan.

According to KEGOC, energy consumption in Kazakhstan has increased by 5% in 2018 and reached 103.2 billion kWh. Growth was observed in all areas of UES. In Northern zone of UES, consumption increased by 5%, in Western zone – by 8%, and in Southern zone – by 7%. There was an increase in consumption in almost all large industrial consumers.

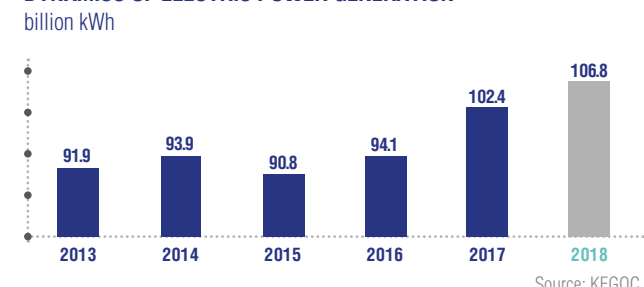
To date, there is no shortage of power and capacity in the country's UES and available power reserves will cover increasing demand in mid-term perspective: Kazakhstan is a net exporter of electricity with net power flows of 3.6 billion kWh in 2018.

CONSUMER PRICE INDEX



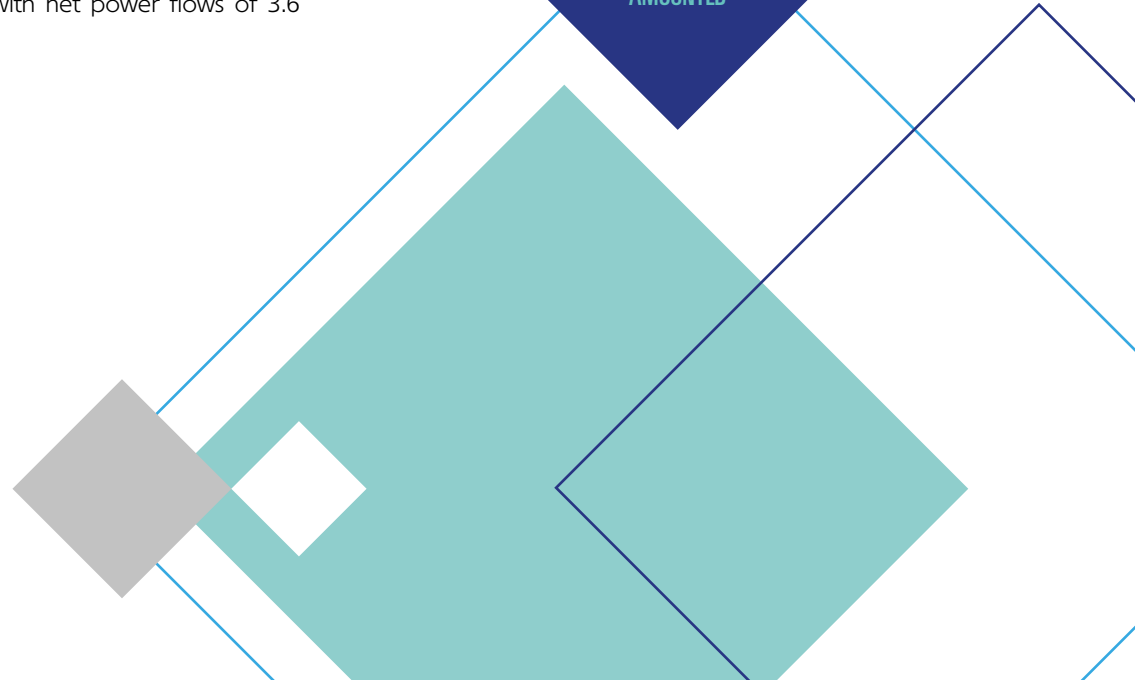
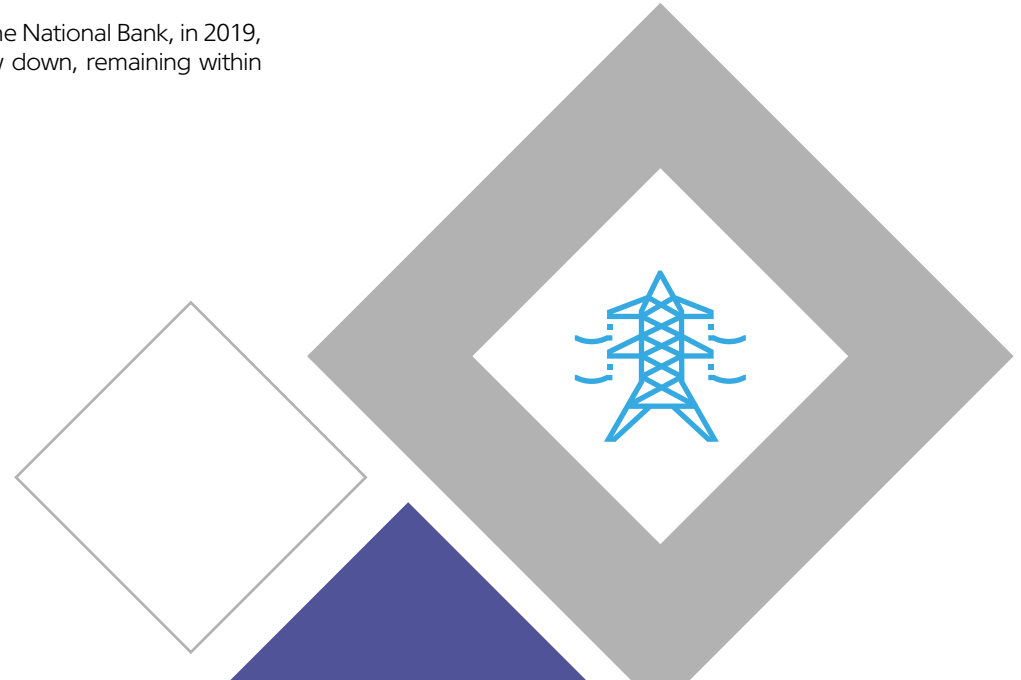
Source: National Bank of the Republic of Kazakhstan

DYNAMICS OF ELECTRIC POWER GENERATION



Source: KEGOC

106,798
million kW
IN 2018, POWER GENERATION IN KAZAKHSTAN AMOUNTED

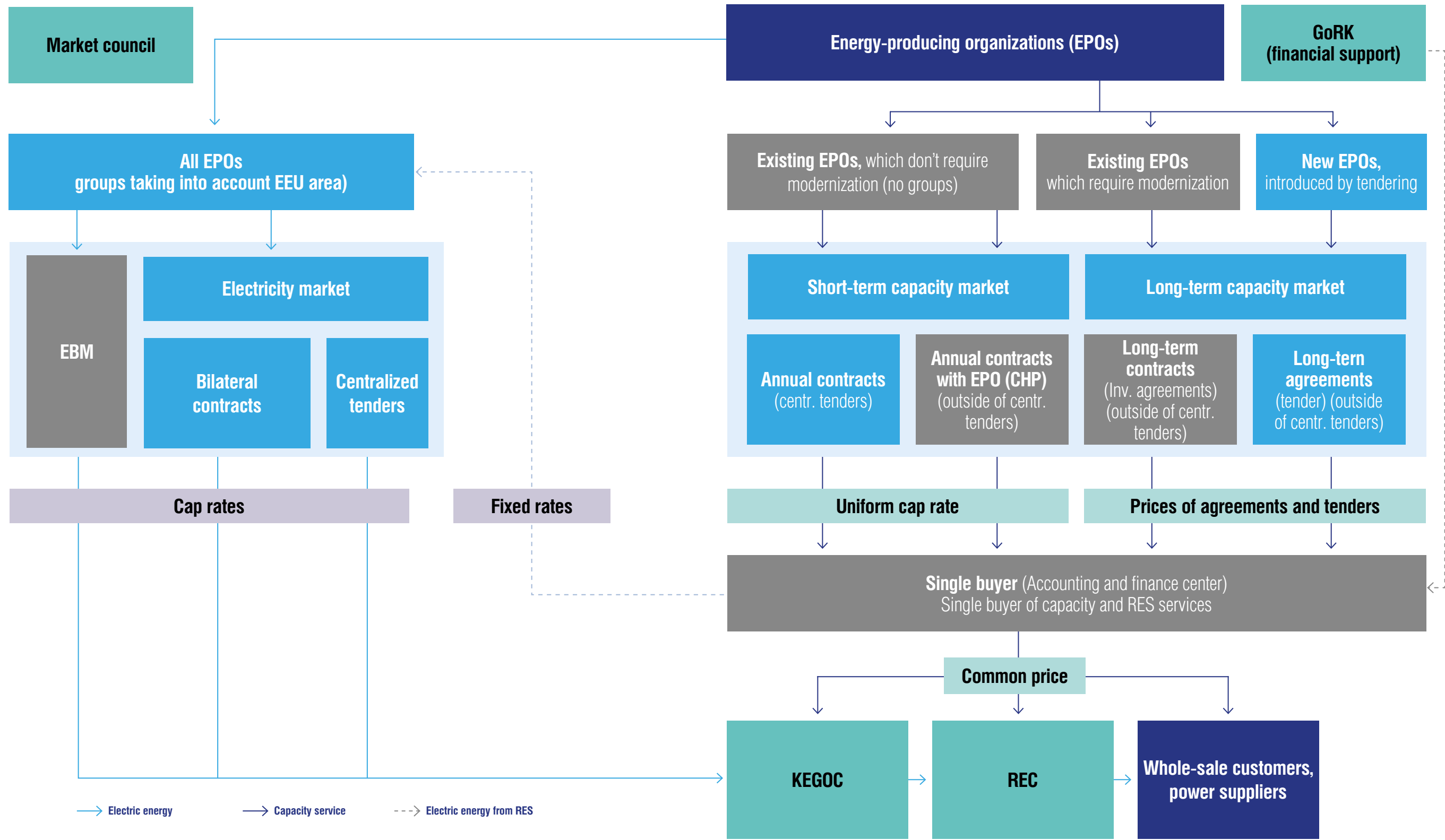


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Industry outlook

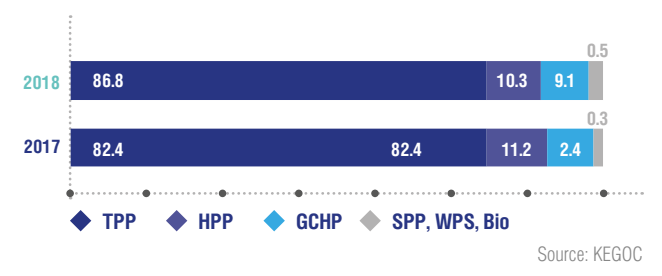
Introduction of capacity market from January 1, 2019 had a positive impact on country's entire industry. This is due to the fact that energy-producing organizations are now able to conclude off-take contracts for "capacity" within capacity market, and as a consequence, to raise investments in the same or greater volume without significant increase in ultimate electric power price for consumers.

Capacity market not only creates conditions for cash inflow in industry, but also "disciplines" all participants of capacity market: stations willing to earn income on capacity market are required to keep their capacities in readiness on a continuous basis, to carry out repairs, modernization or reconstruction in a timely manner. This has a positive impact on reliability of the entire power system, both in the short and long term.

These opportunities of capacity market make the company's business more attractive from an investment point of view. And this is natural, because to increase the investment attractiveness of energy industry in the framework of the 50th and 52nd steps of the Nation Plan "100 concrete steps", reforms were made in the republic's electricity market in 2015.

KUS has already signed one off take contract in this market with a Single buyer, effective till 2023, which allowed increasing the guarantee of repayment of loans raised for implementation of 2009–2015 investment program, and plans to conclude several such long-term contracts for modernization of its assets in 2020.

STRUCTURE OF ELECTRIC POWER OUTPUT IN KAZAKHSTAN BY TYPES OF ELECTRIC POWER SOURCES, billion kWh



Bulk generation by large energy-producing organizations, million kWh

No.	Name	2018	Share in RK, %
1	Samruk-Energo JSC	31,703.10	30
2	ERG	19,119.00	18
3	CAEPCO	7,025.70	7
4	Kazakhmys Energy LLP	6,437.00	6
5	KUS LLP	6,376.80	6
6	Oil and gas companies	5,285.80	5
7	Kazzinc LLP	3,271.60	3
8	Arcelor Mittal JSC	2,396.90	2
9	Zhambylskaya GRES JSC	1,792.40	2
Total for RK		106,797.80	100

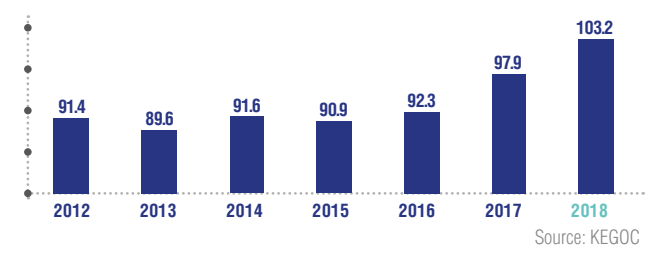
Business climate

Tariffs for transfer and sale of electricity are regulated by the Committee for Regulation of Natural Monopolies, Protection of Competition and Consumer Rights (CRNM and CP). An important external condition for doing business for the Company is the level of tariffs for products sold.

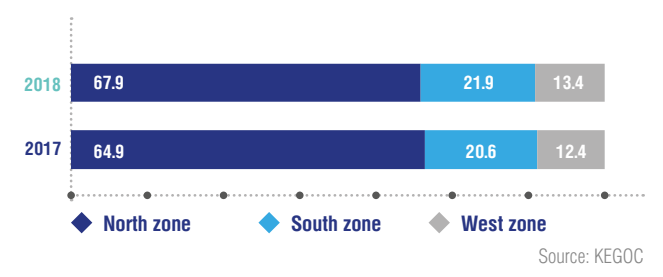
Despite the annual growth in ultimate electricity prices for consumers, tariffs in the housing sector of the Republic of Kazakhstan, including electricity and heat, remain among the lowest compared to CIS countries, Europe and America. Thus, cost of electricity in Kazakhstan in 2018 amounted to 0.03 US cents per kWh, as in Uzbekistan and Ukraine, while in Belarus – 0.06 US cents, in Russia – 0.07 US cents, in England – 0.17 US cents, in France – 0.19 US cents, in Germany – 0.35 US cents. Cost of heat supply in Kazakhstan is 6.53 US cents per Gcal, while in Belarus – 8.23 US cents, in Uzbekistan – 9.73 US cents, in Kyrgyzstan – 11.35 US cents, in Russia – 22.56 US cents, in Ukraine – 39.69 US cents, in England – 71.25 US cents, in Germany – 83.3 US cents, in France – 90.6 US cents.

State's obligation to provide subjects of natural monopoly with economically reasonable tariff is secured in legislation. In accordance with new law of the Republic of Kazakhstan "On natural monopolies", adopted on December 27, 2018, the tariff should be set for natural monopoly entities in such a way as to ensure recovery of costs for provision of regulated services and receipt of profit directed to development and effective functioning of natural monopoly entity.

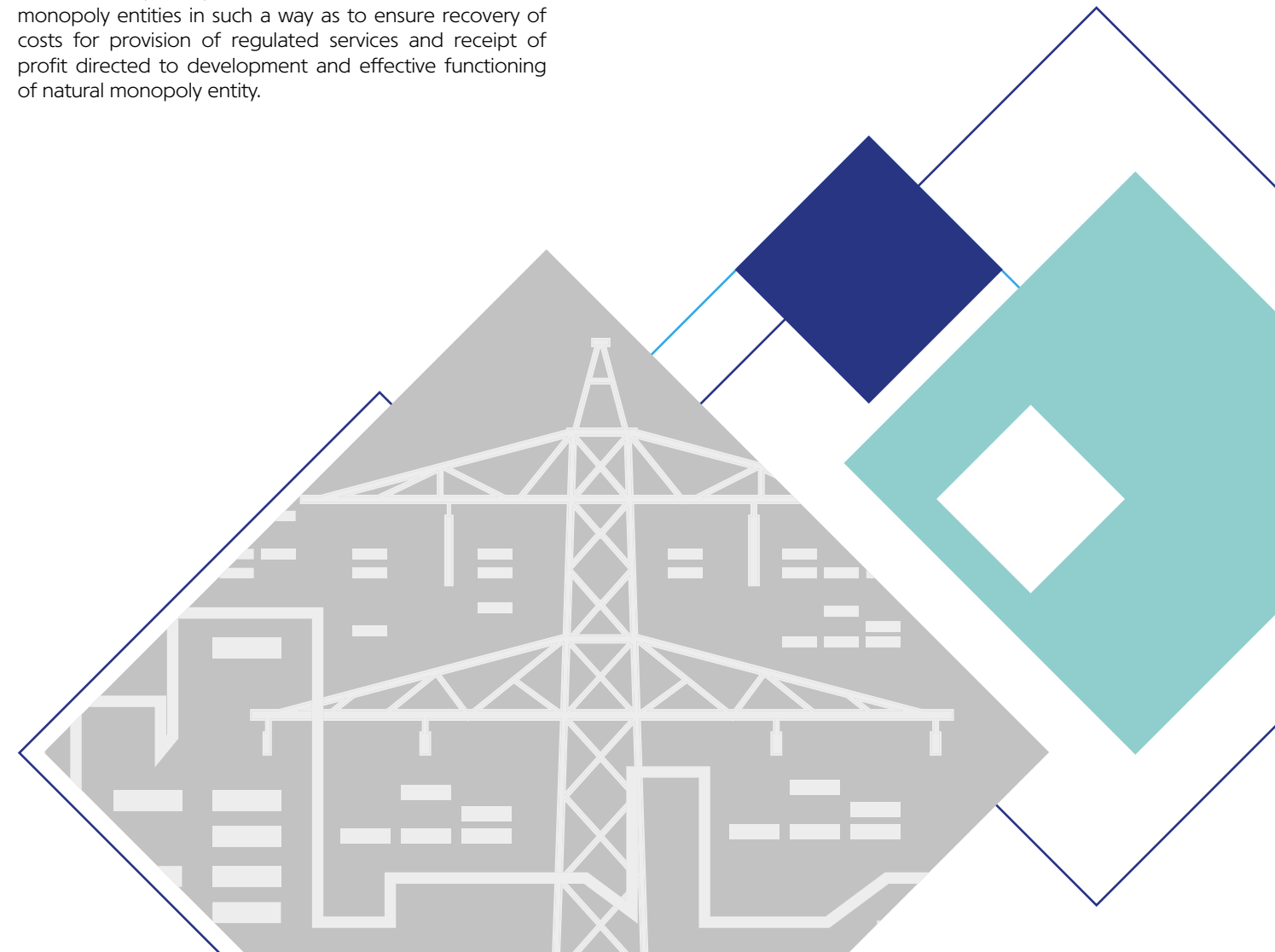
DYNAMICS OF ELECTRIC POWER CONSUMPTION, billion kWh



STRUCTURE OF ELECTRIC POWER CONSUMPTION, billion kWh



Capacity market not only creates conditions for cash inflow in industry, but also "disciplines" all participants of capacity market: stations willing to earn income on capacity market are required to keep their capacities in readiness on a continuous basis, to carry out repairs, modernization or reconstruction in a timely manner. This has a positive impact on reliability of the entire power system, both in the short and long term.



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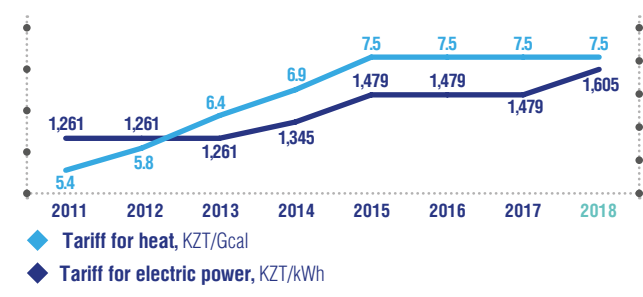
Subsidiary organizations tariffs

In 2018, tariffs for electric power and heat of Karaganda EnergoCenter LLP (KEC) have not changed compared to 2017. Tariffs for heat are set for the company until 2019, and tariff for electric power has changed in 2019 due to introduction of capacity market. Cap tariff for electric power for 2019 was approved at the level of 5.88 KZT/kWh, and for capacity – the price of service for maintaining availability of electric power realized within framework of centralized capacity trades was 419 thousand tenge/MW per month. Technological minimum will be realized at a single marginal price of 590 thousand tenge/MW per month. Also, KEC concluded an individual agreement with authorized body for 90.1 MW at the rate of 5,223 thousand tenge/MW per month.

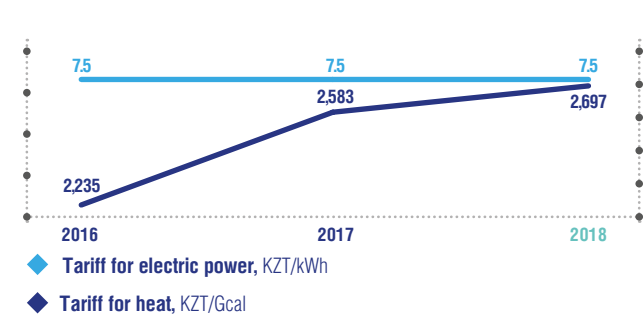
Tariffs for electric power of Ust-Kamenogorsk CHPP LLP (UK CHPP) in 2018 have not changed compared to the 2017 year. Tariffs for power are set for the company until 2018. However from 2019 tariffs has changed due to introduction of electrical capacity market. Thus, cap tariff for electricity amounted to 5.69 tenge/kWh. The price of service for maintaining availability of electric power realized within the framework of centralized capacity trades amounted to 515 thousand KZT/MW per month. Technological minimum will be realized at single marginal price of 590 thousand KZT/MW per month.

Tariff for heat of UK CHPP increased by 4.4% in 2018 compared to 2017. Tariffs for heat are established for the Company until 2020. From January 1, 2019, according to the Order of the Head of the East-Kazakhstan Department of Committee for regulation of natural monopolies and protection of competition of the Ministry of National Economy of the Republic of Kazakhstan, the tariff for heat production was reduced from 2,648 to 2,603 KZT/Gcal.

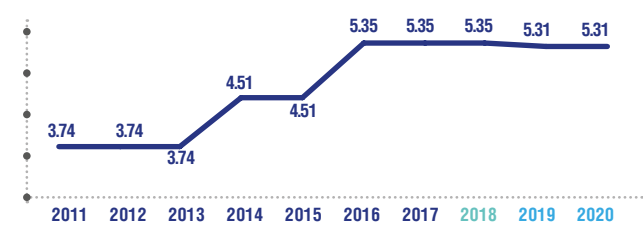
TARIFFS FOR HEAT AND ELECTRIC POWER KEC



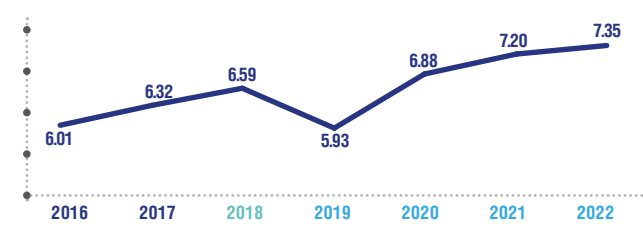
TARIFFS FOR HEAT AND ELECTRIC POWER OF UK CHPP



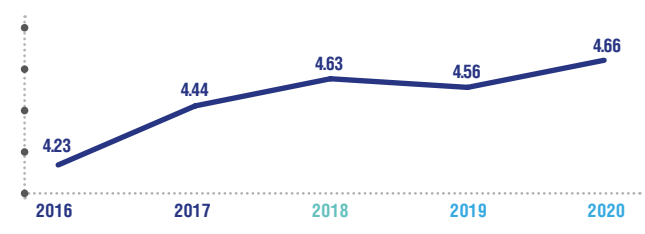
TARIFF OF KZH FOR TRANSMISSION OF ELECTRIC POWER



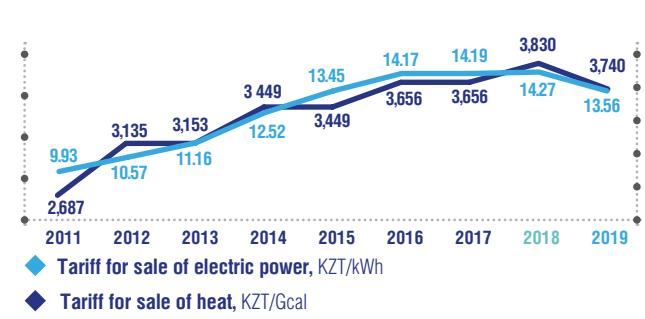
TARIFF OF OZHT FOR ELECTRIC POWER TRANSMISSION



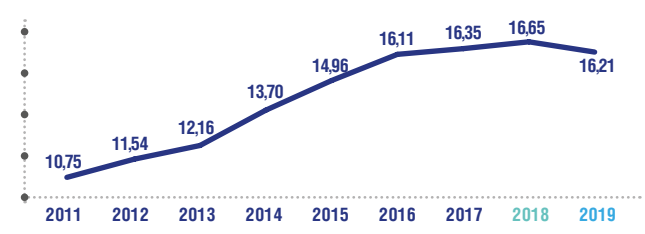
TARIFF OF MRENC FOR ELECTRIC POWER TRANSMISSION



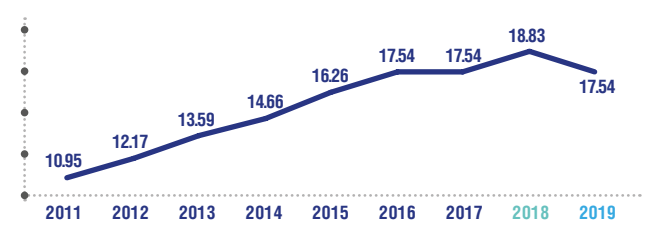
TARIFF OF KZHS FOR HEAT AND ELECTRIC POWER



TARIFF OF RSC FOR ELECTRIC POWER



TARIFF OF EP FOR ELECTRIC POWER



The average tariff for transmission of electric power of Karagandy Zaryk LLP (KZh) for 5 years was approved at the level of 5.35 KZT/kWh, however, according to the Order of the Head of the Karagnda Region 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, decrease of tariff to 5.31 KZT/kWh was approved from January 2019.

Tariff for transmission of electric power of Ontustik Zharyk Tranzit LLP (OZht) increased by 4.4% in 2018 compared to 2017. Tariffs are established for the company until 2022, according to the results of seven years, the growth will be 122%.

Average daily rate of electric power transmission and distribution of Mangistau Regional Electricity Network Company JSC (MRENC) for 2018 amounted to 4.63 KZT/kWh. At the same time, there was 4.3% increase compared to 2017. At the end of five years, the tariff will increase by 110%.

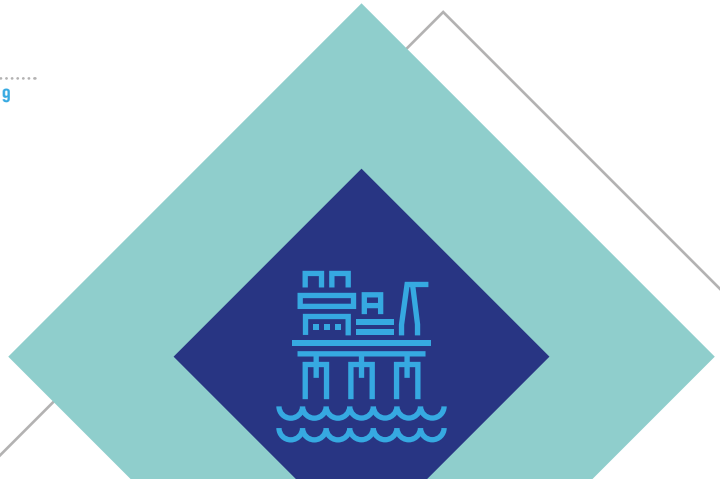
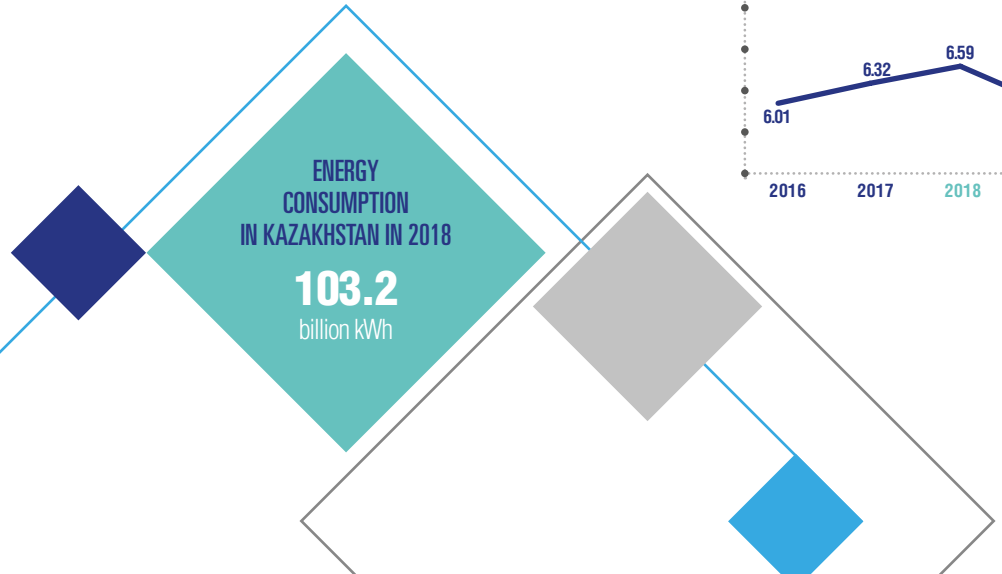
Tariff for electric power supplied by Karagandy ZhyluSbyt LLP (KZhS) has increased by 0.6% in 2018 compared to 2017. From January 1, 2019, KZhS filed for a reduction in tariff for electric power from 14.27 to 13.56 KZT/kWh due to reduction in cap tariffs of energy-producing and energy transmission organizations.

The tariff for heat output has increased by 4.8% in 2018 compared to 2017. Tariff reduction in 2019 is associated with reduction in the tariff for production and transmission of heat energy.

Tariff for transmission of electric power of Raschetnyi servisnyi center LLP (RSC) increased by 1.8% in 2018 compared to 2017. A slight decrease in 2019 is due to a decrease in selling prices for electricity from energy-producing organizations and for the transmission service from power grid enterprises.

Due to the fact that Ontustik Zharyk LLP and Energopotok LLP merged in 2018, there was only Energopotok LLP which actually operated in 2018, so the dynamics of tariffs of this organization was considered.

Tariff for electric power of Energopotok LLP has increased by 7.3% in 2018 compared to 2017. Tariff reduction in 2019 is associated with a decrease in cost of electricity from power plants and cost of electricity transmission through networks.



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Operational results

Capacities

In 2018, Group's production capacities represent a combination of power and heat generation sources, as well as energy transmission networks, heating plants and substations

Generation:

- ◆ installed electric power capacity of sources – 1,074.5 MW, available – 864.3 MW;
- ◆ installed heat capacity of sources – 2,770.7 Gcal/h, located – 2,194.5 Gcal/h.

Transmission and distribution:

- ◆ length of air lines 0.4–220 kV – 33,185 km;
- ◆ length of cable lines 0.4–110 kV – 2,377 km;
- ◆ number of substations – 418 units.

Generation

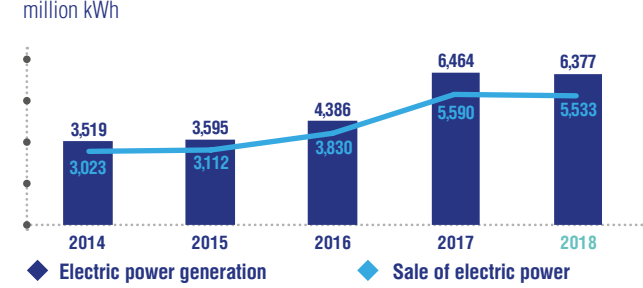
In 2018 power generation was 6,377 million kWh. There was an increase in generation of Karaganda CHPP-3 and Ust-Kamenogorsk CHPP, compared to 2017. Total volume of electric power generated by Group's stations is below the level of 2017 due to the sale of Sogrinsk CHPP. Sales of electricity by stations amounted to 5,533 million kWh, which is also lower than last year's figures due to the sale of the Sogrinsk CHPP.

In 2018, heat generation was 5,868 thousand Gcal. Total heat generation decreased due to sale of Sogrinsk CHPP. Sales of heat by the Group's stations amounted to 5,734 thousand Gcal.

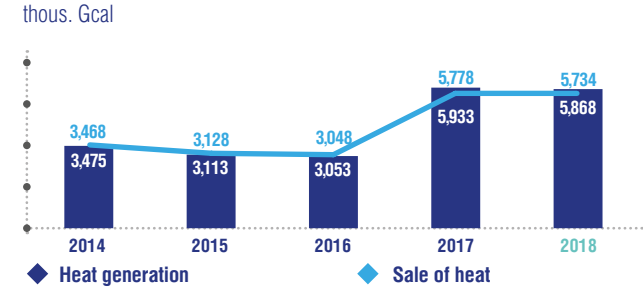
Specific consumption of reference fuel for supply of heat and electric power remained at the level of 2017. In addition, in 2018, there was not a single failure of the 1st degree and accident, and the number of failures of the 2nd degree remained at the level of 2017.

For Karaganda Energocenter LLP, a total of 40 contracts for supply of electric power were signed.

ELECTRIC POWER GENERATION AND SALE
million kWh



HEAT GENERATION AND SALE
thous. Gcal



1,074.5 MW

INSTALLED ELECTRIC POWER CAPACITY OF SOURCES

Major customers in 2018

Karaganda Energocenter LLP

No.	Name and location of consumers	Volume of electric power sold		Share in total electricity sales, %
		thousand kWh	thous KZT	
1	KaragandyZhyluSbyt LLP	1,094,511	8,208,834	27.22
2	Karaganda Energosbyt LLP	888,180	6,661,353	22.09
3	Karagandy Zharyk LLP	309,495	2,321,214	7.7
4	Energopotok LLP	288,255	2,161,910	7.17
5	Raschetnyi servisnyi center LLP	221,028	1,657,709	5.5
6	Karagandy Su LLP	75,932	569,492	1.89
7	Teplotransit Karaganda LLP	65,301	489,755	1.62
8	Energosnab 21 LLP	64,912	486,837	1.61
9	Ontustik Zharyk Tranzit LLP	63,039	472,795	1.57
10	Enegrougol 21 LLP	58,693	440,192	1.46
11	Enegrosystem KT LLP	41,773	313,297	1.04
12	Yugenergoimpuls LLP	29,474	221,056	0.73
13	Company Ergo LLP	28,189	211,415	0.7
14	Kazsbytgrupp LLP	19,598	146,983	0.49
15	Garant Energo LLP	11,317	84,878	0.28
16	PSE Gorkomkhoz	9,898	74,238	0.25
	Centralized trades	374,846	2,730,593	9.32
	Прочие	376,242	2,821,818	9.36
Total		4,020,683	30,074,369	100

For Karaganda Energocenter LLP, a total of 40 contracts for supply of electric power were signed.

In 2018 power generation was 6,377 million kWh. There was an increase in generation of Karaganda CHPP-3 and Ust-Kamenogorsk CHPP, compared to 2017. Total volume of electric power generated by Group's stations is below the level of 2017 due to the sale of Sogrinsk CHPP. Sales of electricity by stations amounted to 5,533 million kWh, which is also lower than last year's figures due to the sale of the Sogrinsk CHPP.

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Ust-Kamenogorsk CHPP LLP

No.	Name and location of consumers	Volume of electric power sold		Share in total electricity sales, %
		thousand kWh	thous KZT	
1.	AB Energo LLP (AB Energo)	247,815	1,858,613	16.39
2.	Shygysenergotrade LLP	186,535	1,399,012	12.34
3.	Energopotok LLP	159,230	1,194,225	10.53
4.	EK REC JSC	151,031	1,132,735	9.99
5.	Semeyenergotrade LLP	128,846	966,344	8.52
6.	Karaganda Energosbyt LLP	121,706	912,796	8.05
7.	Energoservice LLP	86,989	652,421	5.75
8.	Energosnab 21 LLP	52,421	393,155	3.47
9.	Shieli Zharygy LLP	47,955	359,661	3.17
10.	Ontustik Zharyk Tranzit LLP	37,778	283,337	2.5
11.	Energopromtechno LLP	34,427	258,205	2.28
12.	Dauletenergo LLP	34,264	256,981	2.27
13.	STEM LLP	30,874	231,552	2.04
14.	Yugenergoimpuls LLP	19,809	148,569	1.31
15.	Vostokenergotrade LLP	19,507	146,301	1.29
16.	Altynenergoservice LLP	15,509	116,318	1.03
17.	Kazsbytrupp LLP	15,008	112,557	0.99
	Прочие	122,404	918,030	8.09
	Total	1,512,108	11,340,812	100

For Ust-Kamenogorsk CHPP, a total of 47 contracts for supply of electric power were signed.

Transmission and distribution

According to results of 2018, Mangistau Regional Electricity Network Company JSC has reduced the number of technological violations by seven cases compared to 2017, total transformer capacity has increased and amounted 2,231.5 MBA at the end of 2018. Total deterioration of fixed assets decreased to 67.6%, regulatory losses decreased by 5%. At the same time, there has been no accidents during this year.

Due to timely and high-quality implementation of repair and investment programs for 2018, in Karagandy Zharyk LLP there was increase in transformer capacity, which amounted to 16,000 kVA, fixed assets depreciation rate has decreased from 71.1% in 2017 to 70.5% in 2018, and normative losses has decreased by 5.7% compared to 2017.

According to the results of 2018, Ontustik Zharyk Tranzit LLP has reduced the number of technological violations by 13 cases, as of December 31, 2018 total transformer

capacity was 3,657 MVA. Fixed assets depreciation rate has decreased by 1.8%.

Volumes of electric power transmission in 2018

Name	2018	
	thousand kWh	thousand KZT
Karagandy Zharyk LLP	3,121,416	16,699,576
Ontustik Zharyk Tranzit LLP	2,627,136	17,327,851
Mangistau Regional Electricity Network Company JSC	2,602,191	11,899,943

Major consumers in 2018

Karagandy Zharyk LLP

Major customers and electricity transmission in 2018

Name of the customer	Volume of sales, thousand kWh
KaragandyZhyluSbyt LLP	1,094,472
ArcelorMittal Temirtau JSC	724,663
AB Energo LLP	233,769
Raschetnyi servisnyi center LLP	219,492
Karaganda Energosbyt LLP	176,209
TEMK JSC	132,934
Branch of Corporation Kazakhmys LLP , PO Karagandatsvetmet	95,161
Teplotransit Karaganda LLP	65,301
Energougol XXI LLP	58,692
Karagandy Su LLP	49,031
Branch "Satpayev Channel"	36,940
Other consumers	234,752

Ontustik Zharyk Tranzit LLP

Major customers and electricity transmission in 2018

Name of the customer	Volume of sales, thousand kWh
Energopotok LLP	2,191,814
Yugenergoimpuls LLP	128,988
Garant Energo LLP	122,349
Energosnab XXI LLP	94,637
Kazsbytrupp LLP	51,942
MUS KvatZhyluOrtalyk-3	31,751
3-Energoortalyk JSC	4,167
NC Kazakhstan Temir Zholy JSC	957
Branch Shymkent MPN, KEGOC JSC	412
Shar GES JSC	78
PC Yuzhpolimetal JSC	40

Mangistau Regional Electricity Network Company JSC

Major customers and electricity transmission in 2018

Name of the customer	Volume of sales, thousand kWh
Ozenmunaigas JSC	774,667
Mangistaumunaigas JSC	279,129
Karazhanbasmunai JSC	254,910
Kazakh gas processing plant LLP	235,989
Branch of company Buzachi Operating Ltd	140,795
Karakudukmunay LLP	125,618
WB of KazTransOil JSC	64,032
JSC National company Aktau international sea commercial port	4,759
Other consumers	151,190
Mangistau Zharyk LLP, legal entities	182,168
Mangistau Zharyk LLP, population	60,312
MUS, providing services for transmission and distribution of electric power, Electrzhuileri LLP	328,621

3,657 MVA

THE TOTAL TRANSFORMER CAPACITY OF ONTUSTIK ZHARYK TRANZIT LLP IN 2018

Investment projects

Starting from 2010 and through 2018, Group invested more than 200 billion KZT, which led to a significant improvement in efficiency and reliability of the equipment. Over this period, Installed capacity factor has increased from 0.48% to 0.76% (which is much higher than the average coefficient in the country).

In 2018, Volume of investments of **Karaganda EnergoCenter LLP** amounted to about 3.8 billion KZT. Karaganda Energo Center LLP is continuing modernization and reconstruction of its facilities. In 2018, major repairs were carried out with replacement of worn-out units and mechanisms on turbine units of st. No. 3, 5. In addition, the second stage of project to increase the dams of 3rd section of ash disposal area No. 2 was completed.

Volume of investment of **UST-Kamenogorsk CHPP LLP** amounted to 2 billion KZT. Ust-Kamenogorsk CHPP is continuing the implementation of project for expansion of the cooling tower with an increase in productivity up to 32,000 m³/h. Boiler unit No. 15 was reconstructed. Reconstruction of existing ash dump area was started, as well as design of a new ash dump for storage of ash and slag waste.

Volume of investments of **Mangistau Regional Electricity Network Company JSC** amounted to 6.3 billion KZT in 2018. In the course of implementation of investment program, the following major activities were implemented:

- ◆ Construction of power line 220 kV Aktau – Karazhanbas with installation of autotransformer 1x150MVA at tie distribution substation 220/110/35/10 kV “Karazhanbas”.
- ◆ Construction of power line 110 kV from SS 220 kV “Uzen” to 110/35/6 kV “Plato” (length 1x18,7 km) with the replacement of transformer 1x40MVA;
- ◆ Modernization (reconstruction) of indoor switchgear 6 kV substation of 110/6–6 kV “Promzona”;
- ◆ Modernization (reconstruction) of outdoor switchgear 110 kV of SS 220/110/10 kV “Uzen”.

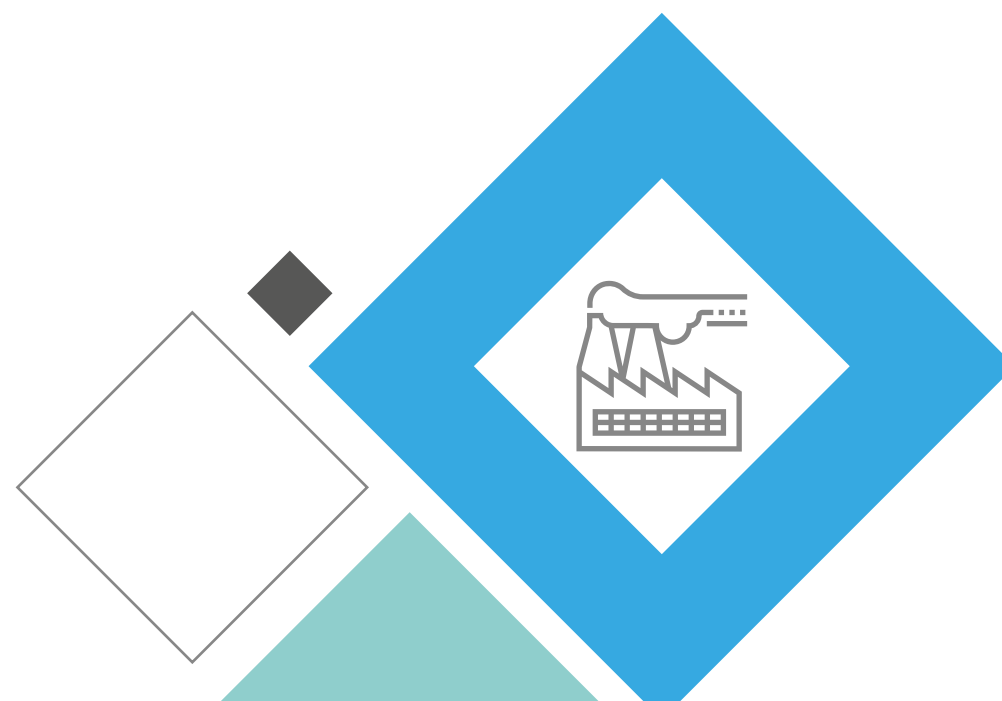
In 2018, volume of investments of **Ontustik Zharyk Tranzit LLP** amounted to about 6.3 billion KZT. In the course of implementation of investment program, the following major activities were implemented:

- ◆ construction of 0.4–10 kV networks in Kzyl-su, Artel, K. Marx, Shymkent and the village Akbastau (Sharbulak) of Kazygurt area;
- ◆ reconstruction of about 100 km of 110 kV HV line and 17 km of 35 kV HV line. In addition, defective and worn-out wooden support were replaced for reinforced concrete;
- ◆ reconstruction of a number of SS 35–110 kV and PTS, TS, DS 10/0,4 kV (161 pcs.);
- ◆ commissioning of 0,4–10 kV power line (SIVV) – 63.62 km, EPTS 10/0,4 kV – 25 pcs.

In 2018, volume of investments of **Karagandy Zharyk LLP** amounted to 5.6 billion KZT. In the course of implementation of investment program, the following major activities were implemented:

- ◆ reconstruction of TS (CTS) with replacement of power transformers – 138 pcs. Reduction of no-load losses by 160,834 kWh;
- ◆ technical modernization of equipment 6(10)–35–110 kV at 29 substations and major repairs at 209 km of 35–110 kV HV lines. 0.6% decrease in total physical depreciation.

Implementation of these measures has reduced the normative technical losses, as well as improved the reliability of power supply in regions covered.



Financial performances

Income and expense analysis

Basic data of income statement, million KZT	2018	2017*	2016
Revenue	128,639.0	97,337.0	82,476.9
Prime cost	-91,928.6	-66,087.7	-51,452.4
Gross profit	36,710.4	31,249.4	31,024.4
Administrative expenses	-8,537.2	-6,388.7	-5,870.1
Sale expenses	-2,664.9	-2,148.1	-1,965.0
Financial expenses	-8,631.7	-4,812.5	-2,102.5
Financial income	3,687.7	652.8	355.2
Foreign exchange loss	-3,316.6	-30.3	-103.7
Other income	676.7	18,941.4	146.1
Profit before tax	17,924.4	37,463.9	21,484.5
Income tax expense	-4,324.8	-3,973.1	-4,402.3
Net profit	13,599.6	33,490.8	17,082.3

*recalculated indicators

In 2018, Company’s revenue has increased by 32% to the level of year 2017 and amounted to 128.6 billion KZT. Revenues from sale of electric power, which accounts for more than 67% of Company’s revenues increased by 23% in 2018 – indicator exceeded 86.6 billion KZT. At the same time, income from electric power transmission almost doubled, and reached 24.4 billion KZT at the end of the year. Increase in revenues from electric power transmission is mainly due to joining of MRENC JSC as a subsidiary. Revenue from electric power transmission by MRENC JSC amounted to 11.9 billion KZT in 2018. Revenues from sale of heat has increased by 25% to 16.98 billion KZT in 2018.

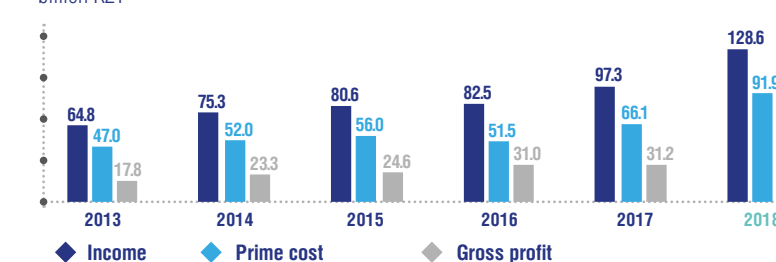
Prime cost has increased by 39% in 2018 following the increase in operating activities, as well as due to changes in the structure of the Group. In particular, expenses for

materials (44% in the cost structure) have increased by 59% to 40.6 billion KZT. Costs for electric power, heat transmission services and chemically treated water services (16.9%) have increased by 21% to 15.6 billion KZT.

However, the gross profit exceeded 36.7 billion KZT in 2018, i.e. 17%, or 5.5 billion KZT higher than in 2017.

In 2017, there was an accrued income from profitable acquisition, which amounted to 18.6 billion KZT and had a significant impact on financial result. In 2018, due to lack of this income, net profit shows a decrease and returned to moderate values, amounting to 13.6 billion KZT at the end of the year.

DYNAMICS OF INCOME, PRIME COST AND GROSS PROFIT
billion KZT



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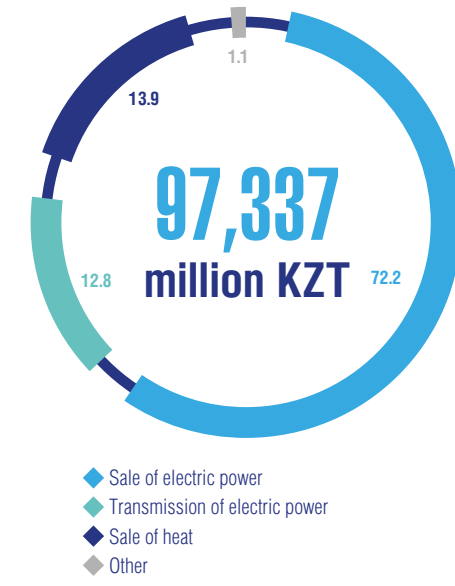
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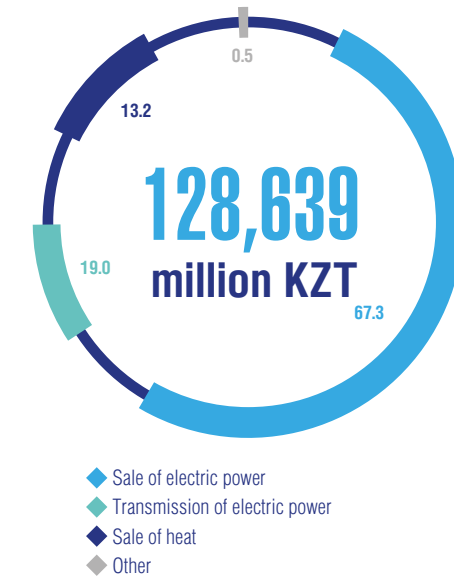
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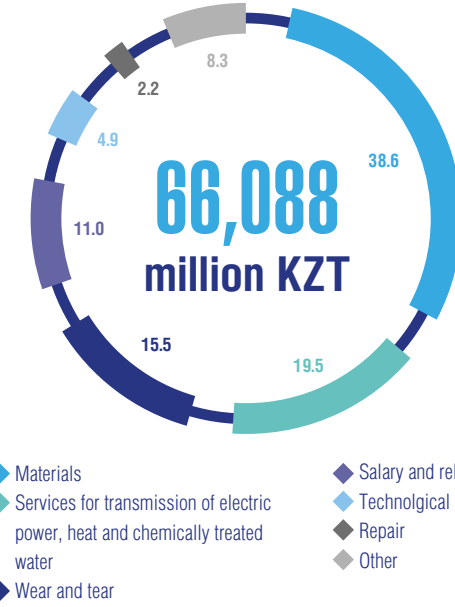
Structure of incomes, 2017



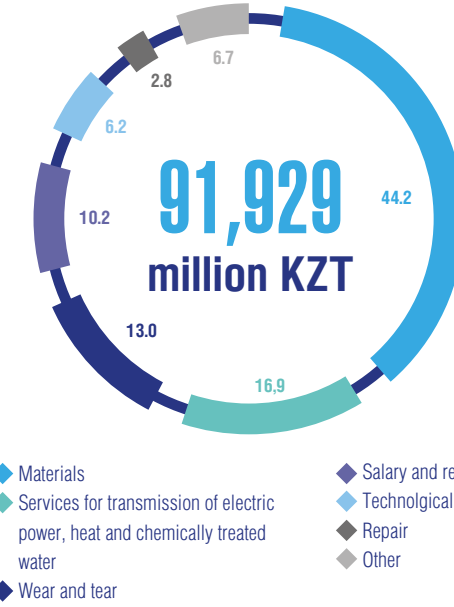
Structure of incomes, 2018



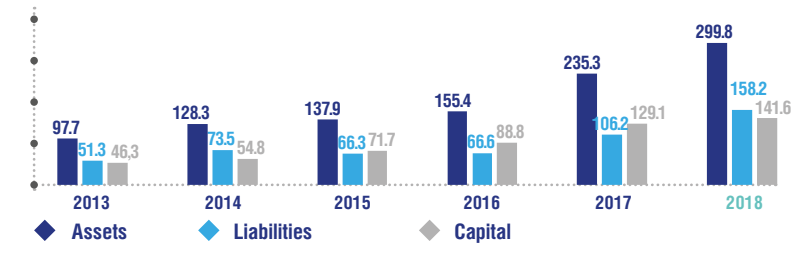
Structure of prime cost, 2017



Structure of prime cost, 2018



DYNAMICS OF ASSETS AND LIABILITIES
billion KZT



Balance analysis

Basic balance sheet data, million KZT	2018	2017*	2016
Assets	299,815.2	235,307.8	155,396.2
<i>Long-term assets</i>	276,553.2	207,853.3	133,467.6
Fixed assets	215,004.1	203,751.9	131,353.2
Loans granted to related parties	58,511.3	-	-
Long-term advances paid	1,905.7	3,152.1	1,187.0
Other	1,132.0	949.3	927.4
<i>Current assets</i>	23,262.0	27,454.6	21,928.6
Inventories	4,194.2	3,786.1	2,437.9
Trade receivables	10,082.6	9,958.2	7,690.4
Cash and cash equivalents	5,458.6	6,444.5	2,358.9
Other	3,526.5	7,265.7	9,441.4
Liabilities	158,247.7	106,203.1	66,646.0
<i>Long term liabilities</i>	125,833.0	74,162.3	43,604.5
Bank loans	92,414.6	41,918.8	25,107.9
Deferred tax liability	30,361.3	28,913.8	18,384.5
Other	3,057.2	3,329.7	112.0
<i>Current liabilities</i>	32,414.7	32,040.8	23,041.6
Trade payables	8,492.9	4,911.8	4,817.4
Loans and bonds	14,055.7	15,854.0	11,949.6
Other	9,866.0	11,275.0	6,274.6
Capital	141,567.5	129,104.8	88,750.2
Authorized capital	11,636.4	11,636.4	11,636.4
Additional paid-in capital	9,239.1	9,239.1	9,239.1
Exchange difference reserve	265.2	-	-
Retained earnings	109,479.6	96,714.4	67,874.6
Non-controlling interests	10,947.2	11,514.8	-

*recalculated indicators

In 2018, Group's assets have increased by 27%, or 64.5 billion KZT. Growth was primarily due to an increase in the volume of long-term assets by 33% to 276.6 billion KZT (92% in balance sheet structure), while current assets decreased by 15% to 23.3 billion KZT (8%). Growth in long-term assets is associated with an increase in fixed assets by 6%, or 11.3 billion KZT, as well as loans granted to related parties, which amounted to 58.5 billion KZT at the end of the year. In 2018, fixed assets acquisition is mainly represented by modernization and reconstruction of electric power production, transmission and distribution equipment.

In 2018, Group's liabilities have increased by 49%, or by 52 billion KZT. First of all, growth is associated with an increase in volume of long-term bank loans by 50.5 billion KZT – at the end of the year their volume reached 92.4 billion KZT. Liabilities account for 53% in balance sheet structure. At the same time, 80% of liabilities are long-term liabilities.

Capital has increased by 10% or 12.5 billion KZT in 2018. Growth was due to an increase in retained earnings by 13%, or 12.8 billion KZT.

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Analysis of key ratios

Key performance indicators*	2018	2017	2016
Liquidity ratio			
Current ratio	0.64	0.65	0.57
Quick ratio	0.51	0.54	0.47
Profitability ratios			
Net profit margin, %	10.6	34.4	20.7
Gross profit margin, %	28.5	32.1	37.6
Basic earning power	7.6%	17.7%	15.0%
Return on assets	4.5%	14.2%	11.0%
Return on equity	9.6%	25.9%	19.2%
EBITDA, in billion tenge	35.10	52.09	30.38
EBITDA margin	27.3%	53.5%	36.8%
Capital structure ratios			
Capital adequacy ratio	47.2%	54.9%	57.1%
Financial leverage ratio	65.3%	32.5%	28.3%
Efficiency ratio			
Inventory turnover ratio	23.04	21.24	20.11
Loan portfolio turnover period (in days)	28.43	33.09	32.48
Fixed asset turnover ratio	0.60	0.48	0.63
Asset turnover ratio	0.43	0.41	0.53
Interest coverage ratio	2.65	8.65	11.05
ROCE Return On Capital Employed	8.55%	20.53%	17.55%

*Calculation of key indicators:

- ◆ Current ratio is calculated as the ratio of current assets (excluding the prepayment for corporate income tax and other current assets) to short-term liabilities.
- ◆ Quick liquidity ratio is calculated by dividing liquid assets (excluding the prepayment for corporate income tax and other current assets) for short-term liabilities.
- ◆ Basic earning power = EBIT / assets
- ◆ Return on assets = net profit / asset.
- ◆ Return on equity = net profit / equity.
- ◆ Capital adequacy ratio = capital/assets.
- ◆ Financial leverage ratio = long-term liabilities/equity
- ◆ Interest coverage ratio = EBIT/interest due.
- ◆ Return on capital employed = EBIT/(equity + long-term liabilities).

Company continues to maintain a high level of liquidity. In 2018, current liquidity ratio in almost unchanged and was 0.64 and quick liquidity ratio was 0.51.

Company also maintains a high dynamics of gross profit. Gross profit rate was 28.5% in 2018. EBITDA remained at a sufficiently high level – 35.1 billion KZT at the end of 2018. EBITDA margin was 27.3%.

At the same time, decrease in net profit compared to one-time high values of 2017 led to a decrease in net profit margin – 10.6% at the end of 2018. In addition, outstripping growth in main indicators of balance sheet led

to a decrease in profitability, which, however, remain at an acceptable level.

Company maintains a stable balance sheet structure. Capital share in balance sheet structure is 47.2% at the end of 2018. Financial leverage ratio rose to 65.3% in 2018 due to growth in bank loans.

A sufficiently high level of operational efficiency is maintained. Fixed assets turnover ratio was 0.6 in 2018, asset turnover – 0.43.

Plans for 2019

1. Implementation of measures to update the long-term Issuer default rating (IDR) in foreign and national currencies.
2. Activities to attract international strategic partners to implement the Company's long-term development strategy
3. Active promotion of Company's legal interests. Submission of all required Company's draft amendments to legislation for consideration of relevant associations (Atameken, KEA, KAZENERGY) and authorized body.
4. At Karaganda CHPP-1, overhaul of two boilers and turbo generator No. 5 will be conducted. Other equipment will undergo minor repairs.
5. The following activities are planned at Karaganda CHPP-3:
 - ◆ overhaul of boilers of st. 3, 5 with replacement of heating surfaces;
 - ◆ overhaul of turbine unit of st. 4 with replacement of condenser tube bundles;
 - ◆ minor repair of all boiler and turbine units;
 - ◆ implementation of 3rd stage of building of 3rd section of the ash dump area №2.
6. The following activities are planned at Ust-Kamenogorsk CHPP:
 - ◆ replacement of side water wall panels of boiler unit of st. No. 15;
 - ◆ overhaul of boiler unit of st. 13;
 - ◆ overhaul of turbine units of st. 6, 9;
 - ◆ minor repair of all boiler and turbine units;
 - ◆ increase in performance of ventilation cooling towers;
 - ◆ implementation of 2nd stage of reconstruction of ash dump area №3;
 - ◆ implementation of 1st stage of construction of ash dump area №5.
7. Karagandy Zharyk LLP plans the following activities:
 - ◆ reconstruction of outdoor switchgear 220kV substation 220/110/35/10 kV Saran;
 - ◆ design and reconstruction of 110 kV HV line CHPP-3 – Karaganda;
 - ◆ design and reconstruction of 110 kV HV line Karaganda – Noviy gorod;
 - ◆ construction of substation 110/10 kV Tykhonovka;
 - ◆ overhaul of 220, 110 kV HV lines;
 - ◆ construction of a number of auxiliary facilities.
8. Ontustik Zharyk Tranzit LLP plans the following activities:
 - ◆ construction of 10-0. 4 kV lines, substation 110 kV Yassy;
 - ◆ reconstruction of 110 kV HV line, 35 kV HV line, 0,4–6–10 kV HV line, including 0.4 kV HV line using of SIW;
 - ◆ reconstruction of cable lines 6-10-0,4 kV;
 - ◆ reconstruction of 110 kV substation;
 - ◆ reconstruction of DS, SS, PSS 10-6/0.4 kV.
9. Mangistau Regional Electricity Network Company JSC plans the following activities:
 - ◆ construction of power lines 220, 110, 10 kV;
 - ◆ modernization of outdoor switchgear 110 kV at substation 220/110/10 kV;
 - ◆ modernization of indoor switchgear 10 kV, 6 kV;
 - ◆ modernization of SS 35/6 kV, 35/10 kV;
 - ◆ introduction of ASKUE system of upper level;
 - ◆ introduction of SCADA system at SS 110/6 kV, 110/10/6 kV, 110/35/6 kV, 35/10 kV.

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Corporate governance

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Corporate governance principle

The Group considers development of corporate governance as the main factor in improvement of competitiveness and achievement of economical efficiency of the Group.

The most important principles of corporate governance for the Group are:

- ◆ ensuring a balance between influence on adoption of managerial decisions, responsibility for decisions made and interests of a participant in corporate relations;
- ◆ establishment of standards for reasonable and qualified management and proper control;
- ◆ optimization of production structure and maximizing the effective use of the Group's capital;
- ◆ ensuring transparency of the Group's financial and business operations and reliability of reporting indicators;
- ◆ increase of investor confidence, improvement of the investment climate and increase of volumes, improvement of the structure and quality of investments.

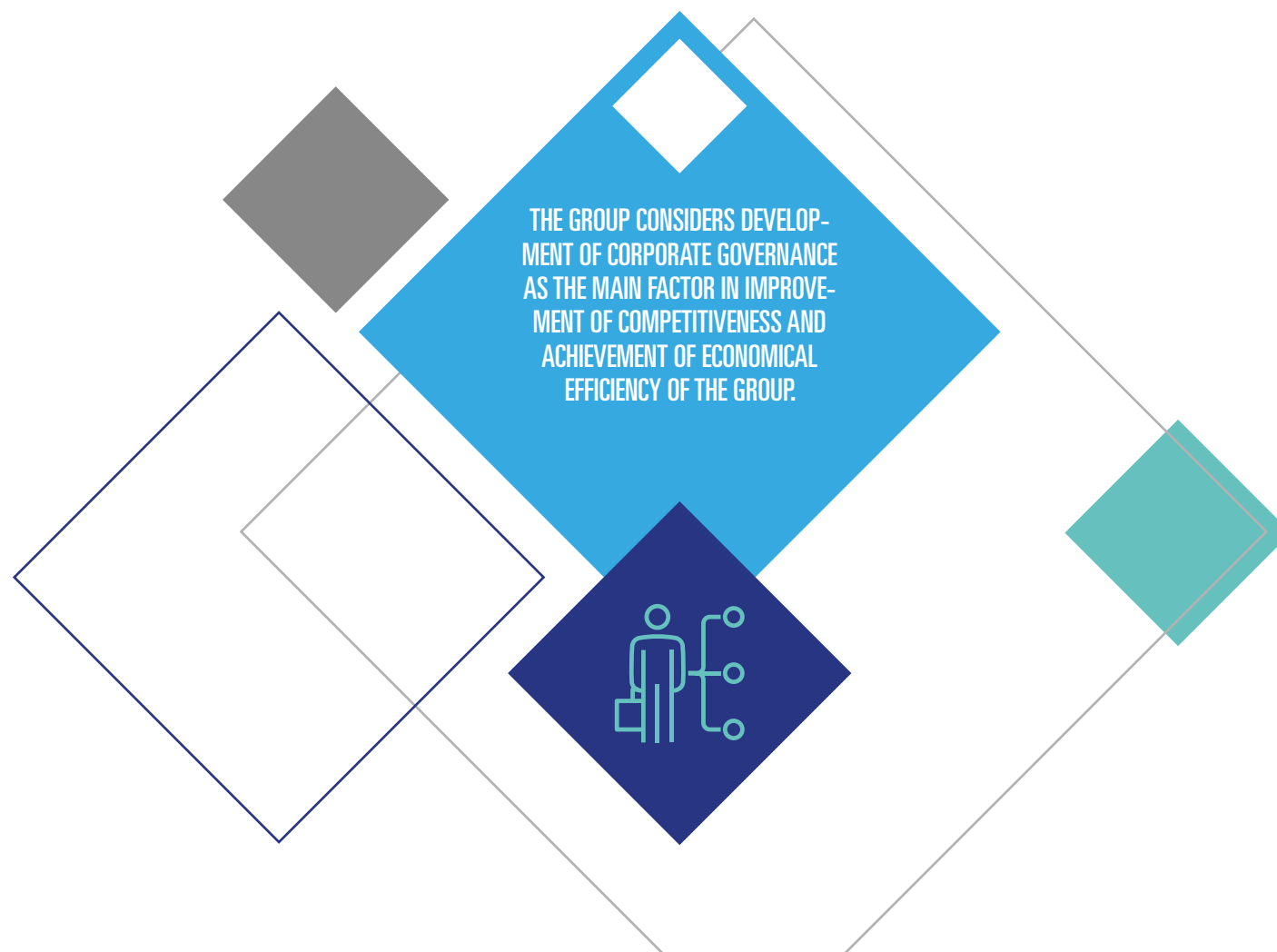
Management structure

The Group's corporate management structure should provide:

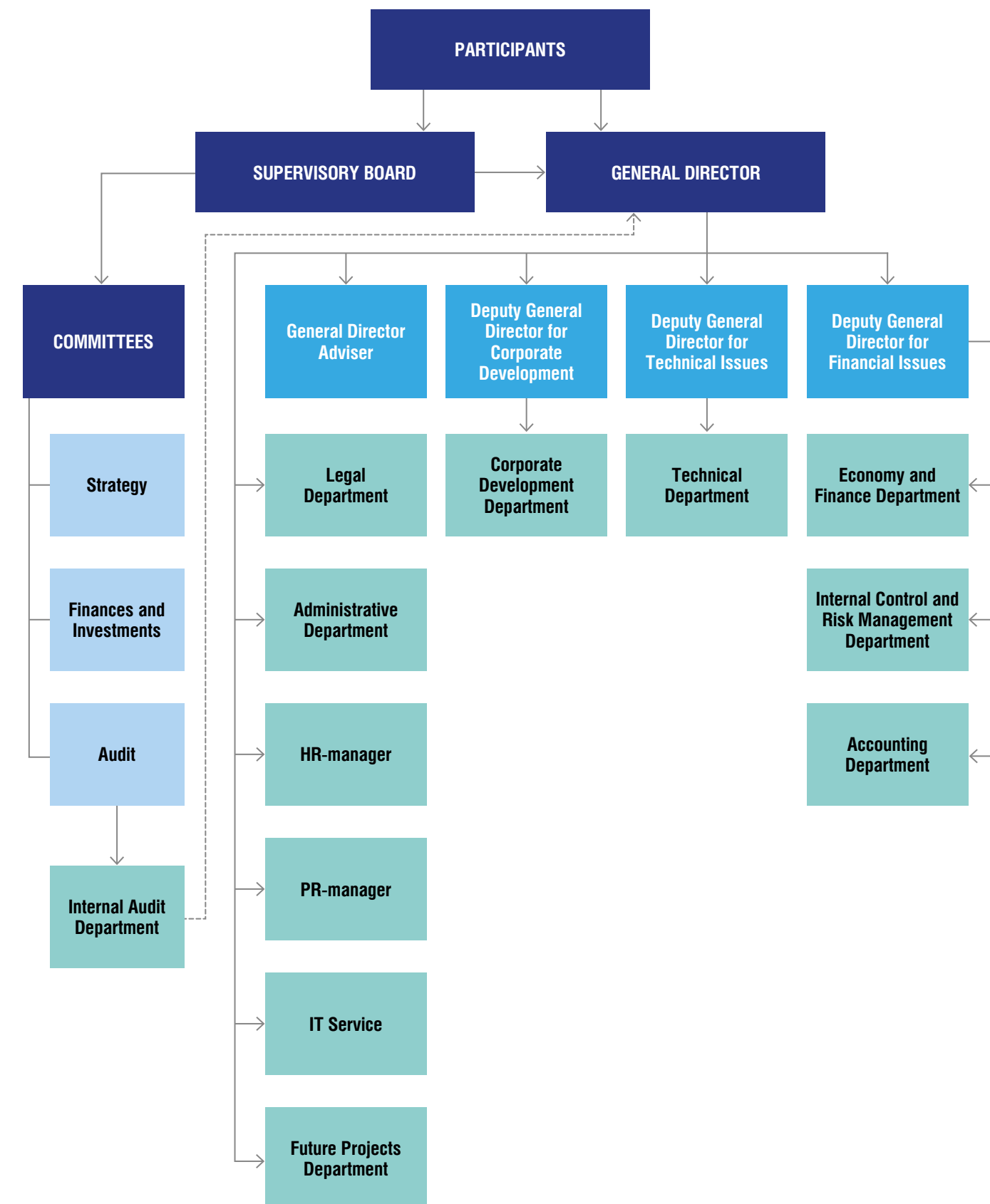
- ◆ protection of participants' rights;
- ◆ recognition of statutory rights of interested parties;
- ◆ timely and accurate disclosure of information on all material issues related to the Company;
- ◆ Supervisory Board's effective control over executive body, as well as its accountability to KUS participants.

The structure of the Company is divided into three blocks: General meeting of participants, Supervisory Board, Executive body.

The general meeting of participants is the supreme body of KUS, which makes decisions on the most important issues of Company activities: changes in the charter, equity capital, brand name, formation of the executive body, early termination of its powers, election or termination of the Supervisory Board, approving financial statements, pledging property of the Company/Group and other.



Corporate governance system in the Company



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Supervisory Board

The Supervisory Board of the Company conducts general management of Company activities, control over activities of the Company's executive body, control over financial and business activities. The exclusive competence of the Supervisory Board includes the following:

- ◆ determination of priority directions of activity and approval of the development strategy, medium-term development plan of the Company, as well as monitoring the implementation of the Company strategy, plans and budgets;
- ◆ making a decision on completion of one or more consecutive transactions for acquisition and/or disposal of the Company's property, the total value of which is 25 percent or more of the total book value of all the fixed assets held by the Group;
- ◆ determination of the Company's production and financial policies in the form of approval of certain financial and production documents of the Company, financial and production/technical norms and standards;
- ◆ monitoring the quality and independence of the external auditor;

- ◆ determination of the amount of payment for external auditor services
- ◆ other matters provided for by internal rules of the Company.

The purpose of the Supervisory Board is to monitor the activities of the Company's executive body, including implementation of Company interests and protecting the rights of participants, establishing the principles and norms of Company's operations, and ensuring understanding and compliance of Company obligations to participants and others. In 2018, the Supervisory Board met two times. The key points that were discussed by the Supervisory Board were:

- ◆ preliminary approval of audited financial statements of the Company and KUS's consolidated financial statements for year 2017;
- ◆ consideration and approval of report on actual financial and economic performances of KUS LLP for the first quarter of 2018.

Composition of the Supervisory Board



Dinmukhamet Idrisov
The Chairman of the Supervisory Board

Born on December 29, 1964.

- ◆ From February 6, 2014 till present – The Chairman of the Supervisory Board of Kazakhstan Utility Systems LLP.
- ◆ From April 1, 2010 till present – The Chairman of the Supervisory Board of Ordabasy Group LLP.



Askar Kanafin
Supervisory Board member, Strategy Committee member

Born on November 27, 1972.

- ◆ From February 6, 2014 till present – Supervisory Board Member of Kazakhstan Utility Systems LLP.
- ◆ From November 1, 2013 till present – Chairman of the Board of Directors of Ordabasy Group LLP.
- ◆ From September 2006 to January 2012 – CEO of Group of companies "Resmi" JSC.
- ◆ From August 1, 2005 to August 31, 2012 – Supervisory Board Member of Innova Investment LLP.
- ◆ From May 3, 2004 to August 31, 2012 – Member of the Board of Directors of Investment Financial House "Resmi" JSC.



Assiya Salimova
Supervisory Board member, Chairman of Audit Committee

Born on October 13, 1970.

- ◆ From February 6, 2014 till present – Supervisory Board Member of Kazakhstan Utility Systems LLP.
- ◆ From November 20, 2013 till present – Deputy Chair of the Executive Board – Compliance Director of Ordabasy Group LLP.
- ◆ From November 1, 2006 to February 1, 2013 – financial director of Kazpharm LLP.



Sultan Akhanov
Supervisory Board member

Born on January 31, 1984.

- ◆ From December 2017 till present – Deputy General Director for Finances of Kazakhstan Utility Systems LLP.
- ◆ From September 2015 to December 2017 – Managing Director of Ordabasy Group LLP
- ◆ From June 2011 to September 2015 – founder, CEO of the Group of companies "Kazsphere".
- ◆ From September 2010 to June 2011 – Director General of the Kazakhstan-Malaysian Chamber of Commerce.

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Supervisory Board Committees

As of December 31, 2018, there are three acting committees (established on February 6, 2014) at the Supervisory Board of KUS LLP:

- 1) Audit Committee;
- 2) Committee for Finances and Investment;
- 3) Strategy Committee;
- 4) Nomination and Remuneration Committee (not formed).

In 2018, committees of the Supervisory Board of KUS LLP met four times. The main points that were discussed by the Supervisory Board committees:

- ◆ consideration of audited financial statements of KUS LLP and consolidated financial statements for KUS Group for 2017;
- ◆ consideration of report on actual financial and economic performances of the Company for the first half of 2018 in comparison with plan for the same period of year 2018 and fact of the corresponding period of year 2017;
- ◆ consideration of key performance indicators of the Company for 2018.

Audit committee analyzes the process of preparation of the Group's financial statements, analyzes the reliability and effectiveness of internal control and risk management systems, and the effectiveness and independence of external and internal audit. Its area of responsibility is ensuring that the Group complies with the legislation of the Republic of Kazakhstan.

Executive body

The Executive Body of the Company is managed by Director General, who is accountable to participants, acts on behalf of and in the interests of the Company and solves all current issues of Company activities, except those that fall within the competence of the General Meeting of Participants.

General Director represents the Company interests, manages the Company property and financial resources, concludes agreements (contracts), including labor ones, issues powers of attorney, opens current and other

Committee members:

- Assiya Salimova – committee Chairwoman;
- Gulnara Nazkhanova – committee member;
- Sultan Akhanov – committee member;
- Vladimir Ussenko – committee member.

Committee for finances and Investment is responsible for raising funds, establishing an effective evaluation of the funds raised, evaluating investment projects, and overseeing the Group's financial and business operations. It meets at least once a quarter.

Committee members:

- Sultan Akhanov – committee Chairman;
- Olzhas Zhunussov – committee member;
- Vladimir Ussenko – committee member.

Strategy committee makes recommendations on determining the strategic and priority directions for the Group's development, and evaluates the prospects of investment projects and their impact on the Group's value increase. It meets at least once every six months.

Committee members:

- Dinmukhamet Idrissov – Chairman of the Committee;
- Askar Kanafin – committee member;
- Nabi Aitzhanov – committee member;
- Sultan Akhanov – committee member.

Nomination and remuneration Committee. Currently, the Nomination and Remuneration Committee has not been formed. The Company plans to create this committee in the medium term.

accounts in banks, approves the staffing table, issues orders and decrees, gives instructions mandatory for all employees of the Company.

General Director, his deputies



General Director

Nabi Aitzhanov

Born on September 11, 1980.

- ◆ From April 12, 2010 till present – General Director of Kazakhstan Utility Systems LLP.
- ◆ From 2008 to April 2010 – General Director of Ontustik Zharyk Tranzit LLP.
- ◆ From 2006 to 2008 – Director of Energosbyt LLP.
- ◆ From 2005 to 2006 – Deputy Director, Director of Energopotok LLP.

Deputy General Directors

Vladimir Ussenko

Born on June 7, 1960.

- ◆ From January 2010 till present – Deputy General Director for Technical Issues of Kazakhstan Utility Systems LLP.
- ◆ From January 2009 to January 2010 – Head of the Corporate Management Department of Kazakhstan Utility Systems LLP.
- ◆ From June to September 2008 – Head of the Electric Power Stations Department of Kazakhstan Utility Systems JSC.
- ◆ From September 2003 to March 2008 – senior dispatcher of the regional dispatch center of KEGOC JSC – Almaty interregional electric networks.



Sultan Akhanov

Born on January 31, 1984.

- ◆ From December 2017 till present – Deputy General Director for Finances of Kazakhstan Utility Systems LLP.
- ◆ From September 2015 to December 2017 – Managing Director of Ordabasy Group LLP.
- ◆ From June 2011 to September 2015 – founder, CEO of the Group of companies "Kazsphere".
- ◆ From September 2010 to June 2011 – General Director of the Kazakhstan-Malaysian chamber of Commerce.



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Remuneration information

Kazakhstan Utility Systems LLP does not pay remuneration to members of the Supervisory Board, but provides compensation for travel expenses to members of the Supervisory Board during the period when they perform their duties related to functions of the Supervisory Board members and committee members of the Supervisory Board of the Company in accordance with the legislation

Internal audit department

The Company has an internal audit department (IAD) which carries out internal audit in the Company and its subsidiaries.

In its activities, IAD is guided by principles of independence and objectivity, competence and professionalism, as well as by international professional standards of internal audit and Code of business conduct of the Company.

Independence and objectivity of IAD is achieved by the corresponding organizational status, which provides for direct functional subordination and accountability of IAD to the Supervisory Board and administrative subordination and accountability to General Director of the Company. Audit Committee of the Supervisory Board of KUS LLP directly supervises the activities of IAD.

Corporate culture

Company considers it necessary to introduce standards of effective business practices, allowing it to occupy a leading position in energy market of Kazakhstan. We understand that honesty, integrity and fulfillment of potential to the maximum are the key factors for achieving sustainable long-term development of the Company.

Group's code of conduct (Code) is based on the principles of good faith and describes the standards of behavior expected from employees. Code is binding on all employees of the Group and apply to interaction both within the Group and with external stakeholders.

Ethics of the Group:

- ◆ honesty and objectivity,
- ◆ conscientiousness,
- ◆ commitment to development,
- ◆ respect and trust,
- ◆ responsibility,
- ◆ care,
- ◆ competence and professionalism,
- ◆ patriotism.

of the Republic of Kazakhstan, based on supporting documents (approved by the Minutes of the General Meeting of Participants of KUS LLP from February 6, 2015).

Remuneration to members of the executive body of Kazakhstan Utility Systems LLP for 2018 was 76 049 thousand KZT (in the form of wages according to the staff schedule).

In 2018, IAD conducted the following works:

- ◆ accounts receivable analysis, random audit of counterparties of all subsidiaries;
- ◆ analysis and reconciliation of mutual accounts;
- ◆ analysis of billing system (Turkestan region and Shymkent);
- ◆ random audit of subsidiaries;
- ◆ analysis of counterparties of subsidiary in Karaganda;
- ◆ analysis of counterparties of subsidiary in Shymkent;
- ◆ upon instruction of Supervisory Board and Audit Committee of Supervisory Board of KUS LLP, audit of certain issues.

For the purpose of implementation of its ethics, the Group is guided by the following principles:

- ◆ compliance with legislation of the RK,
- ◆ protection and respect for rights and interests of participants and investors,
- ◆ respect for rights and interests of employees,
- ◆ interaction with business partners based on long-term and mutually beneficial cooperation,
- ◆ avoiding conflicts of interest,
- ◆ maintenance of confidentiality of the information,
- ◆ protection and use of Group's property,
- ◆ responsibility for compliance with safety, health and environmental requirements,
- ◆ effective organization, management and control of the Group's activities,
- ◆ optimal use of available resources and risk analysis and management,
- ◆ compliance with high standards of planning, control and reporting with principle of transparency and strive to safeguard assets, including business information.

Employees are required to report any violations, including issues and situations that may be considered unsafe, unethical or resulting in conflict of interest. Management of the Group undertakes to ensure careful, objective and competent consideration of received reports.

Employees, among other things, may report problems/violations to Audit Committee of Company's Supervisory Board through ethical hotline:

Phone: +7 (717) 257 17 15, + 7 (701) 883 04 27

E-mail: marina.li@kus.kz

Auditor of Internal audit department is responsible for processing of information received through hotline and for submission of such information to Audit Committee of the Supervisory Board.

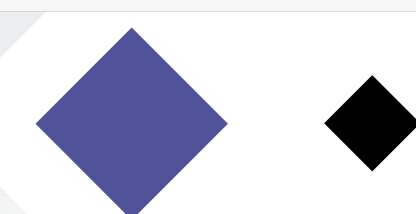
The Supervisory Board shall revise provisions of the Code once every three years, analyze the extent to which they are implemented in practice, and, if necessary, makes proposals to the Executive body for making amendments and/or additions to the Code.



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Risk management system

Risk management system of KUS Group is based in accordance with the COSO ERM international concept and is aimed to risk management and opportunities that significantly effect on creation and preservation of the Group's value. The main purpose of the risk management in the KUS Group is to achieve the greatest earning yield at admission of the controlled risks' level. The risk management is directed at revealing, prevention and minimization of events which may negatively impact on the achievement of the Group's purposes.

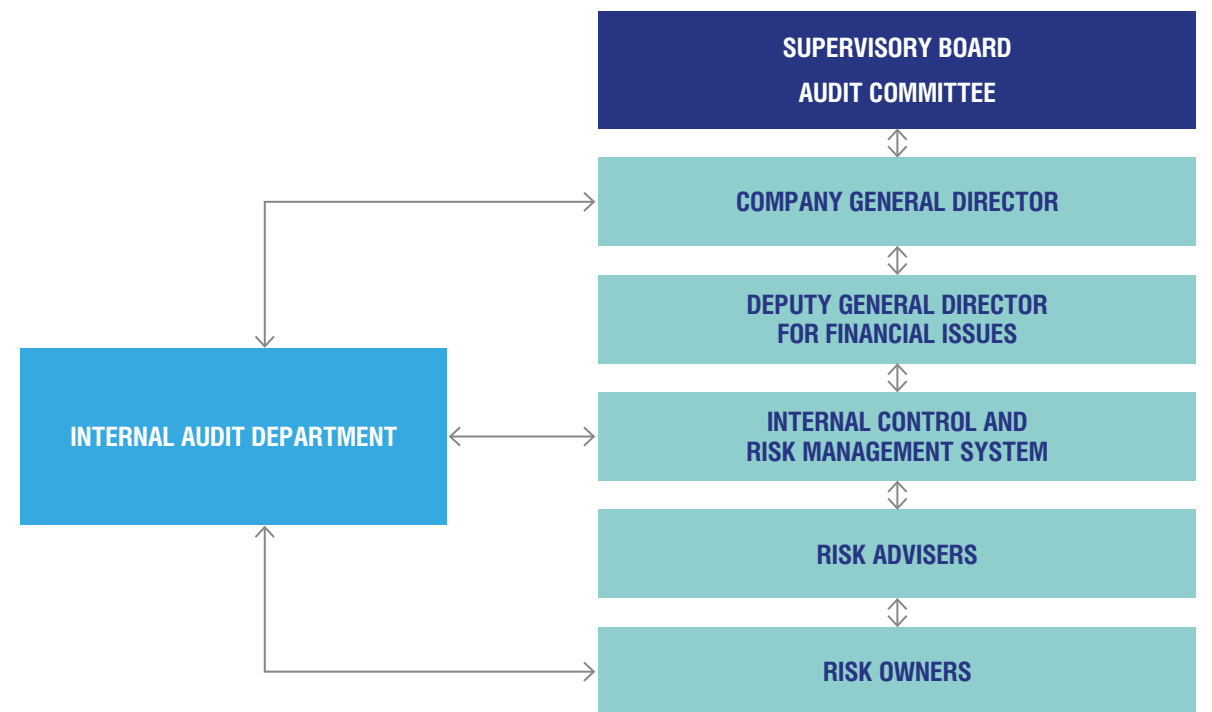
One of the important elements in the risk management system are the structural subdivisions of subsidiaries represented by each of their employees. Employees of subsidiaries on a daily basis work with risks, manage them and monitor their potential impact in the sphere of their functional duties. Structural subdivisions are responsible for implementation of the risk management plan of actions, timely identification and reporting on significant risks in the sphere of their activity and making proposals on risk management including the introduction into the plan of actions.

Principles of building a risk management system

- System approach.** Risk management is an ongoing, dynamic process that is applied to the whole Group and its Companies at each level of management and in each subdivision of KUS and its SCs.
- Supervisory function of the Supervisory Board.** The Supervisory Board is an active management body of the Company that provides risk management control.
- Responsibility for the risk management.** Each employee of the Group and its Companies is aware of purposes and tasks of risk management and is aware of his/her personal responsibility with regard to risk management within the scope of his/her authority, competence, and requirements of the Risk Management Manual.
- Separation of decision-making levels.** Decisions to minimize risks are made at different levels of management depending on the significance of risks.
- Reference to targets.** Risk management is used in the development and formation of the Group's strategy and is carried out on the basis of strategic goals and objectives of specific processes and functions.

- Timely reporting.** The movement of risk information for decision-making is from the lower control levels to higher levels. The prompt provision of information is carried out on a regular basis.
- Creation of a corporate risk-oriented culture.** Management of the Group, Internal Control and Risk Management and the SC's Risk Supervisors ensure dissemination of risk management knowledge and skills in the Group of Companies. The KUS Group of Companies are provided with an opportunity for effective information exchange and introduction of communicative norms in the framework of corporate risk management.
- The relationship between target categories.** Risk management provides the achievement of objectives by one or more separate categories but at the same time overlapping.

Risk management system structure in the Company

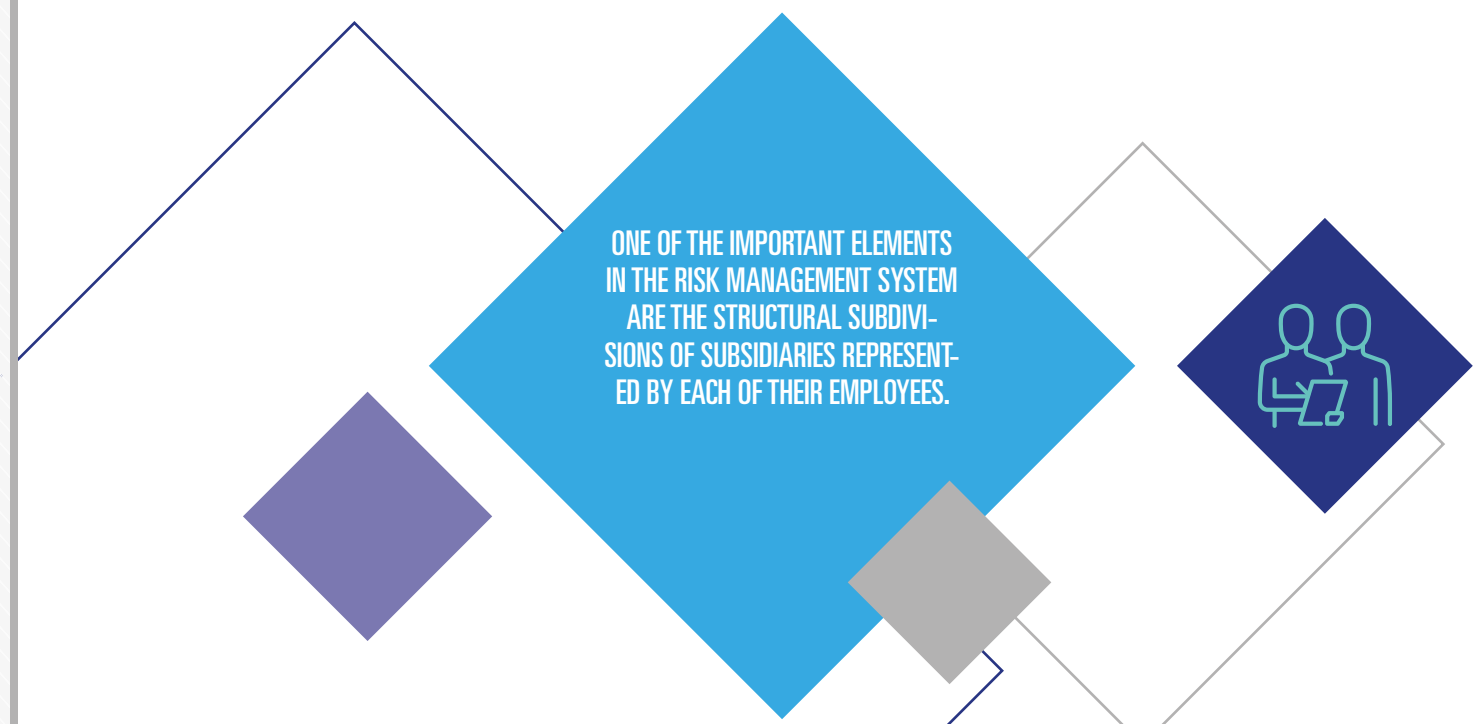


Internal control system

The Internal control system (hereinafter – the ICS) is a part of the corporate governance system, covering all levels of management, all processes and operations of the Group. The ICS is built into the processes and daily operations of the Group, includes procedures for immediate informing the appropriate management level of any significant deficiencies and weaknesses in the control,

together with details of the corrective actions that have been or should be taken. Within the frames of the ICS actualization, the estimation of the design and testing of the performance effectiveness of controlling procedures have been conducted in the Group in the following business-processes:

In 2018	Being implemented in 2019
Information technologies and safety	Planning of a prospective development
Conclusion and implementation of contracts with consumers (process of sales)	Execution of investment program
Staff management	



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RISK MANAGEMENT

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Risk classification

After identifying the sources of risks, risks are identified for each of them, being classified into main 4 categories:

1) **Strategic risks** are the risks of not achieving long-term corporate goals of the Group due to inadequate monitoring of implementation of strategies, and inadequate response to changing external conditions;

2) **Operational risks** are the risks of losses arising from deficiencies or errors in the internal business processes of the Group, in actions of employees and other persons, in operation of information systems, or due to external influences;

3) **Legal risks** are the risks arising as a result of violation of the legislation of the Republic of Kazakhstan, rules, regulations, prescribed procedures, internal policies, instructions and ethical standards. Legal risks also relate both to objectives in the field of compliance with requirements, and to objectives in preparation of the reporting (reliability and timing);

4) **Financial risks** are the risks, arising from management of financial resources of the Group, such as monetary funds, investments, debt instruments and derivative financial instruments. They include risks associated with the structure of capital, decrease in profitability, currency fluctuations, interest rates, credit risk, and liquidity risk.

The identified risks are reflected in the Map of risks against their significance:

Red zone – the risks are critical for the Group

Yellow zone – the risks with a low probability of occurrence



Main risks affecting implementation of business strategies

Risk name	Risk description	Measures on key risk management
Violation of the Labour Protection and Occupational Safety Rules	Inability to provide safe and healthy working conditions	<ol style="list-style-type: none"> 1. Operation of the Labour Protection and Occupational safety System in accordance with OHSAS 18001. 2. Qualification inspection. 3. Work order system. 4. Inspection of work places. 5. Periodical and obligatory medical examination of employees. 6. Compliance with requirements of the legislation on industrial safety at hazardous production facilities. 7. Control over conclusion of contracts for compulsory insurance against accidents in performance of labor, official duties; compulsory insurance of the legal liability of the employer – annually. 8. Provision of the production staff with milk, provision of water and drinking regime, protective clothing, special footwear, PPE, detergents and disinfectants, first-aid kits, normative and technical documentation (NTD).
Technological disturbances	Supply problems of heat and power energy due to the equipment failure	<ol style="list-style-type: none"> 1. Timely detection of defects as a result of inspections of equipment (planned and unplanned). 2. Equipment testing. 3. Conduction of current, capital and emergency repairs. 4. Implementation of the investment program on modernization and reconstruction of equipment (reduction of equipment deterioration). 5. Availability of an emergency reserve of key hardware. 6. Measures to prepare for the autumn-winter period (AWP).



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INFORMATION POLICY AND MARKETING ACTIVITY

Information policy and marketing activity
Interaction with concerned parties



Information
policy and marketing
activity

Information policy and marketing activity

Kazakhstan Utility Systems LLP which is one of the key players in the industry, pays special attention to the formation and maintenance of its positive image both in the energy market of the Republic, and among consumers. Taking into account that electricity and heat are socially significant products which are always focused on the public and the media, the basic principles of the KUS Group are openness and transparency in all activities.

In accordance with the media plan, information on the activities of Kazakhstan Utility Systems LLP is brought to the public by the Republican media, publications on the Company's events are placed in industry printed publications and electronic media.

The priority direction of the information policy of Kazakhstan Utility Systems LLP is cooperation with the regional media, since the preservation of a positive image of the Group's subsidiaries is primarily important among the residents of the regions where KUS operates.

According to the media plan the production activity (implementation of investment programs, modernization of production, repair campaign of CHPP, construction of new power grids, reconstruction of substations, activities of sales companies and other information occasions) of subsidiaries of the KUS Group in the regional media, are covered: TV-stories of TV-channels, articles in newspapers and on information Internet portals. Along with this, information about the Company's work is published on the official website of Kazakhstan Utility Systems LLP and at the official Facebook page; as well as on corporate media resources of subsidiaries.

The results of the effective information policy of the Group are:

- ♦ favorable level of customer loyalty to the Group and its subsidiaries in the regions of presence;
- ♦ dynamic increase of the Group's brand awareness;
- ♦ ability of consumers and other audience to timely learn about the events of the KUS Group;

- ♦ increasing the attractiveness of the Group as an employer and the ability to attract more qualified personnel;
- ♦ strengthening corporate cohesion, creating and supporting the Group's employees' sense of responsibility and commitment to the fundamental values and ideology of the KUS Group.

The group carries out systematic, large-scale work to improve the quality of electricity and heat supply to its consumers which is of high interest to the public. Among the significant events and facts published in the media and which caused the greatest response in 2018, are:

- ♦ successful implementation of investment programs of the KUS Group subsidiaries during the year;
- ♦ CHPP repair campaign within the frames of the project on preparation for the upcoming heating season of 2018–2019;
- ♦ modernization of power grid facilities and construction of new power facilities by power transmission companies;
- ♦ growth of the number of consumers of the sales companies;
- ♦ the use of new technologies at the production facilities of the KUS Group;
- ♦ presentation of state and industry awards to employees of the Group;
- ♦ participation of the KUS Group employees in international and national industry events; and
- ♦ strict compliance of the Group's Enterprises with the environmental legislation of the Republic of Kazakhstan.

The Group's activity is based on the current values of modern society. Taking into account of these fundamental values allows forming a regulated policy of interaction with all external and internal contractors: consumers, partners, own employees, and society.

Interaction with concerned parties

Long-term development of the Company is provided not only by its own efforts, but also depends on interaction with other subjects.

The Company is working to build an effective open dialogue with all concerned parties and to ensure transparency of the activity.

Cooperation with stakeholders takes place regularly in the course of the Company's activities. For example, we maintain constant contact with customers and contractors to obtain

opinions and proposals, work together with regulators and market participants to support the government policy in the industry and its effective development, work with trade unions in building of personnel policy, and the like.

The concerned parties provide useful feedback on the Company's impact on economic, environmental and social issues that affect the Group's sustainable development and life in the regions of presence.

Interaction with key stakeholders

Stakeholders	Interaction	Expectations and interests
Owners	<ul style="list-style-type: none"> ♦ Work of the Supervisory Board; ♦ reporting. 	<ul style="list-style-type: none"> ♦ Economic effectiveness; ♦ long-term stable development.
State authorities	<ul style="list-style-type: none"> ♦ Working groups; ♦ negotiations; ♦ appeals, inspections from the part of supervision agencies; ♦ conduction of meetings. 	<ul style="list-style-type: none"> ♦ Support of the state policy in the sphere of power energy; ♦ observance of legislation; ♦ growth of payments to the budget.
Business-partners (potential investors, creditor-banks, international organizations, financial institutions)	<ul style="list-style-type: none"> ♦ Conduction of meetings, negotiations; ♦ signing of contracts, memoranda, Strategic Cooperation Agreements. 	<ul style="list-style-type: none"> ♦ Preservation of long-term partnership relations; ♦ economic effectiveness; ♦ stable development.
Consumers (consumers of any type of products and services of the KUS Group)	<ul style="list-style-type: none"> ♦ Feedback system with consumers. 	<ul style="list-style-type: none"> ♦ Uninterrupted energy supply, ♦ reasonable price policy.
Counterparties (suppliers of material, equipment, raw-materials, and fuel)	<ul style="list-style-type: none"> ♦ Conduction of meetings, negotiations; ♦ signing of contracts. 	<ul style="list-style-type: none"> ♦ Economic effectiveness; ♦ long-term cooperation; ♦ observance of business ethics standard; ♦ transparent procurement practice.
Branch associations (KEA, Kazenergy, the National Chamber of Entrepreneurs)	<ul style="list-style-type: none"> ♦ Conduction of meetings, negotiations. 	<ul style="list-style-type: none"> ♦ Maintaining a safety culture; ♦ maintaining initiatives of the industry development.
Employees of the KUS Group and Trade Unions	<ul style="list-style-type: none"> ♦ Internal communications' channels; ♦ meetings, negotiations with representatives from Trade Unions. 	<ul style="list-style-type: none"> ♦ Ensure of safe labour conditions; ♦ Transparent and effective remuneration system; ♦ education and development; ♦ non-discrimination.
Public associations and charity organizations (local nature)	<ul style="list-style-type: none"> ♦ Information on the Company's activity; ♦ conduction of meetings; ♦ feedback channels. 	<ul style="list-style-type: none"> ♦ Social policy and maintenance of local associations; careful use of natural resources.
Mass media (national and regional)	<ul style="list-style-type: none"> ♦ Responds to requests from mass media; press-releases; ♦ placement of information publications; ♦ conduction of briefings. 	<ul style="list-style-type: none"> ♦ Economic effectiveness; ♦ production development, ♦ social policy and maintenance of local associations; environment protection.



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Corporate social responsibility

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Corporate social responsibility

The Corporate social responsibility (CSR) is an integral and a very important part of the Group's activities. This, first of all, is due to the fact that the Group's activity as well as the quality of services rendered and products manufactured has a marked impact on the quality of life in the regions of presence.

CSR principles of the Group:

- ◆ Quality provision of services, which, ultimately, is a guarantee of active social and economic development of the areas of presence;
- ◆ Fair and timely remuneration of the Company's employees, as well as ensuring safe working conditions and creating all conditions necessary for career growth, personal and professional development of each employee;

- ◆ Responsibility for preservation of the environment before the state and society as a whole.

The CSR principles are observed in all business processes of the Group, being an integral part of business planning and a go-to tool for preventing contingencies and conflicts.

The Group seeks to conduct an open and transparent business, to comply impeccably with the legislation of the Republic of Kazakhstan and to correspond to international CSR standards.

Human Resources Management Policy

The Group's employees are its strategic capital. Through the operation of effective personnel management technologies the Company aspires to create a structure of personnel consistent with the Group's strategic goals of development as well as to strengthen and develop the Group's human capital. Development of human resources and introduction of a motivation system allows creating and developing additional competitive advantages of the Group as well as creating the culture of innovations and effectiveness.

The Group ensures ability to integrate the human resource management process with all business processes;

4 Succession.

The Group welcomes a coaching as an effective measure to improve professional skills, firstly among young specialists. The specialists are trained and share accumulated skills and knowledge with their colleagues.

Professional development of employees is carried out through processes of career development planning, the personnel reserve management;

5 Employees Motivation.

Remuneration is established in such a way that to motivate employees to the effective performance and must be a competitive to attract highly qualified specialists. The remuneration system is transparent and understandable. The remuneration level depends on the achievement by the Group of agreed goals and objectives in general and by individual employees;

6 Interrelation of interests and goals of the Group and its employees.

The Group respects and values its employees, takes care of them and takes into account their demands and needs, contributes to creation of favorable working conditions that meet safety requirements.

Main principles of the HR Policy:

1 Procativity.

The Group creates conditions for employees' interests in the success of the common cause, encourages their initiative, provides opportunities for realizing the potential, career and professional growth in various fields;

2 Transparency and openness.

The Group ensures openness at all stages of the human resource management process. The system of selection and promotion of employees in the Group provides a sufficiently high level of professionalism of employees and transparency of recruitment procedures. Career growth of employees is carried out on the basis of an objective assessment of the results of their work, business qualities as well as professional competence;

3 Ability to integrate.

Number of personnel

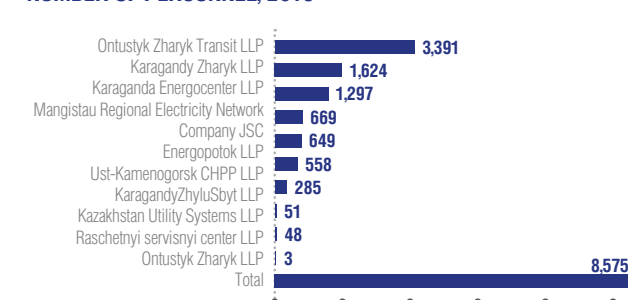
The number of personnel of the Group as of December 31, 2018 amounted 8,575 people. Personnel structure of the Group is characterized by a high proportion of males (75.7%) because of the specifics of their activities.

In the Group the part of employees whose age is up to 40 years amounts to 7.12% from total number of employees. The part of employees at the age above 60 years amounts to 0.51%.

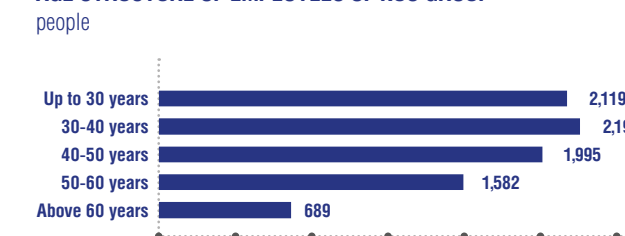
PERSONNEL STRUCTURE BY CATEGORY AND SEX

Personnel category	Total,		males		females	
	persons	%	persons	%	persons	%
Staff strength	8,575	100	6,493	76	2,082	24
Chiefs	649	7.6	556	86	93	14
Specialists	1,924	22.4	1,186	62	738	38
Workers	6,002	70.0	4,751	80	1,251	20

NUMBER OF PERSONNEL, 2018



AGE STRUCTURE OF EMPLOYEES OF KUS GROUP



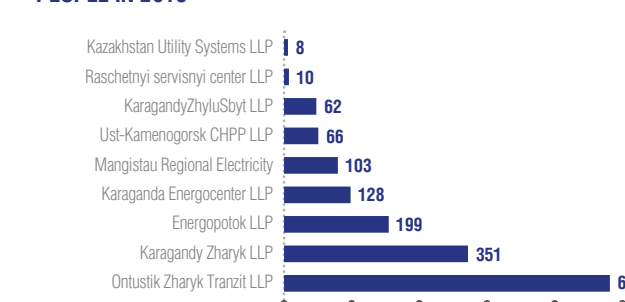
Staff turnover

Staff turnover in the Group for 2018 was 13.88%. In order to reduce the staff turnover index and support of the staff stability a number of measures are being implemented, namely:

- ◆ material and moral encouragement of qualified employees;
- ◆ improvement of social guarantees in accordance with the collective agreement;
- ◆ a stable economic situation in the Group;
- ◆ a healthy psychic atmosphere; and
- ◆ career prospects.

Total number of accepted employees in the Group amounted to 1,547 people, among them: 1,290 – workers, 229 – specialists, and 28 – chiefs.

TOTAL NUMBER OF ACCEPTED EMPLOYEES AMOUNTED TO 1,547 PEOPLE IN 2018



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Training and development of personnel

The system of personnel training is aimed at acquiring by employees of theoretical knowledge and practical skills necessary to achieve the Group's strategic goals.

For the purposes of a structured approach to training and development of the personnel, the Annual Training Plan for a calendar year is approved. The Plan includes training related to advanced training, preparation for the profession, re-attestation, obtaining a related specialty to ensure timely training of the new personnel and performance of works.

In 2018 5,369 people were trained that comprises to 62.6% from the total number of employees including the compulsory training of 4,846 people of the production staff that amounted to 56.5% from the total number of employees who have been trained.

In 2018 the total amount of expenses was 44.3 million KZT.

Attraction of young specialists

The Group conducts arrangements aimed at the attraction of young specialists to achieve an optimal combination of the young initiative employees and experienced highly professional specialists.

Within the frames of implementation of the HR policy the Group conducts arrangements aimed at the ensuring of the enablement and transfer of professional knowledge and skills from experienced highly professional specialists to the young initiative employees. For those purposes each student and each employee is assigned with a tutor according to the contracts on dual training, adaptation program of personnel inside the Group.

In 2018 in subsidiary companies of the group 393 students have passed a industrial and a pre-graduation practice, of them 123 people were accepted. As per the results of the year of 2018, there have been conducted 21 introductory tours to production facilities of Mangistau Regional Electricity Network Company JSC, Ust-Kameneogorsk CHPP LLP, Karaganda Energocenter LLP, and Kazaragandy Zharyk LLP.

Ontustik Zharyk Transit LLP carries out a close work with universities: Shymkent Polytechnic College, Almaty Energy Institute, South-Kazakhstan State Institute. Students of these universities pass technological and industrial practices in places of the experienced masters.

A number of employees of Ust-Kamenogorsk CHPP LLP take part in the activities of educational institutions:

Motivation and remuneration of personnel

In 2018 the increase in wages in the Group averaged to 9%. In the Group there is a flexible payment system aimed at implementation of the key performance indicators of each employee on a monthly basis. This payment

COMPULSORY TRAINING



participate in the state examination commissions for the administering final tests from future power engineers, graduates of the Ust-Kamenogorsk Polytechnic College during the school year; conduct practical classes reviewing technical works of students.

The Group provides a potential resource for coaching by encouraging employees to transfer their knowledge and skills to colleagues. It is planned to create the training center on the basis of the Corporate Training Center of Ust-Kamenogorsk CHPP LLP for improvement of professional qualification of personnel of all categories.

In 2018, MRENC JSC signed a Memorandum of cooperation with the Caspian State University of technology and engineering named after Sh. Yessenov. The strategic document was signed by Saltanat Igissinova, the Chairman of the Board of MRENC JSC, and Berik Akhmetov, the Rector of Caspian State University of technology and engineering named after Sh. Yessenov.

The parties agreed to cooperate in order to expand opportunities for young professionals and increase of human resources in the energy sector. On the basis of MRENC JSC there was created a branch of the Department "Information systems and energy" to prepare students majoring 5B071800 "Electric-power engineering" and to conduct laboratory and practical trainings directly on the production base of the enterprise.

system allows stimulating employees to work effectively, introducing innovations in everyday activities for increase of labor productivity.

Non-financial motivation

In order to increase employee loyalty and ensure safety in the daily performance of work duties, the following measures were organized:

- ◆ provision and organization of integrated catering for workers of Karaganda CHPP-1; Karaganda CHPP-3 at preferential rates;
- ◆ provision of preferential travel costs for workers of Karaganda CHPP-1; Karaganda CHPP-3 on the approved routes along the city with coverage of the main areas of the city (Maykuduk, Prishakhtinsk, Sortirovka, Yugo-Vostok);
- ◆ annual allocation of funds for sports and recreational activities in Raschetnyi servisnyi center LLP: rent of a sports hall (for basketball, volleyball, mini-football) and a swimming pool.

Interaction with Trade Unions

In 2018, the total number of employees in the trade Union amounted to 5,943 people which is 66.13% of the total number of employees.

Collective agreements provide for social guarantees and benefits for employees who are members of the trade Union, their families as well as pensioners and veterans of the Group's Enterprises:

- ◆ payment of 50% of the cost of sanatorium-resort therapy;
- ◆ payment of 50% of the cost of vouchers to children's health camps;
- ◆ assistance to the workers' children with purchase of school supplies;
- ◆ new year gifts, gifts for March 8, Nauryz;
- ◆ financial assistance due to the 9th of May;
- ◆ charitable assistance to the International Day for the Elderly;
- ◆ financial assistance due to the retirement;
- ◆ financial assistance due to the death of a close relative, the birth of the first child, due to treatment, or the anniversary date.

In order to protect the rights of employees and provide them with guarantees in the issues of organization of labor and wages, working hours, labor conditions and labor protection, as well as for social support of employees in 2018, a collective agreement for 2018–2022 between **Mangistauskaya REC JSC** and its labor collective, was concluded. During the reporting period, the parties complied with all points of the collective agreement; the basic principles of social partnership have been executed.

The social policy of Energoipotok LLP is defined together with workers and their representatives – the trade Union organizations. **Energoipotok LLP** and Local Union of

There are annually conducted events with giving awards, certificates of honor, titles in order to increase motivation for effective work, stimulating employees for achieving high production results in the Group's subsidiaries.

According to the results of 2018, 465 employees were awarded for their effective labor activities. Of them 149 employees were awarded with corporate awards, 13 employees with state awards, 13 employees with the CIS Electric Power Council, 51 employee with awards from Kazakhstan Electrical Power Association (KEPA) (among them 9 employees were awarded the title of "Merited Power Engineer", 13 employees with the title of "Honorary Power Engineer"), and 21 employee with awards from the Ministry of Energy.

workers of electric power industry of Kazakhstan signed a collective agreement.

Karaganda Energocenter LLP has a collective wage agreement signed with Union of workers of the Karaganda group of power companies Public Foundation. The agreement is valid until December 31, 2019.

Within the framework of the collective agreement Karaganda Energocenter LLP has established an increasing industry coefficient for the calculation of the minimum wage standard for workers engaged in heavy work, work with harmful and (or) dangerous working conditions in the amount of 2.0 coefficient to the minimum wage.

In **Karagandy Zharyk LLP** constantly operates a collective agreement which in excess of social guarantees allowances for the qualification of drivers are established.

Students who study working professions for further work in Karagandy Zharyk LLP are established an educational payment from his/her enrollment in the staff until the qualifying examinations in accordance with the contract of training. A paid study leave for exam preparation and an exam, laboratory work, preparation and defense of diploma work (project), are given.

In the sphere of social programs, an additional leave is provided on the occasion of registration of marriage, funeral of close relatives, and birth of children.

Employees are partially compensated for utilities with the transfer of these funds to their current accounts.

It has become a tradition to hold an annual thematic graffiti contest, in which any citizen of Kazakhstan and neighboring countries can reveal their creative abilities.

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Corporate events

Employees of the Group annually actively participate in professional, as well as in sports and recreational activities, both at the Company level and at the district, regional levels.

In May, 2018 a football competition among subsidiaries was held.

Since 2001, employees of Ontustik Zharyk Tranzit LLP take part in the national professional competitions of operational maintenance personnel for the operation of electrical distribution networks.

Ust-Kamenogorsk CHPP LLP is a participant of the sports contest among the power engineering enterprises and the competition "Movement for health", a citywide competition between the companies "ZAVODnaya molodezh", as well as the competitions which organizer is the Youth center of the Ust-Kamenogorsk city Akimat.

Annually physical training and recreation club (PTRC) "Energetik" conducts a spartakiad among the power engineering enterprises. In 2018, the 44th spartakiad was held which program included volleyball, basketball, table tennis, football, chess and swimming.

The sports team of Ust-Kamenogorsk CHPP became the owner of the "V stars Fortune Cup" in the beach volleyball tournament.

In September 2018, employees of MRENC JSC once again demonstrated that they not only work effectively supplying consumers with electricity, but also actively promote a healthy lifestyle playing sports in their free time.

The power engineers of the power supply network Company held the "IV Sports teambuilding – 2018" at the area of the enterprise. The event aimed to strengthen the corporate unity, was attended by over 200 employees, representing all structural units of MRENC JSC including the territorial RES. The team building program included various sports competitions.

In Karagandy Zharyk LLP with the participation of the trade Union organization trips to fishing (winter and spring fishing), have been organized. In the summer months, it is organized the summer vacation on the principle of "weekend trip" when workers with their families go on a summer vacation to Karkaralinsk, Balkhash, and Bayan-aul.

On July 13, 2018 KaragandyZhyluSbyt LLP held an ecological teambuilding to clean the park area of the city from garbage. The Administration of parks over Karaganda city for this event allocated a territory and provided with garbage bags. By this environmental action workers have contributed to the improvement of the city, showed an example to residents and enterprises of the city of Karaganda.

On August 15, 2018 in the building of the Central office of KaragandyZhyluSbyt LLP large-scale exercises were held among workers to comply with safety at work in emergency situations.

The purpose of the event is to check the operation of the CCTV, automatic fire alarm system, the actions of employees of the security organization responsible for the building, the ability of employees of the partnership to provide first aid and the organization of evacuation in an emergency situation. The training was conducted in conjunction with the units of the fire Department No. 1 of the Fire fighting and rescue operations of the DES of Karaganda region.

KaragandyZhyluSbyt LLP conducted practical exercises with the participation of 128 employees with the involvement of professional rescuers – dog handlers and physicians on the rules of safe behavior and first aid.

The Group has a tradition to celebrate a professional holiday – **Power Worker Day** on December 22. Traditionally it passes with solemn handing of certificates of appreciation, letters of thanks, medals to distinguished workers during the event.

Annually Ontustik Zharyk Tranzit LLP organizes a solemn meeting at which the lottery is held, in winning lots there are household appliances.

In Karagandy Zharyk LLP to the celebration of the Power Worker Day annually held internal sports competitions in various sports including popular volleyball, table tennis, triathlon, shooting, mini-football, swimming, chess, and fishing.

On the Power Worker Day in the city of Ust-Kamenogorsk, it is held the final stage (summarizing) of the sports contest among the power enterprises. According to the results of 2018 Ust-Kamenogorsk CHPP LLP took the first place.

One of the important areas of work of MRENC JSC is the prevention measures of electric injuries among children and adolescents. On the eve of the Power Worker Day for the first time MRENC JSC together with the Department of education of the Mangystau region held a regional drawing competition for electrical safety among students "No jokes with electricity!". Pupils of 2–4 and 5–7 classes of all schools of the region took part in the competition. The main purpose of the competition is to attract the attention of children, teachers, parents to the topic of electrical safety, and proper and careful handling of electricity.

Annually the specialists of MRENC JSC work with children and adolescents in schools, raising the level of literacy in matters of electrical safety.

The companies of the Group hold solemn meetings in honor of the International Women's day – **March 8** where the female part of the team accepts congratulations from the Company's management.

Celebration of **Nauryz Meiramy** with representation of the Kazakh customs and carrying out traditional competitions – asyk atu, tug of war, power competitions, with delivery of prizes to winners became an unchanged tradition in the Group.

In Ontustik Zharyk Tranzit LLP the teams that took the first three places are encouraged with cash prizes. There is a competition for the best national costume. After competitions and contests a concert is held, a rich dastarkhan with national dishes is served.

KaragandyZhyluSbyt LLP organized a corporate fancy-dress parade to a holiday Nauryz holding national competitions and observance of the established traditions.

Ust-Kamenogorsk CHPP LLP every year is a participant to a city-wide celebration of Nauryz. In 2018, it became the winner of the Yurt competition and took the 3rd place in the category "Best ritual".

In 2018, Energopotok LLP held a competition among structural units for national dishes of different peoples of the world.

Health and Labor Safety

One of the basic principles of business activity for Kazakhstan Utility Systems LLP is the priority of life and health of employees. The main objective is the absence of accidents with employees of the Company and contractors.

The management of Kazakhstan Utility Systems LLP adheres to the following principles in the field of occupational health and safety.

- ◆ We put the safety of plant employees and contractors in the first place.
- ◆ We comply with the requirements of the legislation of the Republic of Kazakhstan and support ongoing training, increasing the safety culture of employees.
- ◆ We strive to preserve the health of each employee.
- ◆ We openly talk about the activities of the enterprise in the area of health and safety.

All personnel of the OS services of subsidiaries are competent, qualified specialists, most of whom are certified under the IMS system: OHSAS 18001, ISO 14001, ISO 9001, IOSH and Nebosh international standards. Also, our specialists constantly undergo advanced training at various special courses and trainings in the area of OS and EP. Specialists participate in the HSE activities of various levels.

In 2018, no accidents were registered at the Group's facilities.

Labor safety system

- ◆ Kazakhstan Utility Systems LLP adheres to the policy of zero tolerance for violations of the fundamental (basic) rules and norms in the area of labor safety and health. The zero tolerance policy is a certain level of responsibility for violation of the basic rules of OS, up to and including termination of the contract (employment contract or contract with the contracting organization). Violation of the cardinal rules, the identification of the

Other than the specified events, the employees of the Group take an active part in the city subbotniks.

On May 1st the power engineers of MRENC JSC took part in mass events dedicated to the celebration of the Day of unity of the People of Kazakhstan. More than 100 power engineers of MRENC JSC took part in the procession with placards and banners. Ahead of the march employees of MRENC JSC were driving a special vehicle of the Company with the logo of the power company.

In October, the power engineers of MRENC JSC entered the top three in the regional competition "Enbek Zholy". The Amanov's family took the 3rd place in the nomination "The Best labor dynasty".

fact of the use of alcoholic beverages (the presence in the blood above zero ppm) are grounds for resolving the issue of termination of an employment contract. Measures for violation of safety and environmental protection rules for the employees of contractors are defined in the standard HSE Annex for works / services on the customer's territory. Each employee must comply with and require from others to comply with all laws and regulations on labor safety and accident prevention that are enacted at the enterprise.

◆ The right to suspend work is a process that empowers every employee of a subsidiary and contracting organization with the authority to stop work as soon as a situation is noted which is, in his opinion, unsafe. The right to stop work also includes the obligation of all employees and contractors to stop their work as soon as an employee or contractor asks to do so, applying the right to stop work. A shutdown is considered the last chance to prevent incidents and, consequently, serious injuries and deaths. As soon as the right to stop work was applied, the work shall be immediately suspended, the reason for the work stoppage shall be explained, work safety analysis shall be carried out in order to identify and determine, if necessary, additional control measures to reduce risks. Employees are encouraged and thanked for the identified risks and the suspension of work for the sake of safety.

- ◆ Preventive safety – use of a work safety analysis form to assess risk to qualitatively study each stage of work, identify existing and potential hazards and risks at each stage of work, and identify risk control measures to reduce and eliminate hazard and risk.
- ◆ Check-lists of hot works, work at height, HD, works in confined spaces, and so on.

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Key indicators	Key events of the year 2018 and realization of priority tasks	Strategy	Corporate governance	Information policy and marketing activity	Environmental Protection
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- ◆ 1C: Safety Walk (Ust-Kamenogorsk CHPP LLP) is a program for registering rounds in the area of HSE. The process of rounds by employees of the enterprise, as well as the results achieved, are entered into the registration program of Safety Walk to identify unsafe actions and conditions at crew workplaces, as well as to keep records of the detected violations.
- ◆ Application of the LOTO system. Every year, thousands of workers in various industries are killed or injured during repair or maintenance of industrial equipment under the accidents with an uncontrolled supply of energy. The LOTO system is a monitoring system for hazardous energy sources in order to ensure the safety of people, to protect the equipment, to ensure its uninterrupted operation. The LOTO system is based on the processes of multiple inspections of each important stage of control of hazardous energy sources carried out by competent and authorized persons in order to ensure proper disconnection from hazardous energy sources. The LOTO system is recommended for use by the International Labor Organization (ILO) as the most effective system of industrial safety during repair and maintenance work, which makes it possible to almost completely eliminate the risks associated with human factors, while providing equipment and blocking the supply of dangerous energy.
- ◆ Annual purchase of suits for protection against electric arc. The set is selected in accordance with the nature of the hazard and operating conditions. The set includes: a jacket made of fire-resistant material, a suit or overalls made of fire-resistant material, heat-resistant gloves, heat-resistant helmet with a protective screen for the face, a balaclava. Sets for protection against the effects of an electric arc provide a chance to save lives and to preserve health during erroneous actions of operating personnel, as well as in emergency situations and allow to extend the time of evacuation from the danger zone. Also, protection sets help to reduce the likelihood of accidents in organizations of the power industry, including fatal ones.
- ◆ Conducting monthly OS and environmental days is one of the opportunities for staff training, practical skills training, as well as informing staff on the importance of issues in the area of labor safety, occupational safety and environmental protection in their daily work. Safety days are also an opportunity to get feedback on the effectiveness of measures taken to improve the safety culture and ecology. At the beginning of the calendar year, a schedule of days for OS is drawn up, which is approved by the plant management and

includes the most topical topics on labor safety and ecology in the area of energy and related production areas. The schedule is drawn up in such a way that employees of all structural divisions of the enterprise and employees of contracting organizations performing work at the enterprise take part in the events every month.

- ◆ Training in the CTC (Ust-Kamenogorsk CHPP LLP). A large role in the training of personnel and contractors is played by the Corporate Training Center (CTC). It is worth noting training of the contracting personnel. Operating and construction contractors form a large part of the Company's team, and it is critically important that they share the safety culture of the Group. Training in the CTC is a kind of foundation from which all further work begins with the employees of contracting organizations.

- ◆ Weekly issue of the HSE newsletters.
- ◆ Conducting testing during the qualifying exams under the program.

Protecting employees from injury and occupational diseases is an integral part of risk management and is coordinated by senior management.

From the enterprise point of view, there are sustainable reasons for maintaining the safety and health indicators at high levels:

- ◆ saving the lives of people
- ◆ reduction of losses from injuries and material damage,
- ◆ reduction of the number of hours for sick leave,
- ◆ reduction of insurance payments,
- ◆ strengthening the employees' morale and improving motivation,
- ◆ improving the Company's reputation on the market,
- ◆ reduction of legal costs, costs of penalties and compensation,
- ◆ improvement of the labor discipline.

HSE Bonuses

The quarterly OS bonus for the personnel of the enterprise is given in case of absence of accidents with employees of the enterprise and contracting organizations. In order to motivate contractors personnel to work safely, the Company reserves the right to determine the best contracting organization or employee of the contracting organization for a certain period of time and to provided bonuses.

Certification

The Kazakhstan Utility Systems LLP group of companies is certified for compliance with the ISO 9001 quality management system, ISO 14001 environmental management, and OHSAS 18001 environmental safety.

Charity and Sponsorship

The Group is an active participant of social projects aimed at supporting the population in the regions of its presence.

Every year, in contemplation of May 9, **Ontustik Zharyk Tranzit LLP** holds a solemn event with material incentives to honor the veterans of the World War Two, the war in Afghanistan, the veterans of the labor front and the equal-status persons.

Also, each year in honor of celebrating the Day of Older Persons of the Republic of Kazakhstan, Ontustik Zharyk Tranzit LLP allocates funds for the payment of a one-time reward to all its non-working pensioners.

Every year, on Kurban-ait, Ontustik Zharyk Tranzit LLP provides material assistance to ten low-income families in the Suzak district and an orphanage in the Sairam district of the Turkestan region.

KaragandyZhylySbyt LLP provided children from poor families with school bags and necessary stationery for the school year as a part of the Road to School program.

KaragandyZhylySbyt LLP provided sponsorship assistance to the Spiritual Board of Muslims and the city mosque of Karaganda and material assistance to the Council of Power Industry Veterans on the occasion of the Day of Older Persons.

In 2018, the **Raschetnyi servisnyi center LLP** provided charitable assistance to its employees for the treatment of disabled children in the amount of KZT 804.8 thousand.

Also, according to the memorandum concluded with the local executive body for the provision of charitable assistance, veterans of the WW2 are granted benefits for the consumption of electrical energy in the amount of 120 kWh.

Material assistance was provided to veterans of the WW2 and home front workers – 38 persons. Total spent KZT 447,350. Food baskets were purchased and KZT 5,000 paid each.

Ust-Kamenogorsk CHPP LLP has allocated 14 tons of coal for the House of Veterans.

Also Ust-Kamenogorsk CHPP LLP has provided material assistance to:

1. PF My City – KZT 2.5 million;
2. Branch of the ROO Billiard Sport – KZT 1.5 million;
3. NGO Amateur Volleyball League – KZT 100 thousand;
4. NGO Veterans of the Power Industry of the East Kazakhstan Region – KZT 200 thousand.

In 2018, Karaganda EnergoCenter LLP provided free outpatient treatment to employees under a contract entered into with the City Center for Primary Health Care LLP medical institution in the amount of KZT 2.4 million.

Every year Karaganda EnergoCenter LLP allocates funds from the budget to finance, develop sports and promote healthy lifestyles of employees.

Karaganda EnergoCenter LLP provided assistance to veterans as part of the celebration of the Day of the Older People, the company partially compensated for the payment of electricity by transferring money to personal accounts of the pensioners. In 2018, the sum amounted to KZT 988 thousand.

For May 9, veterans of the World War Two and home front workers, Afghan veterans (employees, including former ones) received assistance in the amount of KZT 1, 2 million.

Monthly **Energopotok LLP** provides 30 kW of electricity to the veterans of the WW2 free of charge.

Every year in honor of the celebration of Nauryz and on Kurban-ayt, Energopotok LLP provides assistance to low-income families. Namely, for the families of this category, the purchase and delivery of essential food products (flour, vegetable oil, sugar, meat, salt).

At the beginning of the year, employees of **MRENC JSC** provided charitable assistance to the corporate fund "Fund for Support of Disabled Children". The funds raised by the team of the power grid company are directed to the purchase of Bombino equipment for a 10-year-old disabled child, Fatima Salmanova, whose diagnosis is: severe cerebral palsy, severe spastic tetraparesis.

Also this year, the employees of MRENC JSC provided material assistance to three pupils of the Shkolnik center. Due to financial assistance collected by employees of MRENC JSC from personal funds, a group of children's trip to the city of Nur-Sultan was paid for participation in the XVI International Media Festival of children and youth public media "Under the lucky star: we will live in a new world!".

Power engineers of MRENC JSC annually assist low-income families, veterans of the WW2, Afghan veterans, as well as labor veterans and retirees who previously worked in the energy sector.

Employees of MRENC JSC provided material assistance to one of the Company's employees to treat a child in the Russian Federation, in the city of St. Petersburg.

Former employees of MRENC JSC in particular 71 non-working pensioners, in 2018–2019, were provided with material assistance in the amount of 20 MCI, and also New Year's gifts were presented to them.

21 employees of MRENC JSC with a difficult financial situation of a family with 4 or more minor children were provided with material assistance in the amount of 20 MCI.

On the eve of the international holiday of June 1 – Children's Day, MRENC JSC provided material assistance to disabled children of the employees in the amount of KZT 20,000 for each child.

On the eve of the New Year, MRENC JSC transferred New Year's gifts to 42 children from poor families to the regional akimat.

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ENVIRONMENTAL PROTECTION

Karaganda Energocenter LLP
Ust-Kamenogorsk CHPP LLP
Energy saving



Environmental Protection

Environmental Protection

The most noticeable impact on the environment has the coal generation of energy. In accordance with the principle of materiality in disclosing information, in this annual report, the Company discloses environmental protection issues with regard to subsidiary energy generating assets.

Karaganda Energocenter LLP

Karaganda Energocenter LLP views environmental protection activities as an integral part of its daily work, fully recognizing the need to maintain environmental balance and ensure environmentally sustainable social and economic development of society. In 2018, the company successfully confirmed compliance of the current environmental management system with the requirements of ISO 14001.

Responsible attitude to the environment is the key principle of the Environmental Policy of Karaganda Energocenter LLP. The objectives of this policy are to minimize the negative impact on the environment, increase the level of environmental safety, responsibility for ensuring environmental protection, energy saving and rational use of natural and energy resources in the activities of the enterprise. The management of Karaganda Energocenter LLP assumes responsibility for implementation of the commitments made by the Environmental Policy to continually improve policies and prevent pollution, as well as to comply with applicable legal and other requirements to which Karaganda Energocenter LLP relates in its environmental aspects. Each employee of the Company, as well as an employee of contracting organizations working in the interests of the Company, is familiar with the Environmental Policy of Karaganda Energocenter LLP.

Karaganda Energocenter LLP annually forms the Environmental Program, which defines the necessary environmental measures, as well as the costs of their implementation.

In 2018, the following measures were taken to protect the environment by the company itself and the third-party organizations:

Karaganda CHPP-1

- ◆ Testing the radiation quality of the bottom-ash waste, fuel oil and coal.
- ◆ Alienation of waste to interested individuals and legal entities for recycling, disposal and storage.
- ◆ Implementation of soil monitoring.
- ◆ Protection from bottom-ash waste pollution of land lots adjacent to the ash disposal area by filling the bare beaches of the ash disposal area with loamy soil in the summer period (dust suppression).
- ◆ Determination of the network water quality.
- ◆ Repair and revision of clarified pumping water.
- ◆ Repair and partial replacement of valves of the EC.

- ◆ Monitoring of exposure to atmospheric air at the boundary of the sanitary protection and residential areas.
- ◆ Inspection and repair of worn out units, elimination of suction cups on the ARU of boiler units PTVP-100 No. 1–3.
- ◆ Inspection and repair of worn out units, elimination of suction cups at ARU of BKZ-50 boiler units No. 1–5.
- ◆ Operational testing of ARU of BKZ-50 boilers No. 1–5 and PTVP-100 No. 1–3.

Karaganda CHPP-3

- ◆ Monitoring the impact on atmospheric air at the border of the sanitary protection zone.
- ◆ Determination of network water quality.
- ◆ Monitoring of soil cover.
- ◆ Disposal of waste to interested individuals and legal entities for recycling, disposal and/or storage.
- ◆ Testing the radiation quality of the bottom-ash waste, fuel oil and coal.
- ◆ Development of regulatory documentation in the area of ecology.
- ◆ Repair and partial replacement of burners.
- ◆ Operational tests of ash handling units of boilers No. 1–7.
- ◆ Revision, replacement of worn out assemblies, elimination of suction cups at ash collecting assemblies of boiler units No. 1–8.
- ◆ Maintenance and inspection of the SGC-509 stationary gas analytical complex.
- ◆ Revision and repair of a steam-dusting unit on belt conveyors.
- ◆ Advanced training in the area of ecology.

In total, Karaganda Energocenter LLP spent KZT 91.5 million on the implementation of EP measures.

The risk management system is successfully operating, aimed at ensuring continuity and stabilization of activities by limiting the degree of impact of internal and external negative factors on the activities of Karaganda Energocenter LLP. In order to prevent a negative impact on the environment, an annual assessment of environmental risks is carried out and measures are taken to reduce them, which, by the end of 2018, were fully implemented.

When considering construction projects, reconstruction, modernization of equipment and facilities of Karaganda Energocenter LLP, an assessment is made for the completeness of all types of environmental impact and the development of measures to reduce them.

All the environmental risks of Karaganda Energocenter LLP in 2018 were under controlled conditions, the specification of risks is defined in the register of environmental aspects of the enterprise.

The dimensions of the sanitary protection zones of CHPP-1 and CHPP-3 are determined in accordance with the sanitary and epidemiological requirements for the

Atmospheric air protection

Karaganda Energocenter LLP is a large user of natural resources and has a significant impact on the atmospheric air of Karaganda.

In accordance with the requirements of the environmental legislation of the Republic of Kazakhstan for CHPP-1 and CHPP-3, regulatory documents (MPE, EIA) were developed and maximum permissible concentrations (MPC) were established.

To reduce the anthropogenic impact on the environment, all boilers of CHPP plants are equipped with an ash collection system. The implementation of measures for the reconstruction of ash collection facilities has significantly reduced ash emissions.

In accordance with the requirements of the Technical Regulations, a stationary gas-analytical complex is installed at the boilers of CHPP-3, which allows for continuous monitoring of the concentrations of harmful substances in the flue gases at each boiler unit.

In order to comply with the requirements of the environmental legislation of the Republic of Kazakhstan and maintain project emissions of pollutants at CHPP-1

establishment of a sanitary protection zone of production facilities, approved by order of the MNE RK No. 237 dated March 20, 2015. Based on these rules, CHPP-1 belongs to the enterprises of the 2nd hazard class with an area of the sanitary protection zone (SPZ) – 500 m. CHPP-3 belongs to the enterprises of the 1st hazard class with an area of the sanitary protective zone (SPZ) – 1,000 m.

On the basis of Article 40 of the Environmental Code of the Republic of Kazakhstan and in accordance with the sanitary classification of industrial facilities of the CHPP-1 and CHPP-3 industrial sites, they are classified as the 1st category.

and CHPP-3, operational monitoring is performed, which includes: calculation of emissions into the environment from stationary sources, recording of products, consumption of raw materials and materials, hours of work of each piece of equipment, the quality and composition of the burned fuel.

Gross emissions from stationary sources in 2018 amounted to 36,058 tons with the established standard of 46,394 tons per year.

According to the Code of the Republic of Kazakhstan “On taxes and other obligatory payments to the budget”, emissions from mobile sources are not calculated, the amount of fuel used is the basis for calculations of payments for emissions from mobile sources. Transportation of workers, raw materials, materials used for the Company’s activities and performance of work is carried out over short distances and does not have a significant environmental impact.

In 2018, tax payments for pollutant emissions from stationary sources amounted to KZT 290,656 thousand, from mobile sources (transport) – KZT 827 thousand.

Types of emissions (tons / year)	2016	2017	2018
Karaganda CHPP-1			
Total, including:	2,451.883	2,700.496	3,220.002
Ash (inorganic dust SiO ₂ – 70–20%)	520.195	528.749	609.290
Nitrogen oxides (NO _x)	289.698	366.261	381.310
Sulfur dioxide (SO ₂)	1,347.914	1,579.958	1,972.691
Carbon monoxide (CO)	108.137	72.963	105.691
Others	185.939	152.565	151.020
Karaganda CHPP-3			
Total, including:	34,946.119	30,267.124	32,838.118
Ash (inorganic dust SiO ₂ – 70–20%)	7,210.676	5,188.492	5,346.376
Nitrogen oxides (NO _x)	10,358.444	8,785.880	8,801.135
Sulfur dioxide (SO ₂)	16,704.490	15,638.848	17,927.338
Carbon monoxide (CO)	548.783	515.198	463.489
Others	123.726	138.706	299.780
Total for Karaganda Energocenter LLP	37,394.002	32,967.620	36,058.120

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ENVIRONMENTAL PROTECTION

Karaganda Energocenter LLP

Ust-Kamenogorsk CHPP LLP

Energy saving

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In accordance with the requirements of the environmental legislation of the Republic of Kazakhstan in 2018, CHPP-1 and CHPP-3 conducted an inventory of greenhouse gas emissions from burned fuel (coal, fuel oil).

The verified reports were submitted to the authorized environmental authorities in a timely manner.

For 2018, Karaganda Energocenter LLP released 6,070,392 tons (equivalent of CO₂) of greenhouse gases into the atmosphere, including:

Karaganda CHPP-1

- ◆ carbon dioxide (CO₂) – 410,008 tons;
- ◆ methane (CH₄) – 3 tons (tons of equiv. CO₂ – 57);

Waste management

In the course of production activities at CHPP-1 and CHPP-3, industrial and household wastes are generated, which are related to green and amber hazard levels.

In accordance with the requirements of the environmental legislation of the Republic of Kazakhstan for CHPP-1 and CHPP-3, regulatory documents on waste management were developed (LRW, waste management program, hazardous waste passports).

In total, the company produces more than 28 types of waste:

Waste of the amber hazard level:

- 1) used ion exchange resins;
- 2) used mercury-containing lamps;
- 3) used mercury-containing devices (thermometers);
- 4) used lead batteries;
- 5) waste of the medical center of B class;
- 6) oily rags;
- 7) used car filters;
- 8) waste oil;
- 9) containers from under paintwork materials;
- 10) used wooden railway sleepers;

Waste of the green hazard level:

- 1) bottom-ash waste;
- 2) non-ferrous scrap;
- 3) ferrous scrap;
- 4) stubs of welding electrodes;
- 5) used tires;
- 6) household solid waste;
- 7) used air filters;
- 8) food waste;
- 9) thermal insulation waste;
- 10) construction waste;

- ◆ nitrous oxide (N₂O) – 5 tons (tons of equiv. CO₂ – 11,605);

Karaganda CHPP-3

- ◆ carbon dioxide (CO₂) – 5,633,202 tons;
- ◆ methane (CH₄) – 40 tons (tons of equiv. CO₂ – 843);
- ◆ nitrous oxide (N₂O) – 80 tons (tons of equiv. CO₂ – 24,677).

As a result of its activities, Karaganda Energocenter LLP does not release ozone-depleting substances that affect climate change.

- 11) waste from the operation of office and electronic equipment;
- 12) used workwear;
- 13) crop waste;
- 14) wood processing waste;
- 15) rubber products waste;
- 16) insulating materials waste;
- 17) abrasive metal dust;
- 18) abrasive products scrap.

In 2018, CHPP-1 and CHPP-3 produced a total of 1,547,189.470 tons of industrial and household waste, including: amber waste – 188.712 tons and green waste – 1,547,000.758 tons.

In accordance with the requirements of the environmental legislation of the Republic of Kazakhstan and regulatory documents, the Company records generation, permits, accumulation, storage, alienation of industrial and household waste.

In 2018, 17.233 tons of industrial and household waste were disposed, recycled and reused at industrial sites of plants, 4,926.274 tons of waste were transferred to the third-party organizations on a contractual basis, 1,542,245.963 tons of the bottom-ash waste were stored.

Bottom-ash waste of CHPP-1 is placed on an ash disposal area of 24 hectares, which is a hydraulic structure. In 2016, the State Institution “Department of State Assets and Procurement of the City of Karaganda” transferred to Karaganda Energocenter LLP on a contractual basis for the trust management of an ash disposal area of 40 ha. In accordance with the project, the end of operation of these ash disposal areas is planned for 2027–2028.

Bottom-ash waste of CHPP-3 is stored in the 1st and 2nd sections of the ash disposal area No. 2 with an area of 188.5203 ha. The service life of the 1st and 2nd sections of the ash disposal area No. 2 ends in 2020. In 2016, IP INFORM TECH developed a project “Reconstruction of the ash disposal area No. 2 of the Karaganda CHPP-3 by increasing the enclosing dam of the 3rd section.” The implementation of this project will extend the service life of the ash disposal area No. 2 by 3.5 years.

Water resources

In accordance with the technological process, CHPP-1 and CHPP-3 have a circulating water supply system. To compensate for losses in the circulating system of water supply and household needs at CHPP-1 and CHPP-3, the drinking water quality is used. At CHPP-1, the water comes from ArcelorMittal Temirtau JSC and Karagandy Su LLP. The water consumption of CHPP-1 in 2018 amounted to 607,279.971 tons, including: from ArcelorMittal Temirtau JSC – 521,715 tons, Karaganda Su LLP – 85,564.971 tons. Of them: consumption for technological needs amounted to 564,533.971 tons, for household needs – 42,746 tons. The circulating water supply of CHPP-1 in 2018 amounted to 3,207.6 thousand tons, reuse – 564.5 thousand tons.

Water supply of the Karaganda CHPP-3 is carried out on a contractual basis from the treatment facilities of Karaganda Su LLP.

The water consumption of CHPP-3 in 2018 amounted to 16,381,479.915 tons, including 16,117,807,705 tons for technological needs, and 263,672.210 tons for household needs. At the same time, the circulating water supply in the cycle of CHPP-3 amounted to 626,430 thousand tons, reuse – 1,679 thousand tons.

Land resources

The main impact on soil re-pollution can have the bottom-ash waste generated during the combustion of fuel in the boiler furnaces and stored in the ash disposal areas of CHPP-1 and CHPP-3. In order to prevent the risk of soil contamination at the plants, the annually measures are taken to prevent dusting of the ash disposal areas.

At the end of the heating season, at CHPP-1 to prevent dusting of the ash disposal area, the work is carried out to coat the bottom-ash waste with loamy soil (loam layer min 30 cm).

At the ash disposal area of CHPP-3 in order to prevent dusting of the bottom-ash waste daily monitoring of

Total as of December 31, 2018, 9,299,469.828 tons of the bottom-ash waste was accumulated at the ash disposal area of the plants, of which:

- ◆ CHPP-1 – 871,869.288 tons;
- ◆ CHPP-3 – 8,427,600.540 tons.

At the same time, payments for emissions under disposal of the bottom-ash waste in 2018 amounted to KZT 61.4 million.

In 2018, income from the sale of industrial and household waste amounted to KZT 12.6 million.

Household wastewaters of CHPP-1 and CHPP-3 are discharged on a contractual basis to the treatment facilities of Karagandy Su LLP. Discharges to the terrain and water bodies are not carried out.

During the production environmental control at the stations, the quality of the incoming water is continuously monitored from Karagandy Su LLP and ArcelorMittal Temirtau JSC, as well as the SWS. According to the results of the monitoring, the incoming and transferred water meets the sanitary and epidemiological requirements.

Every month, the sampling is carried out at the plants of sewage from fecal and storm sewerages, clarified water coming from the ash disposal areas, circulating water. The quality of these waters meets the requirements of OMR.

In accordance with the requirements of the Water and Environmental Codes of the Republic of Kazakhstan, surface and ground waters are monitored in the ash disposal areas of CHPP-1 and CHPP-3. According to the results of the monitoring conducted by an independent accredited organization in 2018, no significant impact on groundwater and surface water was detected.

the water level in the bowl and alluvial of ash beaches is conducted.

According to the results of the monitoring of the soil cover, conducted in 2018 by an independent accredited organization, no significant impact of CHPP-1 and CHPP-3 on soil resources was detected.

Key indicators	Key events of the year 2018 and realization of priority tasks	Strategy	Corporate governance	Information policy and marketing activity	Environmental Protection
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Ust-Kamenogorsk CHPP LLP

Ust-Kamenogorsk CHPP LLP is an essential service enterprise in Ust-Kamenogorsk, the main activity of which is the heat and power production. In addition to providing heat to the residential sector of Ust-Kamenogorsk, the company is a source of heat and power for a number of

Environmental Policy

As an essential service support enterprise in Ust-Kamenogorsk, Ust-Kamenogorsk CHPP LLP seeks to maintain a balance between reliable heat supply, environmental safety of production and social responsibility of business. Preserving a favorable environment by preventing its pollution and improving quality indicators in the field of ecology, as well as rational use of energy resources, are the priority objectives of an integrated enterprise policy in the field of quality, ecology, energy management, health protection and occupational safety.

To achieve the goals of an integrated policy, an integrated management system has been implemented and is successfully functioning at the enterprise, based on the operation of four international standards: ISO 9001; ISO 14001; ISO 50001; OHSAS 18001, which allows you to be on the path of continuous improvement of its activities. The environmental management system, which is part of the integrated management system, has been implemented and operated in Ust-Kamenogorsk CHPP LLP since 2008. In 2018, Ust-Kamenogorsk CHPP LLP successfully passed the inspection check of the integrated management system, confirmed the compliance of the functioning environmental management system with requirements of the international standard ISO 14001: 2015 (ST RK ISO 14001-2016).

As part of the company's environmental management system, the list of environmental aspects of divisions and the enterprise as a whole is updated annually, lists of environmental risks and opportunities associated with significant environmental aspects are defined, goals and objectives are set in the field of environmental protection, and their performance is assessed annually. The staff of Ust-Kamenogorsk CHPP LLP, as well as contractors, is regularly trained for current environmental requirements:

- ◆ instructions are carried out in structural units of the station;
- ◆ monthly days of safety and environmental issues;
- ◆ newly hired personnel is being trained as part of new courses at the Corporate Training Center (CTC);
- ◆ personnel of contracting organizations before the start of work on the territory of the station must undergo a training course at CTC, where they familiarize themselves with current environmental requirements.

industrial enterprises in the city (UKMC Kazzinc LLP, UMP JSC and others). In the process of production activities, coals of Kazakhstan deposits are used. Environmental safety of production is one of the priorities in the business of Ust-Kamenogorsk CHPP LLP.

Ust-Kamenogorsk CHPP LLP operates in accordance with requirements of the environmental legislation of the Republic of Kazakhstan, carries out environmental measures to reduce the environmental impact of the enterprise. The plan of measures for environmental protection has been agreed with the Committee for Environmental Regulation and Control of the Ministry of Energy of the Republic of Kazakhstan.

In 2018, Ust-Kamenogorsk CHPP LLP implemented the following measures to protect the environment in 9 areas of environmental activities:

- 1) reconstruction of the 5/2 conveyor discharge outputs;
- 2) reconstruction of fuel supply aspiration systems;
- 3) inspection of boiler unit at st. No. 15 to determine the possibility of reducing emissions of nitrogen oxides with obtaining an expert opinion on the choice of a design solution;
- 4) development and implementation of a project to reduce emissions of nitrogen oxides by a boiler unit at station No. 15;
- 5) main repair of boiler unit at st. No. 13 with the replacement of the 1st stage air heater;
- 6) replacement of the swirler emulsifiers of boiler units at st. No. 13, 15;
- 7) maintenance of an automated emission control system;
- 8) reconstruction of car dumper No. 1 with the provision of dust cleaning and retrofitting of car dumper No. 2;
- 9) inventory of greenhouse gas emissions;
- 10) verification of the greenhouse gas inventory report by an independent accredited organization;
- 11) restoration of the fan cooling tower;
- 12) monitoring of wastewater emissions and monitoring of a water body;
- 13) acquisition of sets to eliminate and prevent the spills of pollutants (sorbents);
- 14) landscaping of the territory;
- 15) design and implementation of preparatory works for construction of a new ash dump;
- 16) reconstruction of the ash dump No. 3;
- 17) use of ash and slag waste, including as a building material in the reconstruction of the ash dump No. 3;
- 18) main repair of gold pipelines;
- 19) transfer of mercury-containing lamps, used transport tires and rubber products for disposal;

- 20) utilization of abandoned pollution from the land plot allocated for the construction of the ash dump No. 5;
- 21) radiation monitoring of solid fuels;
- 22) observational audit of the environmental management system;
- 23) monitoring the deformation of the land surface in the area of the ash dump No. 3;
- 24) conducting environmental studies: environmental monitoring (monitoring of environmental quality) at the location of the ash dump and industrial site;
- 25) pumping wells and water sampling at the location of the ash dump and industrial site;
- 26) determination of environmental pollution level in the area of the ash dump;
- 27) carrying out field measurements and research at the border of SPZ of the ash dump No. 3;
- 28) advanced training of specialists in the field of environmental protection;

Atmospheric air protection

The main activity of Ust-Kamenogorsk CHPP LLP is heat and power production. In accordance with the sanitary and epidemiological requirements for the establishment of a sanitary protection zone of production facilities (approved by MNE of the Republic of Kazakhstan dated March 20, 2015, No. 237), the enterprise belongs to the 1st hazard class with the size of a regulatory sanitary protection zone of 1,000 meters. In accordance with the Environmental Code of the Republic of Kazakhstan, Ust-Kamenogorsk CHPP LLP is a category I facility.

In 2018, emissions to the environment by Ust-Kamenogorsk CHPP LLP were carried out on the basis of a permit for emissions to the environment for 2018–2019 dated December 11, 2017, No. KZ17VCZ00145585.

In previous years, Ust-Kamenogorsk CHPP LLP implemented the following significant environmental measures:

- ◆ in the period from 2004 to 2012, the ash collecting plants were replaced in all nine boiler units of the station with 2nd generation emulsifiers. The implementation of this measure allowed to increase the efficiency of coal ash collection from flue gases up to 99.1%. At the same time, this allowed to increase the efficiency of sulfur dioxide trapping without adding special reagents;

29) environmental advertising, promotion and education.

The actual costs of implementing measures for environmental protection in 2018 were 1,150.687 million KZT.

According to the results of an independent rating based on the outcomes of 2018, Ust-Kamenogorsk CHPP LLP was recognized as the best enterprise in the region according to the "Transparency of Reporting" criterion. The company was awarded the sign of high transparency of environmental reporting "Environmental reporting disclosed".

In 2018, Ust-Kamenogorsk CHPP LLP became the holder of a certificate of appreciation for mutually beneficial cooperation and support of activities aimed at promoting the principles of sustainable development in the business environment in Kazakhstan. The certificate was issued by the Kazakhstan Association of Natural Resources Users for Sustainable Development.

- ◆ in the period from 2009 to 2013, burners were reconstructed at high-pressure boilers (stations No. 11–15) reconstructed with the use of high-concentration dust supply technology to reduce emissions of nitrogen oxides into the atmosphere. This allowed to reduce the concentration of nitrogen oxides in the exhaust flue gases down to 20%.

At Ust-Kamenogorsk CHPP, all acceptable best available technologies have been introduced in accordance with the list approved by Order No. 155 of the Minister of Energy of the Republic of Kazakhstan as of November 28, 2014.

Ust-Kamenogorsk CHPP LLP exercises industrial environmental control (IEC) of emissions into the environment based on the developed program of industrial environmental control. IEC is carried out by its own sanitary-industrial laboratory accredited for compliance with requirements of GOST ISO/IEC 17025-2009 in accordance with requirements of the legislation of the Republic of Kazakhstan, as well as with assistance of accredited laboratories of external organizations.

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The total emissions from stationary sources in 2018 were 14,853 tons, with the established standard of 15,714 tons per year.

In 2018, the accrued tax payments for emissions of pollutants into the atmosphere from stationary sources were 197,498 thousand KZT, from mobile sources (transport) – 734 thousand KZT.

Pollutant emissions (tons/year)	2016	2017	2018
Ust-Kamenogorsk CHPP LLP			
Total, including:	11,832.703	13,917.538	14,853.291
Sulfur dioxide (SO ₂)	6,431.016	7,521.222	7,976.945
Nitrogen Dioxide (NO ₂)	3,335.263	3,770.589	4,014.725
Nitric oxide (NO)	541.972	613.549	652.393
Ash (inorganic dust 70–20% SiO ₂)	1,405.216	1,853.949	2,062.245
Carbon monoxide (CO)	96.118	135.244	121.710
Other	23.118	22.985	25.273

According to the results of the inventory of greenhouse gas emissions in 2018, the amount of greenhouse gas emissions was:

- ◆ carbon dioxide (CO₂) – 2,651,653.316 tons;

- ◆ methane (CH₄) – 19.097 tons (401.041 tons of CO₂ equivalent);
- ◆ nitrous oxide (N₂O) – 37.943 tons (11,762.388 tons of CO₂ equivalent).

Waste management

In the course of the production activity of Ust-Kamenogorsk CHPP LLP, production and consumption waste is generated that relates to green and amber hazard levels.

In accordance with requirements of the Environmental Legislation of the Republic of Kazakhstan, Ust-Kamenogorsk CHPP LLP developed regulatory documents on waste management (waste disposal standards, hazardous waste passports, waste management program), and complies with the environmental legislation of the Republic of Kazakhstan on the waste management.

In total, the company produces 27 types of waste, including:

Waste of the amber hazard level:

- 1) used mercury-containing lamps;
- 2) used transformer oil;
- 3) used turbine oil;
- 4) used diesel oil;
- 5) industrial waste oil;
- 6) waste lubricant-coolant;
- 7) oil sludge;
- 8) lead-acid batteries, whole or broken;
- 9) oiled rags;
- 10) waste sealing fluid;
- 11) precipitation of treatment facilities;
- 12) acidic solutions;

Waste of the green hazard level:

- 1) ash and slag waste;
- 2) scrap metal;
- 3) brass waste and scrap;
- 4) copper waste and scrap (cable waste);
- 5) aluminum waste and scrap (cable waste);
- 6) cationic resins from sewage treatment plants;
- 7) waste rubber products;
- 8) waste lining equipment and pipelines;
- 9) wood waste;
- 10) waste and scrap plastics;
- 11) construction and repair works waste;
- 12) electronics scrap;
- 13) paper and cardboard waste;
- 14) municipal solid waste;
- 15) broken glass and other waste glass.

In 2018, Ust-Kamenogorsk CHPP generated a total of 224,005.16 tons of waste, including:

- ◆ waste of the amber level – 26,251 tons;
- ◆ waste of the green level – 223,978.909 tons.

In 2018, 153,626.85 tons of waste were reused, 2,648.144 tons were transferred to external organizations under contracts, 2,848 tons were disposed by co-incineration with coal, 221,717.508 tons of ash and slag waste was placed in ash disposal area No. 3.

As of January 1, 2019, 1,996,916 tons of ash and slag wastes were accumulated at the existing ash dump No. 3 of Ust-Kamenogorsk CHPP LLP.

Ash and slag wastes are disposed in the existing ash disposal area of 31.6 hectares.

In 2017, a working draft of the reconstruction of the existing ash dump No. 3 was developed, providing building up the dam and extending its service life.

Water resources

The existing system of technical water supply for CHPP is direct-flow and circulating with a fan cooling tower.

The source of water supply of Ust-Kamenogorsk CHPP LLP is the Ulba river (own water intake), water recycling system, network of Oskemen-Vodokanal SE and Atamanovsky water intake of Ulba Metallurgical Plant (UMP) JSC.

Technical water from the Ulba river is used to cool the main and auxiliary equipment; feeding the circulating hydraulic ash handling system; cooling tower feed; water transfer to third parties; replenishment of steam and condensate losses in medium pressure boilers. Drinking quality water from the Oskemen-Vodokanal SE is used to feed the city's heating networks (Ust-Kamenogorsk Heating Networks JSC) and for the drinking-water needs of CHPP. Artesian water of UMP JSC is used for technological needs of CHPP (to compensate for steam losses to consumers of UMP JSC, Kazzinc LLP), to feed the city heat networks (Ust-Kamenogorsk Heating Networks JSC).

In the direct-flow cooling system, the water after discharge of the cooling cycle of the main and auxiliary equipment is discharged to the Ulba river.

In the circulating water supply system, a cooling tower used in 2012 is used as a cooler.

The volume of water consumption in 2018 was 38,599.2 thousand m³, including:

- ◆ from the Ulba river – 28,958.3 thousand m³;
- ◆ from networks of Oskemen-Vodokanal SE – 4,320.5 thousand m³;
- ◆ artesian water of UMP JSC – 5,320.4 thousand m³.

Land resources

To determine the impact of the enterprise's activities on land resources, according to the IEC program, the concentration of pollutants in the soil is monitored in the area of the ash dump. According to the results of 2018 soil monitoring, the influence of activities of Ust-Kamenogorsk CHPP LLP on soil resources is estimated as acceptable.

To determine the dust load of the ash dump No. 3 on the adjacent territory, the snow cover is monitored.

In 2018, works started on increasing the ash dump dams, including through the use of accumulated ash and slag waste. Completion of the reconstruction phase is scheduled for 2019. At the same time, work is underway to prepare for the construction of a new ash dump No. 5.

Accrued tax payments for the disposal of ash and slag waste in 2018 were 17,597 thousand KZT.

Used for technological needs of the station: 33,819.0 thousand m³.

Used for drinking needs: 169.5 thousand m³.
Transferred to third-party consumers: 4,610.7 thousand m³.

Regulatory clean wastewater is formed by cooling the main and auxiliary equipment and is partially sent to the circulating system of technical water supply with a cooling tower, partially discharged into the Ulba river through the outflow No. 162. Drainage in the Ulba river (outflow No. 162) is carried out through a closed collector.

The volume of discharge of regulatory clean wastewater into the Ulba river for 2018 was 25.266 million m³. The magnitude of the discharge of pollutants (oil) in the Ulba river for 2018 was 0.832 tons with the established standard of 1.95 tons.

Tax payments for the discharge of pollutants into the water body were not made, since the enterprise did not affect the pollution of the water body (the content of pollutants in the discharged water did not exceed the background content of the water source in the diverted water).

In accordance with the program of industrial environmental control, the enterprise monitors emissions of pollutants into a water body (the Ulba river), as well as controls pollution of groundwater through observation wells in the area of the ash dump and industrial site.

According to the 2018 IEC results, the company operated in compliance with the established standards for wastewater discharges, the impact on the pollution of the company's groundwater is insignificant and is rated as acceptable.

According to the results of snow cover monitoring in 2018, the impact on the adjacent territory is insignificant and is estimated as acceptable.

Energy saving

Karaganda Energocenter LLP

The main task of energy saving and energy efficiency of Karaganda Energocenter LLP is to reduce the amount of energy consumed, including reducing energy consumption for own needs, reducing specific resource expenditures for the production of power and heat, reducing fuel resources for heat and power, improving the mechanisms for monitoring energy consumption and equipping Karaganda Energocenter LLP with power and heat metering devices.

In 2018, Karaganda Energocenter LLP implemented a number of organizational and technical actions aimed at the rational use of energy resources.

1. Introduction of oil-free mode of operation of hot water boilers PTVP-100 at Karaganda CHPP-1

During 2018, hot water boilers PTVP-100 of Karaganda CHPP-1 were switched to oil-free operation mode – boilers were turned off the oil heating muffle. A performance team of CHPP-1 FTE, together with the staff of CHPP-1 HPC, carried out adjustment work of water boilers with the muffle fuel oil nozzles disconnected, new performance charts of boilers were made. This led to stabilization of boilers with significant fuel oil savings. Switching water boilers to oil-free mode to the 2018 level made it possible to save fuel oil in the amount of 878 tons. The total saving of fuel oil in monetary terms was 57.8 million KZT.

2. Heating of network water in peak boilers using the own needs steam collector at Karaganda CHPP-3

In the period of low outdoor temperatures (below –20 °C) there is a need for additional heating of the supply water to a temperature above 110 °C according to the temperature schedule for the heating period. Reduced hot steam is used for heating, which leads to an increase in the specific consumption of equivalent fuel for power generation, since the generated steam does not participate in power generation, that is, the process is less efficient.

The personnel of the turbine shop of CHPP-3 slightly changed the scheme of the auxiliary steam collector, which led to the possibility of using the steam that was already used in high-pressure cylinders for heating the network water. This made it possible to additionally produce up to 50 Gcal/h of heat without loss of power production and, accordingly, without increasing fuel consumption.

As a result, this led to an additional generation of 15 thousand Gcal, which in monetary terms amounts to 24,070 thousand KZT.

3. Replacing the electric motor on the hammer crusher of the fuel and transport shop

After introduction of a new power unit TA at st. No. 6 and CA at st. No. 8 as well as expansion of the conveyor belt in 2016, an increase in the station productivity led to additional requirements for the equipment of the fuel and transport shop. The main cause were frequent overloads of hammer crusher electric motors due to increased fuel consumption. This led to the coarsening of the coal fraction supplied to bunkers of boiler units, and even more critically affected the operation of the new CA at st. No. 8 — steam load limitation and mill overload occur.

Studies have shown that reducing the coal fraction to the design parameters allows the steam load on the boiler to be restored to nominal. After that, it was decided to replace the electric motor on a hammer crusher with a more powerful one.

Currently, installation of the electric motor has been completed and adjustment work is underway.

According to preliminary calculations, this event will lead to an increase in productivity by 70 t/h.

- Thus, the following are expected:
- 1) an annual increase in steam production in the amount of 558,694.6 tons;
 - 2) additional offloading from tires (CH 11.8%) – 114,597 thousand kWh;
 - 3) coal savings due to the increase in efficiency – 2,826 tons. tons per year;
 - 4) increase in mobility and reliability of the station within the framework of the power market.

4. Optimization CA of kindling at st. No. 8 at Karaganda CHPP-3

According to statistics, in 2016–2017, the CA kindling at st. No. 8 an average of about 100 tons of fuel oil was spent, and the process from the beginning of the kindling to the inclusion in the main steam line took about 20–24 hours. This was due to the long steam heating of the boiler drum and the phased activation of the fuel oil nozzles.

After analysis, a technical decision was made to exclude steam heating and increase the consumption of fuel oil in the first stages of launch, but with observance of the drum heating speed. The decision was agreed with the manufacturer representatives and start-up organizations. A modified boiler start program was compiled.

As a result, start-up of the boiler unit at st. No. 8 takes on average no more than 60 tons of fuel oil, and the time of kindling takes no more than 9 hours.

With the number of launches in 2018 (10 launches), the annual saving effect of fuel oil was 400 tons, which in monetary terms is 35,200 thousand KZT.

Moreover, within the power market framework, a faster boiler start-up increases the station mobility, which increases the likelihood of passing test commands, as well as the rate of the reserve power rise.

In addition, in 2018, within the framework of the Action Plan for energy saving and energy efficiency, an action was implemented for reconstruction of one water heating boiler PTVP-100 at Karaganda CHPP-1. This action will save up to 4.5 thousand tons of coal per year.

In accordance with the law of the Republic of Kazakhstan “On Energy Saving and Improving Energy Efficiency” in 2014, Karaganda Energocenter LLP, based on the contract

concluded with El-Nur-Service LLP, conducted energy audit at Karaganda CHPP-1 and CHPP-3 in accordance with requirements of the Energy Audit Rules approved by the Government of the Republic of Kazakhstan dated August 31, 2012, No. 1115. Based on the audit results, an opinion on energy saving and energy efficiency improvement was issued on December 11, 2014.

Karagandy Zharyk LLP

In connection with implementation of the energy management system based on the international standard ISO 50001, Karagandy Zharyk LLP established requirements for conducting periodic energy analysis and energy planning to improve the energy efficiency of production within the current integrated management system of Karagandy Zaryk LLP.

Energy analysis is carried out on the basis of monitoring and measuring energy consumption.

INFORMATION ON THE RESULTS OF IMPLEMENTATION OF THE ACTION PLAN FOR ENERGY SAVING AND ENERGY EFFICIENCY FOR 2018, KARAGANDY ZHARYK LLP

Action name	Actual investments for the reporting period (including VAT), KZT	Actual savings from implementation of measures for the reporting period	
		Energy resource name	In kind
Disconnection in modes of small loads of transformers at substations with two or more transformers	0	power (kW-h)	1,699,199
Reduction of power consumption for own needs of substations	0	power (kW-h)	329,725
Alignment of phase loads in 0.38 kV electrical networks	0	power (kW-h)	55 952
Replacing incandescent and DRL lamps for LED lamps	20,089,345	power (kW-h)	871,717
Renovation and construction of 0.4/6–10-kV DS	353,321,890	power (kW-h)	160,834
Recertification audit	416,666	–	–
Retraining and staff development	7,160,330	–	–

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Ontustik Zharyk Tranzit LLP

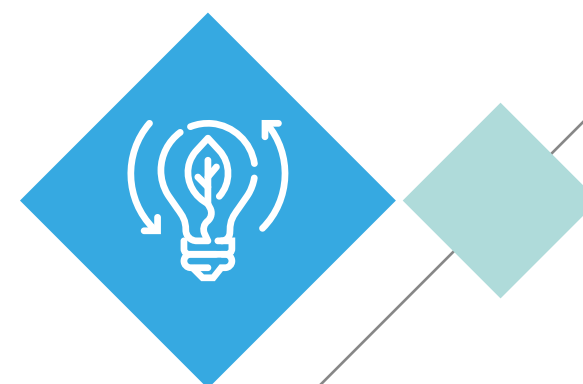
INFORMATION ON THE RESULTS OF IMPLEMENTATION OF THE ACTION PLAN FOR ENERGY SAVING FOR 2018 FOR ONTUSTIK ZHARYK TRANZIT LLP

Action name	Actual investments for the reporting period (including VAT), KZT	Actual savings from implementation of measures for the reporting period	
		Energy resource name	In kind
Replacing overloaded, installation and commissioning of additional power transformers at operating transformer substations, 10 6-kV package transformer substation	200,213	power (kW-h)	107,680
Replacement of underloaded power transformers at operating 10 6-kV TS, PTS	2,277	power (kW-h)	3,840
Replacement of wires on overloaded 10 kV overhead lines	12,319	power (kW-h)	80,730
Replacement of wires on overloaded 0.4-kV overhead lines	86,978	power (kW-h)	363,616
Replacement of wires on overloaded 0.4-kV overhead lines (using steel insulated wire)	1,305,652	power (kW-h)	1,479,386

Mangistau Regional Electricity Network Company JSC

INFORMATION ON THE RESULTS OF IMPLEMENTATION OF THE ACTION PLAN FOR ENERGY SAVING FOR 2018 FOR MANGISTAU REGIONAL ELECTRICITY NETWORK COMPANY JSC

Action name	Actual investments for the reporting period (including VAT), KZT	Actual savings from implementation of measures for the reporting period	
		Energy resource name	In kind
Replacing incandescent bulbs with compact fluorescent lamps in substation buildings and premises of MRENC JSC	2,084,320	power (kW-h)	62,100
Replacement of existing porcelain insulators with glass	29,014,000	efficiency increase	21,000
Replacement of underloaded current transformers of the power metering system at the enterprise substations	1,201,485	power (kW-h)	249,689
Replacement of outdated meters with meters having long-term memory adapted from ASCPM of MRENK JSC	3,340,000	power (kW-h)	710,544



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CONSOLIDATED STATEMENT OF INCOME AND LOSSES AND OTHER COMPREHENSIVE INCOME FOR THE YEAR, ENDED ON DECEMBER 31, 2018 (IN THOUSANDS OF KZT)

	2018	2017 (recalculated) *
Revenue	128,639,008	97,337,035
Cost of sales	(91,928,630)	(66,087,670)
Gross profit	36,710,378	31,249,365
General and Administrative expenses	(8,537,171)	(6,388,741)
Selling expenses	(2,664,901)	(2,148,142)
Finance cost	(8,631,683)	(4,812,517)
Finance income	3,687,716	652,805
Other income, net	676,690	18,773,832
Interest in profits from the associated enterprise	–	150,329
Dividend income	–	17,224
Foreign exchange loss, net	(3,316,643)	(30,268)
PROFIT BEFORE INCOME TAX EXPENSES	17,924,386	37,463,887
Income tax expense	(4,324,836)	(3,973,072)
NET PROFIT FOR A YEAR	13,599,550	33,490,815
Other comprehensive income for a year		
Items that may subsequently be reclassified to profit or loss:		
Exchange differences from recalculation of foreign units	265,151	–
OTHER COMPREHENSIVE INCOME FOR A YEAR	265,151	–
TOTAL COMPREHENSIVE INCOME FOR A YEAR	13,864,701	33,490,815
Profit attributable to:		
Company owners	12,731,185	33,490,815
Uncontrolled shares	868,365	–
	13,599,550	33,490,815
Total comprehensive income attributable to:		
Company owners	12,996,336	33,490,815
Uncontrolled shares	868,365	–
	13,864,701	33,490,815

*Recalculated to the final fair value assessment for the acquisition of Mangistau Regional Electricity Network Company JSC (Note 3).

CONSOLIDATED STATEMENT OF FINANCIAL SITUATION AS OF DECEMBER 31, 2018 (in thousands of KZT)

	December31, 2018	December31, 2017 (recalculated)*
ASSETS		
NON-CURRENT ASSETS:		
Fixed assets	215,004,134	203,751,869
Advances paid	1,905,698	3,152,062
Loans to related parties	58,511,332	–
Other non-current assets	1,030,162	885,850
Deferred tax assets	101,879	63,470
Total non-current assets	276,553,205	207,853,251
CURRENT ASSETS:		
Trade receivables	10,082,632	9,958,231
Inventories	4,194,232	3,786,086
Advances paid	1,103,116	780,574
Prepayment for Corporate Income Tax	527,282	443,120
Other current assets	1,896,114	2,916,460
Cash and cash equivalents	5,458,604	6,444,524
	23,261,980	24,328,995
Assets held for sale	–	3,125,587
Total current assets	23,261,980	27,454,582
CURRENT ASSETS	299,815,185	235,307,833
EQUITY AND LIABILITIES		
EQUITY:		
Charter capital	11,636,404	11,636,404
Additional paid-in capital	9,239,137	9,239,137
Exchange difference reserve	265,151	–
Retained earnings	109,479,603	96,714,432
Shareholders' equity of the parent company	130,620,295	117,589,973
Uncontrolled shares	10,947,184	11,514,800
Total equity	141,567,479	129,104,773
NON-CURRENT LIABILITIES:		
Bonds and borrowings	92,414,556	41,918,821
Deferred tax liabilities	30,361,273	28,913,770
Other non-current liabilities	3,057,173	3,329,667
Total non-current liabilities	125,833,002	74,162,258
CURRENT LIABILITIES:		
Bonds and borrowings	14,055,724	15,853,995
Trade payables	8,492,942	4,911,834
Other accounts payable and accrued liabilities	7,919,908	8,558,620
Other taxes payable	1,759,318	2,179,717
Corporate income tax payable	186,812	82,115
	32,414,704	31,586,281
Liabilities related to assets held for sale	–	454,521
Total current liabilities	32,414,704	32,040,802
TOTAL LIABILITIES	158,247,706	106,203,060
TOTAL EQUITY AND LIABILITIES	299,815,185	235,307,833

*Recalculated to the final fair value assessment for the acquisition of Mangistau Regional Electricity Network Company JSC (Note 3).

**CONSOLIDATED STATEMENT OF CHANGES IN OWNER'S EQUITY
FOR THE YEAR, ENDED ON DECEMBER 31, 2018**
(in thousands of KZT)

	Shared capital	Additional paid-in capital	Exchange difference reserve	Retained earnings	Equity of the participant of the parent company	Uncontrolled shares	Total
As of January 1, 2017	11,636,404	9,239,137	–	67,874,617	88,750,158	–	88,750,158
Net profit and total comprehensive income for a year (recalculated)	–	–	–	33,490,815	33,490,815	–	33,490,815
Payment of dividends (Note 23)	–	–	–	(4,651,000)	(4,651,000)	–	(4,651,000)
Acquisition of uncontrolled shares due to acquisition of a subsidiary (recalculated)	–	–	–	–	–	11,514,800	11,514,800
As of December 31, 2017 (recalculated)*	11,636,404	9,239,137	–	96,714,432	117,589,973	11,514,800	129,104,773
IFRS 9 application impact (Note 2)	–	–	–	(1,387,077)	(1,387,077)	(14,918)	(1,401,995)
Recalculated balance as of January 1, 2018	11,636,404	9,239,137	–	95,327,355	116,202,896	11,499,882	127,702,778
Net profit for a year	–	–	–	12,731,185	12,731,185	868,365	13,599,550
Other comprehensive income for a year	–	–	265,151	–	265,151	–	265,151
Total comprehensive income for a year	–	–	265,151	12,731,185	12,996,336	868,365	13,864,701
Adjustment occurring due to the change of the uncontrolled participation interest	–	–	–	1,421,063	1,421,063	(1,421,063)	–
As of December 31, 2018	11,636,404	9,239,137	265,151	109,479,603	130,620,295	10,947,184	141,567,479

*Recalculated to the final fair value assessment for the acquisition of Mangistau Regional Electricity Network Company JSC (Note 3).

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CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE YEAR, ENDED ON DECEMBER 31, 2018 (in thousands of KZT)

	2018	2017
OPERATING ACTIVITY:		
Sales of service and goods	138,865,328	108,211,180
Other proceeds	2,083,942	1,616,173
Total cash inflow	140,949,270	109,827,353
Payments to suppliers for goods and services	(78,273,105)	(57,350,977)
Payroll payments	(11,652,464)	(9,154,447)
Other payables to the budget	(10,708,690)	(8,824,951)
Other payments	(3,991,236)	(1,725,421)
Total cash outflow	(104,625,495)	(77,055,796)
Cash generated by operations	36,323,775	32,771,557
Remuneration received	274,552	189,436
Interest paid on borrowings and bonds	(7,131,984)	(5,028,043)
Corporate income tax	(2,586,231)	(1,862,819)
Net cash generated from operating activities	26,880,112	26,070,131
INVESTMENT ACTIVITY:		
Sale of fixed assets	161,848	105
Return of loans issued	166,250	–
Return of financial aid issued	–	30,000
Dividends received	–	17,224
Sale of subsidiary	543,456	1,682,059
Other cash inflows	595,884	5,000
Total cash inflow	1,467,438	1,734,388
Acquisition of fixed assets and materials for overhaul and advances issued for acquisition of non-current assets	(20,440,335)	(15,182,851)
Acquisition of intangible assets	(23,289)	(16,279)
Issue of financial aid	–	(80,000)
Outflow of cash on acquisition of subsidiaries	(1,181,312)	(7,855,315)
Other payments	(10,709)	(3,845)
Total cash outflow	(21,655,645)	(23,138,290)
Net cash used in investment activity	(20,188,207)	(21,403,902)

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE YEAR, ENDED ON DECEMBER 31, 2018 (CONTINUED) (in thousands of KZT)

	2018	2017
FINANCIAL ACTIVITIES:		
Bond issue	–	882,446
Return of financial aid given	–	8,128,000
Receipt of financial aid	2,367,003	976,224
Loans received	82,919,316	21,318,820
Contribution to the charter capital	–	48,733
Total cash inflow	85,286,319	31,354,223
Repayment of borrowings	(35,710,827)	(26,039,791)
Repayment of bonds	(1,500,000)	–
Issue of borrowing to enterprise under general control	(51,941,315)	–
Issue of financial aid to associated party	(2,980,466)	–
Return of financial aid to participant	–	(60,000)
Return of financial aid received	(776,384)	(1,125,500)
Payment of dividends	(22,923)	(4,651,000)
Other outflows	(179,620)	(25,869)
Total cash outflow	(93,111,535)	(31,902,160)
Net cash used in financial activity	(7,825,216)	(547,937)
NET CHANGE OF CASH	(1,133,311)	4,118,292
Cash and cash equivalents, as of the beginning of the year	6,496,398	2,358,941
Effects of exchange rate changes on the balances of cash held in foreign currencies	95,517	19,165
CASH AND CASH EQUIVALENTS, at the end of the year	5,458,604	6,496,398

The full version of audited consolidated financial statements for the year 2018 is available on the website of Kazakhstan Utility Systems LLP (www.kus.kz / Investors Relations / Financial Performance).

CONSOLIDATED FINANCIAL STATEMENT

[Abbreviations](#)

[Contact information](#)

Abbreviations

ACL – aerial cable line
APR – accidents prevention rules
APT – auxiliary power transformer
ASKUE – automated system for commercial accounting of electric power consumption
BWHS – boiler-water heating shop
CHPP – combined heat and power plant
CL – cable line
CPS – condensation power station
CSR – corporate social responsibility
CTC – corporate training center
DHW – domestic hot water
DP – distribution point
EBIT – earnings before interest and taxes
EBITDA – earnings before interest, taxes, depreciation and amortization
EIA – environmental impact analysis
EP – Energopotok LLP
EP – environmental protection
EPC – engineering, procurement and construction
EPPN TOR – electric power plants and networks technical operation rules

ESC – energy service company
ETL – electricity transmission line
FS – feasibility study
Gcal – gigacalorie
Gcal/h – gigacalorie per hour
GDP – gross domestic product
IDR – issuer default rating
IEC – industrial ecological control
ITS – integrated transformer substation
KASE – Kazakhstan Stock Exchange JSC
KEA – Legal Entity “Kazakhstan Electricity Association”
KEC – Karaganda Energocenter LLP
KEGOC – Kazakhstan Electricity Grid Operating Company JSC
km – kilometer
KPI – key performance indicator
KUS – Kazakhstan Utility Systems LLP
kV – kilovolt
kWh – kilowatt-hour
KZh – Karagandy Zharyk LLP
KZhs – KaragandyZhyluSbyt LLP
LE – legal entity
LLP – limited liability partnership

m – meter
MNE RK – Ministry of National Economy of the Republic of Kazakhstan
MPE – maximum permissible emissions
MRENC – Mangistau Regional Electricity Network Company JSC
MTS – municipal transformer substation
MVA – megavolt-amper
MW – megawatt
NEN – national electric network
OD HVEPS – operating department of high voltage electric power systems
OHL – overhead line
OS – occupational safety
OZh – Ontustik Zharyk LLP
OZhT – Ontustik Zharyk Tranzit LLP
PC – performance coefficient
POL – petroleum, oil and lubricants
PP – private person
PTO – power transmitting organization
REC – district electric power systems
REM – retail energy market
ROA – return on assets

ROCE – return on capital employed
ROE – return on equity
RPGC – regional power grid companies
RSC – Raschetnyi servisnyi center LLP
SB – subsidiary
SKR – South-Kazakhstan region
SPZ – sanitary protection zone
SS – substation
SSIC – self-supporting insulated conductor
TPP – thermal power plant
TR – Turkestan region
TS – transformer substation
UK CHPP – Ust-Kamenogorsk CHPP LLP
VI – volume index
WPP – wind power plant

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