



**CAEPCO**

Central-Asian  
Electric Power Corporation

## ANNUAL REPORT 2018

Performance results and development  
prospects overview

Corporate governance

Risk management

Sustainable development



**WE  
TRANSFORM  
ENERGY  
INTO LIFE**

CHRONOLOGY OF SUCCESS OF THE KAZAKHSTAN ENERGY CORPORATION



**4 | LETTER OF THE CHAIRMAN OF THE BOARD OF DIRECTORS**

Energy industry of Kazakhstan is attractive for investors

**6 | LETTER OF THE GENERAL DIRECTOR**  
CAEPCO upgraded its generating capacities by 64.5 %

**8 | KEY INFORMATION**

**8 | GEOGRAPHY OF OPERATIONS**

**8 | KEY EVENTS OF THE HOLDING FOR 2008-2018**

**14 | RECOGNITION**  
Employees' awards in 2018 in honor of the 10th anniversary of CAEPCO JSC

**15 | RESULTS OF THE INVESTMENT PROGRAM FOR 2008-2018**

**16 | BUSINESS MODEL**

**17 | PERFORMANCE INDICATORS FOR 2018**

**18 | CORPORATION BUSINESS PROFILE**

**18 | CAEPCO IS THE LARGEST PRIVATE HOLDING**

**18 | CORPORATION RATING**

**18 | MISSION**

**18 | VISION**

**19 | CORPORATION STRUCTURE**

**19 | VALUES**

**20 | SUBSIDIARIES**

**20 | MAIN PRODUCTION CHARACTERISTICS**



*The history of CAEPCO JSC started in 2008 is inextricably connected with the development of the electricity sector of Kazakhstan. Basic performance indicators of the Corporation, achievements and projects implemented over the past decade in the industrial and social spheres are our contribution to the energy sector and the development of regions. In this report, we propose you to review the main events of CAEPCO JSC that had an impact on activities from 2008 to 2018, as well as to learn about our prospects and plans for the future.*

**22 | 2016-2020 DEVELOPMENT STRATEGY**  
CAEPCO will continue its active operations

**22 | MAIN DIRECTIONS**

**23 | PROSPECTS OF THE INVESTMENT PROGRAM IMPLEMENTATION UNTIL 2020**

**24 | MARKET ANALYSIS**

**24 | ECONOMIC OVERVIEW**

**25 | ENERGY SECTOR OVERVIEW**

**26 | PERFORMANCE RESULTS AND DEVELOPMENT PROSPECTS OVERVIEW**

**26 | ELECTRIC POWER GENERATION**

**27 | PROJECTS IMPLEMENTED IN 2018**  
Renovation of 91 % of turbine generators at Pavlodar CHP-3

**30 | ELECTRIC POWER TRANSMISSION**

**31 | HEAT TRANSMISSION**

**32 | EQUIPMENT RECONSTRUCTION AND MODERNIZATION PLANS FOR 2019**

**32 | PROCESS AUTOMATION**

**35 | ACTIVITIES OF SALES COMPANIES IN 2018**  
Customer convenience is our main priority

**38 | PROCUREMENT AND SUPPLY**  
Our objective is high efficiency and transparency of procurement

**39 | FINANCIAL AND ECONOMIC INDICATORS**  
Focus on efficiency

**44 | CORPORATE GOVERNANCE**  
Over 10 years, we have built an effective corporate governance system

**44 | GENERAL MEETING OF SHAREHOLDERS**

**44 | RESULTS OF THE GENERAL MEETING OF SHAREHOLDERS**

**44 | INFORMATION ON DIVIDENDS**

**45 | BOARD OF DIRECTORS**

**45 | SELECTION AND APPOINTMENT**

**46 | MEMBERS OF THE BOARD OF DIRECTORS**

**48 | ORGANIZATIONAL STRUCTURE**

**48 | SHARE CAPITAL STRUCTURE**

**49 | PERFORMANCE OVERVIEW OF THE BOARD OF DIRECTORS**  
CAEPCO has implemented the investment program at a high level

**50 | PERFORMANCE OVERVIEW OF THE COMMITTEES OF THE BOARD OF DIRECTORS**

**51 | EXECUTIVE BODY**

**52 | CORPORATE GOVERNANCE CODE COMPLIANCE REPORT**

**52 | CONFLICT OF INTEREST**

**53 | CORPORATE ETHICS**

**53 | EXTERNAL AUDIT**



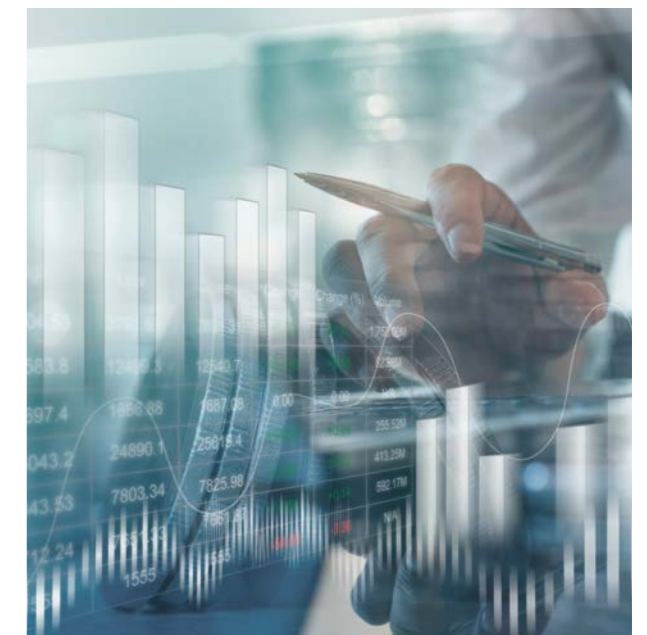
**54 | RISK MANAGEMENT AND INTERNAL CONTROL**

**54 | INTERNAL CONTROL AND AUDIT**

**54 | CORPORATE RISK MANAGEMENT SYSTEM**

**55 | INTERNAL CONTROL STANDARDS**

**56 | ANALYSIS OF SIGNIFICANT RISKS AFFECTING PERFORMANCE**



**58 | SUSTAINABLE DEVELOPMENT**

**58 | STAKEHOLDER ENGAGEMENT**

**60 | SOCIAL PROJECTS**

**62 | HUMAN RESOURCES AND SOCIAL POLICY**  
PROFENERGY – our contribution to the development

**70 | INFORMATION POLICY**

**72 | ENVIRONMENTAL POLICY**

**76 | OCCUPATIONAL HEALTH AND SAFETY**

**80 | CORPORATE EVENTS**

**82 | ABOUT THE REPORT**

**82 | LIST OF TOPICS AND MATERIALITY MAP**

**84 | GRI ELEMENT INDEX**

**88 | FINANCIAL STATEMENTS**

**94 | GLOSSARY**

**97 | CONTACTS**



## “ ENERGY INDUSTRY OF KAZAKHSTAN IS ATTRACTIVE FOR INVESTORS

In 2018, CAEPCO celebrated the 10th anniversary of its activities in the electric power market of Kazakhstan. Throughout these years, the Company has been demonstrating steady growth and holding leading positions in many respects.

**ALEXANDER KLEBANOV,**  
 CHAIRMAN OF THE BOARD OF DIRECTORS OF CAEPCO JSC

— **What are the factors promoting the development of the energy industry in the country?**

— Successful implementation of the outlined plans became possible due to the development of energy facilities, which provide a stable energy supply throughout the years of independence of Kazakhstan. Nursultan Nazarbayev, the first President of Kazakhstan, defined the development of the republican energy infrastructure as one of the key objectives while repeatedly noting the importance of attracting investors into modernization of the housing and utilities sector. In furtherance of the instruction of the President, in 2009, the Government adopted a rate limiting program, which significantly increased the investment attractiveness of the entire electric power industry of Kazakhstan.

— **What investors could CAEPCO attract?**

— The European Bank for Reconstruction and Development (EBRD) became our key partner by acquiring a share in the capital of CAEPCO to support projects for the modernization of generating assets. Also, during the period of its formation, the Corporation attracted equity from the Islamic Infrastructure Fund and Baiterek National Managing Holding. Due to the partnership with international institutional investors, CAEPCO has become the largest vertically integrated private company in the power sector of Kazakhstan. Over the entire period of 10 years, we have been working with shareholders who contributed their experience and the highest standards to activities of CAEPCO.

— **What are the results achieved by the Corporation over 10 years after the rate limiting program was launched?**

— Enterprises of the Holding have implemented a number of major investment programs for renovation, modernization and construction of energy generating facilities ensuring thereby the comprehensive resolution of issues of financing, technical expertise

and subsequent operation of facilities. Over 10 years, we have upgraded 64.5 % of our generating capacities, which allows improving energy security in the regions of our operations.

It is worth noting the results in such an important area of activity as corporate social responsibility. With the support of local administration (akimats), we have built infrastructure objects that are important for the areas of our operations - Pavlodar and North Kazakhstan regions: a kindergarten, a hostel, a student house, a tennis center and other objects. In 2018, through the subsidiary PAVLODARENERGO, we took part in the implementation of the project for swimming pool construction in Usolsk district of Pavlodar city, and an apartment building will be commissioned in Pavlodar in 2019.

— **What events of 2018 could you mention as strategically significant for the Corporation?**

— In December 2018, according to the long-term development strategy of CAEPCO, shares of the EBRD and IIF were repurchased by CAPEC, which currently owns 92.75 % of the company's shares. Also, a strategic investor represented by the Baiterek Holding's funds remains a shareholder of the Corporation. It is also important to note that the EBRD will continue cooperation with CAEPCO and will remain one of the partners in projects for modernization of the regional heat supply system.

The past year ends an important development cycle and thereby opens a new stage in the life of the Corporation. We will continue our activities relying upon high standards of corporate governance, accumulated experience and professionalism of our employees. The Corporation will invest funds in the modernization of production facilities and construction of social facilities, as well as the promotion of sustainable growth, which ultimately will improve the quality of life of our consumers and create favorable conditions for economic growth in regions.





## “ CAEPCO UPGRADED ITS GENERATING CAPACITIES BY **64.5 %**”

One of the key events in the power industry of Kazakhstan over the past 10 years is the adoption of the rate limiting program, which allowed the power market participants to commence the implementation of investment projects to upgrade the fixed assets of the industry.

**SERGEY KAN,**  
GENERAL DIRECTOR OF CAEPCO JSC

**– In your opinion, what is an important outcome of the limiting rate program?**

– From 2009 to 2015 - the validity period of the rate limiting program - the generating facilities with a total capacity of about 3,791 MW were modernized, restored and put into operation in the republic. Over the years, the Corporation's share amounted to 14.9 % of the total indicator. The program implementation has allowed reducing the number of emergency shutdowns of generating units at power plants throughout the country.

**– What are the results achieved after continuing the program implementation?**

– From 2016 to 2018, CAEPCO introduced another 220 MW of upgraded and new capacities. In 2009–2018, generating capacities of CAEPCO were upgraded by 64.5 %, which is one of the highest indicators among energy companies of the country. It is important to note that Pavlodar CHP-3 is the only CHP in Kazakhstan upgraded by 70 %, in particular, the turbine room of the plant was upgraded by 91 %. Since 2009, CAEPCO has allocated KZT 209 bln for modernization projects, taking into account all investment programs and borrowings. In 2018, the Corporation implemented another major project – modernization of the turbine No. 6, the most powerful unit of the CIS and Europe driven by vibration insulators.

**– What is the priority in the implementation of projects?**

– Ecological parameters have always been and remain an absolute priority: ash emissions at heat power plants reduced by 70 % from 50,6 thousand tons in 2008 to 14.3 thousand tons in 2018. Achievement of such indicators became possible due to modernization of generating equipment.

*I would like to especially note that an important goal of the Holding's activities is to increase the level of*

*occupational health and safety. In this direction, special attention is paid to injury prevention and improving the labour conditions for employees.*

*It is important to note that CAEPCO JSC actively cooperates with state authorities and Atameken National Chamber of Entrepreneurs through the participation in the discussion and implementation of important state initiatives. One example is the implementation of projects for the reconstruction of heat supply systems in Pavlodar, Ekibastuz and Petropavlovsk within the framework of Nurlı Zhol state program.*

*We pay special attention to the introduction of innovative solutions and process automation. In 2015, the Holding commissioned its own Data Processing Center (DPC), which includes all of its key information systems. A single perimeter of DPC communication, computing and engineering systems makes it possible to maintain the operation of IT-services of the Holding on a 24/7/365 basis. In 2018, a new data storage system was introduced to accelerate data processing, improve fault tolerance and expand disk space. Server capacities of ASCAE system for the retail electric power market were transferred to the DPC platform, centralized electronic document management systems and process automated control system were put into operation.*

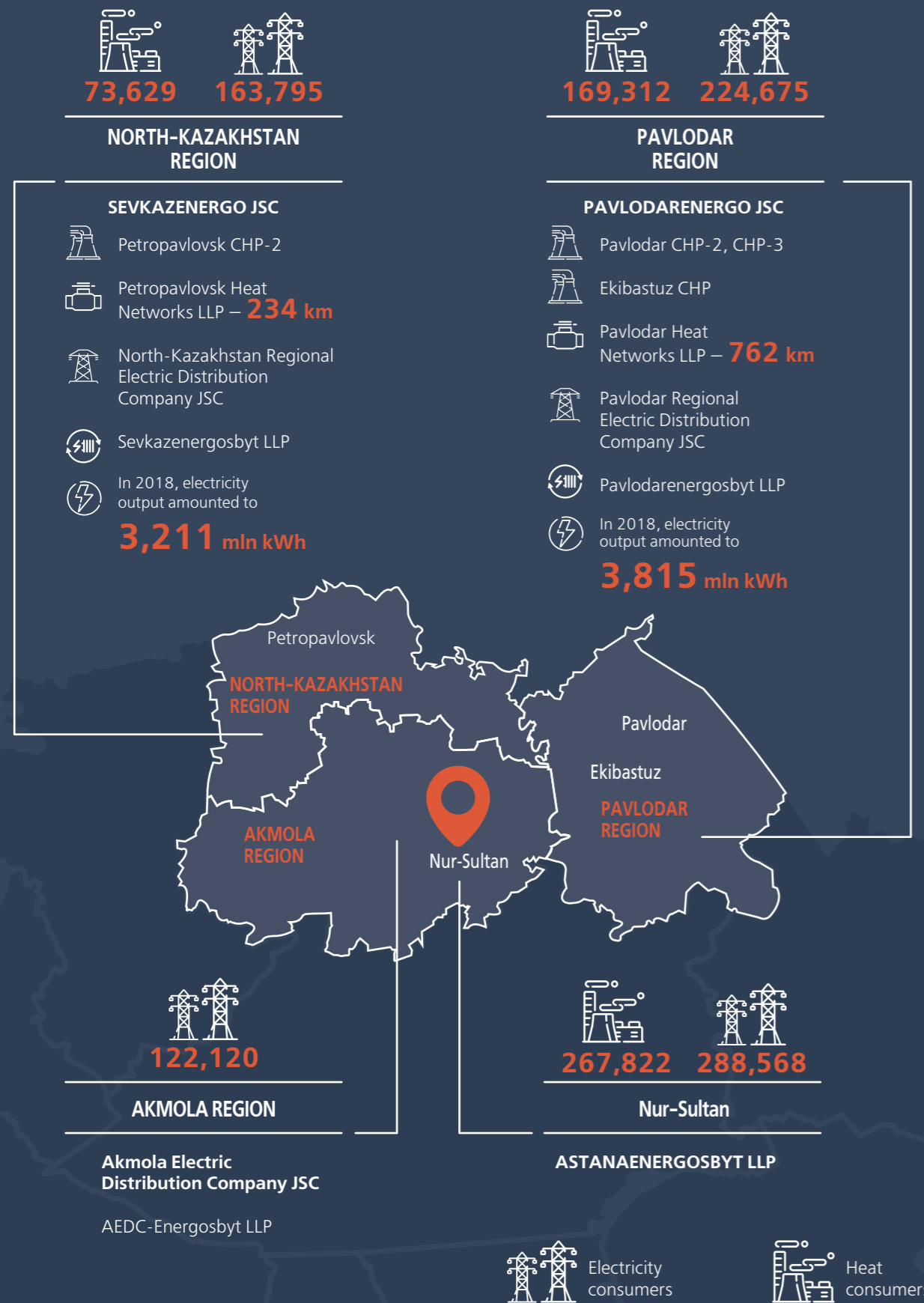
**– What are the plans of CAEPCO for further investment?**

– In 2019, we plan to complete a transaction for purchase of CAPEC Green Energy LLP - this company is constructing the first phase of a wind power plant in Akmola region with a total capacity of 100 MW. We are building a diversified electric power holding and, therefore, in the future we intend to develop both coal-fired power and renewable energy sectors by actively applying innovations and improving the environmental parameters of the plants.





GEOGRAPHY OF OPERATIONS



# 10 YEARS OF TRANSFORMING ENERGY INTO LIFE!

## KEY EVENTS OF THE HOLDING FOR 2008-2018



Central-Asian Electric Power Corporation Joint-Stock Company was founded, which united SEVKAZENERGO JSC, PAVLODARENERGO JSC and Astanaenergosbyt LLP. The sole founder at the date of registration was Central-Asian power-energy company JSC.

2008 ▶▶



TURBINE GENERATOR NO. 1 WAS RECONSTRUCTED AT EKIBASTUZ CHP

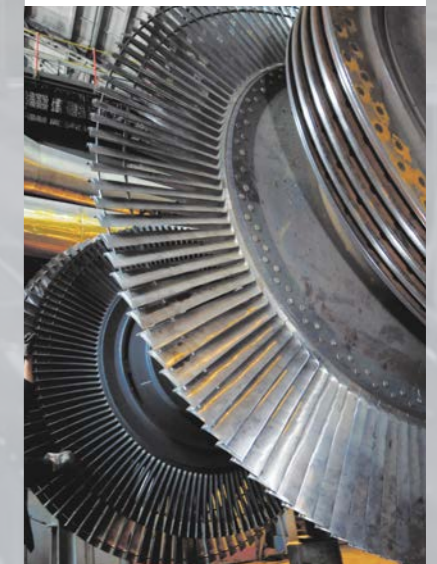
The European Bank for Reconstruction and Development purchased a 24.99 % stake in CAEPCO JSC.



2009 ▶▶



The investment program was approved for 2010-2015.



2010 ▶▶



KEY EVENTS OF THE HOLDING FOR 2008-2018



BOILER NO. 1 WAS RECONSTRUCTED AT PAVLODAR CHP-2  
NEW BOILER NO. 1 WAS PUT INTO OPERATION AT PAVLODAR CHP-3

The Islamic Infrastructure Fund (Kaz Holdings Cooperatief U.A., Amsterdam) became a shareholder of CAEPCO.



A risk management system was introduced in CAEPCO Group of companies.

The Energetik tennis center was built at the expense of the shareholder of CAEPCO JSC – CAPEC JSC with the support of PAVLODARENERGO JSC.

2011 ▶▶



NEW TURBINE GENERATOR NO. 1 WAS PUT INTO OPERATION AT PAVLODAR CHP-3

NEW COOLING TOWER NO. 2 WAS PUT INTO OPERATION AT PAVLODAR CHP-2

TURBINE GENERATOR NO. 6 WAS MODERNIZED AT PETROPAVLOVSK CHP-2

BOILER NO. 6 WAS MODERNIZED AT PETROPAVLOVSK CHP-2.

BOILER NO. 7 WAS MODERNIZED AT PETROPAVLOVSK CHP-2

On November 23, CAEPCO JSC held a Strategic Session in Astana (Nur-Sultan), which was attended by top managers of the Group of companies: Corporate Center (CC), PAVLODARENERGO JSC, SEVKAZENERGO JSC, Astanaenergoby LLP and AEDC JSC.

2012 ▶▶



NEW TURBINE GENERATOR NO. 4 WAS PUT INTO OPERATION AT PETROPAVLOVSK CHP-2



CAEPCO started the implementation of a project to introduce an automatic system for commercial accounting of electricity (ASCAE).

2013 ▶▶



TURBINE GENERATOR NO. 5 WAS MODERNIZED AT PAVLODAR CHP-3

BOILER NO. 3 WAS MODERNIZED AT PAVLODAR CHP-3

NEW BOILER NO. 8 WAS PUT INTO OPERATION AT PETROPAVLOVSK CHP-2

NEW BOILER NO. 6 WAS PUT INTO OPERATION AT EKIBASTUZ CHP-2

CAEPCO acquired a 48.41 % stake in Akmola Electric Distribution Company (AEDC) and thereby consolidated 100 % of the company's shares. Earlier, a 51.59 % stake of the company was transferred to the authorized capital of CAEPCO by its controlling shareholder - Central-Asian power-energy company JSC.

According to the Expert-200-Kazakhstan rating, CAEPCO was recognized as the largest private energy company in Kazakhstan.

A representative office of CAEPCO was opened in Astana (Nur-Sultan).

CAEPCO and ALSTOM Holdings signed a memorandum of cooperation and understanding for the supply of power equipment.

2014 ▶▶



NEW TURBINE GENERATOR NO. 2 WAS PUT INTO OPERATION AT PAVLODAR CHP-3

TURBINE GENERATOR NO. 4 WAS PUT INTO OPERATION AT PAVLODAR CHP-3

BOILER NO. 2 WAS PUT INTO OPERATION AT PAVLODAR CHP-3

NEW COOLING TOWER NO. 5 WAS RECONSTRUCTED AT PAVLODAR CHP-3

NEW TURBINE GENERATOR NO. 1 WAS MODERNIZED AT PETROPAVLOVSK CHP-2

TURBINE GENERATOR NO. 7 WAS MODERNIZED AT PETROPAVLOVSK CHP-2

CAEPCO ranked among 15 national champions - competitive medium business companies of Kazakhstan.

A new power system control center of Pavlodar region was put into operation.

CAEPCO data processing center was opened in Pavlodar.

PROFENERGY program was launched in CAEPCO subsidiaries to support young professionals and attract graduates to enterprises.

Subsidiary funds of Baiterek National Managing Holding JSC - KIF ENERGY S.a r.l., Baiterek Venture Fund JSC and CKIF ENERGY S.a r.l. became shareholders of CAEPCO.

In Petropavlovsk, Alakay kindergarten was commissioned. The facility was built as part of a public-private partnership between the Akimat of the North-Kazakhstan region and the shareholder of CAEPCO JSC – CAPEC JSC with the support of SEVKAZENERGO JSC.

2015 ▶▶



KEY EVENTS OF THE HOLDING FOR 2008-2018



**BOILER NO. 5 WAS RECONSTRUCTED AT PAVLODAR CHP-3**

**NEW TURBINE GENERATOR NO. 5 WAS PUT INTO OPERATION AT PETROPAVLOVSK CHP-2**

**BOILER NO. 12 WAS MODERNIZED AT PETROPAVLOVSK CHP-2**

Adoption of 2016-2020 Development Strategy of CAEPCO JSC.

CAEPCO JSC and Ural Turbine Plant signed a memorandum (the third agreement) of cooperation in the field of modernization of generating equipment at the Corporation's plants.

CAEPCO subsidiaries signed a trilateral agreement to implement projects for the modernization of heat supply systems of Pavlodar, Ekibastuz and Petropavlovsk with the European Bank for Reconstruction and Development and the Ministry of National Economy of the Republic of Kazakhstan under Nurlı Zhol state infrastructure development program.

The information and computation software complex (INFOPRO) was put into commercial operation to support the industrial process control at Pavlodar CHP-3.

A 90-apartment small-family hostel was opened for employees of SEVKAZENERGO JSC and citizens of Petropavlovsk.

2016



A new hostel was opened for 200 energy students of Pavlodar Assembly College.



CAEPCO JSC and Korea Electric Power Corporation (KEPCO) signed a memorandum of understanding and cooperation in the field of alternative energy sources and new energy technologies development.

2017



**TURBINE GENERATOR NO. 6 WAS MODERNIZED AT PAVLODAR CHP-3**

Establishment of a new enterprise - Ekibastuzteploenergo LLP as part of PAVLODARENERGO JSC.

A new 50-meter Ertis OLYMPIC swimming pool was built and opened with the participation of CAEPCO subsidiary - PAVLODARENERGO JSC.

SEVKAZENERGO JSC became a laureate in the nomination "For Contribution to the Environment" in Paryz 2018 competition for socially responsible businesses. The awarding ceremony was attended by the Chairman of the Board of Directors of SEVKAZENERGO JSC Dyusenbay Turganov.

During the VIII annual competition in Kazakhstan, the annual report of CAEPCO JSC became the nominee (third place) in the category "Best Disclosure of Information on Sustainable Development". For the third consecutive year, the Company's annual report is among the top 5 best reports in the non-financial sector in Kazakhstan.

The European Bank for Reconstruction and Development and the Islamic Infrastructure Fund withdrew from shareholders of CAEPCO JSC.

AIDA SITDIKOVA,  
*Director of Energy Resources Department for Eurasia:*

“ – By purchasing a share in the capital of CAEPCO JSC in 2009 the EBRD pursued several objectives, including the provision of support to a newly founded private company during its establishment. This happened against the backdrop of the need to upgrade generating facilities and network systems and to improve the quality of customer service. I would like to note that the Company has successfully completed the tasks and implemented the investment program. However, any EBRD project for purchasing a share in joint stock companies has a certain life cycle. Our withdrawal from shareholders is necessary so that we can use this capital in new projects. In this regard, I can say that our mission in CAEPCO JSC has come to an end. We are proud of our long-standing cooperation; we are satisfied with our contribution to the development of the Company and will continue providing support to JSC as one of the creditors.

2018







# TRANSFORMING ENERGY INTO LIFE

## EMPLOYEES' AWARDS IN 2018 IN HONOR OF THE 10TH ANNIVERSARY OF CAEPCO JSC

### VETERAN OF LABOR MEDAL

Vladimir Baranov  
Technical Advisor, Akmolá EDC JSC

Viktor Barmin  
Director of PCHP-2, SEVKAZENERGO JSC

Inna Rizen  
Ex-Deputy General Director for Economy and Finance, PAVLODARENERGO JSC

### "FOR THE CONTRIBUTION TO THE POWER INDUSTRY" MEDAL

Sergey Kan  
General Director, Central-Asian Electric Power Corporation JSC

Dyussenbay Turganov  
First Deputy General Director, Central-Asian Electric Power Corporation JSC

Oleg Perfilov  
General Director, PAVLODARENERGO JSC

### HONORED ENERGY WORKER OF KEA TITLE

Bagdat Oral  
Deputy General Director for Energy Sales, Central-Asian Electric Power Corporation JSC

Svetlana Fedorova  
Director, AEDC-Energosbyt LLP

Anatoly Kazanovsky  
General Director, North Kazakhstan EDC JSC

Galina Volkova  
Head of Customer Affairs Department, Pavlodar Heat Networks LLP

### EMINENT ENERGY WORKER AWARD PIN

Vladimir Shevtsov  
Director CHP-2, PAVLODARENERGO JSC

### HONORED ENERGY WORKER AWARD PIN OF THE MINISTRY OF ENERGY OF THE REPUBLIC OF KAZAKHSTAN

Mikhail Druzhinin  
Head of Thermal Automatics and Measurement Department at ECHP, Ekibastuzteploenergo LLP

### AWARD OF THE CIS ELECTRICAL POWER COUNCIL

### HONORED ENERGY WORKER OF CIS TITLE

Vitaly Fesko  
Deputy General Director for Production, North Kazakhstan EDC JSC

Feodor Bobkov  
Shift Master of ECHP boiler-turbine shop, Ekibastuzteploenergo LLP

### EMINENT ENERGY WORKER OF KEA TITLE

Alla Yazovskaya  
Deputy General Director for Economy and Finance, Central-Asian Electric Power Corporation JSC

Alexander Zinkevich  
General Director, Astanaenergobytt LLP

Nikolay Obyedkov  
Head of Service Center No. 4, Astanaenergobytt LLP

Oleg Grigoryev  
Head of boiler department at CHP-3, PAVLODARENERGO JSC



## RESULTS OF THE INVESTMENT PROGRAM FOR 2008-2018



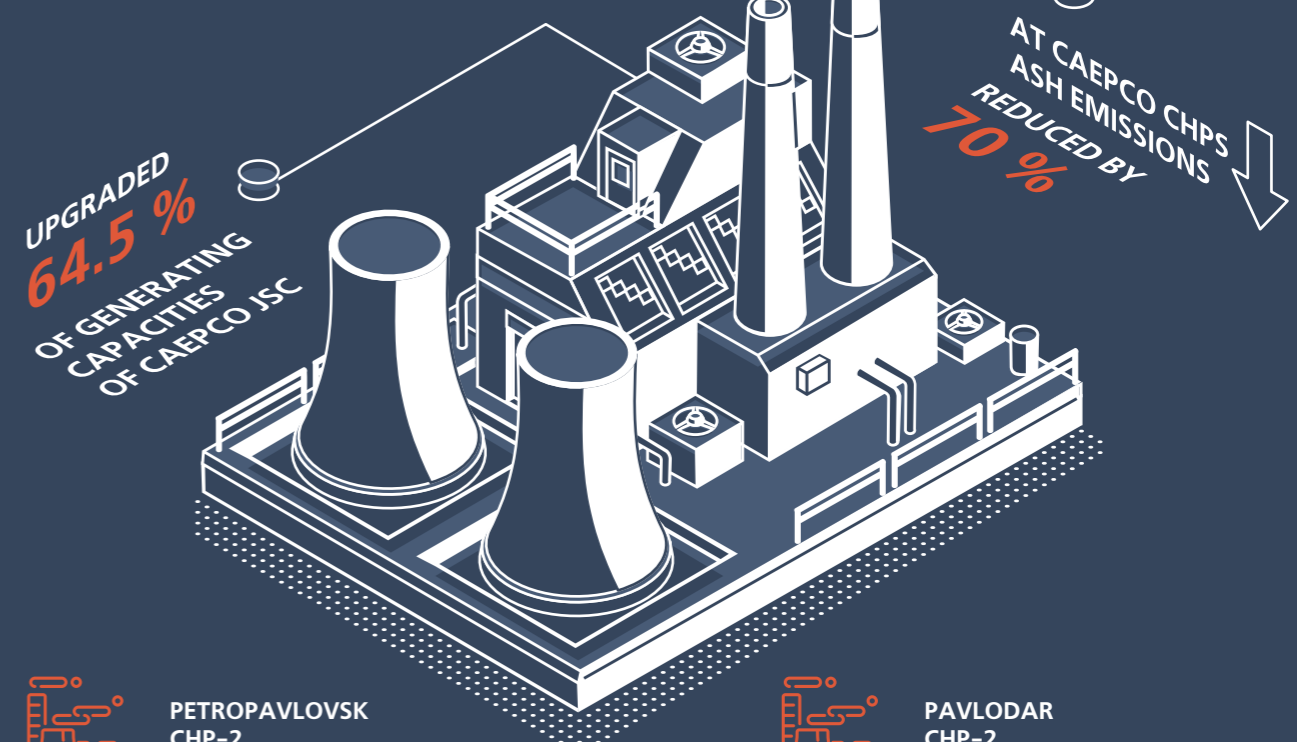
### PAVLODAR CHP-3

turbo generator no.1 (new);  
turbo generator no.2 (new);  
turbo generator no.4; turbo generator no.5;  
turbo generator no.6;  
cooling tower no.5 (new);  
boiler no.1 (new);  
boiler no. 2; boiler no. 3;  
boiler no. 4; boiler no. 5.



### EKIBASTUZ CHP

turbo generator no.1 (new);  
boiler no. 6 (new).



### PETROPAVLOVSK CHP-2

turbo generator no.1 (new); turbo generator no. 2;  
turbo generator no. 4 (new); turbo generator no. 5 (new);  
turbo generator no. 6; turbo generator no. 7;  
boiler no. 6; boiler no. 7;  
boiler no. 8 (new); boiler no. 12.



### PAVLODAR CHP-2

boiler no. 1;  
cooling tower no. 2 (new).

## GROWTH DYNAMICS



288 MW (30 %) installed electricity capacity  
**1,218 MW**



210 Gcal/h (7.6 %) installed heat capacity  
**2,981 Gcal/h**



1,627 mln kWh (30.1 %) electricity generation



871 thous. Gcal (14.5 %) heat generation



BUSINESS MODEL

CAPITAL

**FINANCIAL CAPITAL**  
Authorized capital –  
**₸ 46,043,272** thous.

**NATURAL CAPITAL**  
**6,432.9** thous. tons coal consumption  
**7,700** tons oil fuel consumption  
**905,512.9** thous. m<sup>3</sup> water consumption

**PRODUCTION CAPITAL**  
**4** CHPs **4** sales companies  
**996** km of heat networks **49.4** thous. km of electricity networks

**HUMAN CAPITAL**  
**10,782** employees **31.7 %** employees with higher education  
**1,048** people talent pool  
**15 %** staff turnover  
**PROFENERGY** program

**INTELLECTUAL CAPITAL**  
Ellipse, Mobility, ASCAE, ASCAHE THESIS process automated control system, billing, boiler and turbine generator automated control system, Infopro

**SOCIAL CAPITAL**  
**9** stakeholder groups  
**Social policy**

CORE ACTIVITIES



**CAEPCO**

Central-Asian Electric Power Corporation

INVESTMENT ACTIVITIES

- Modernization of power equipment;
- Reconstruction of heat and power networks;
- Process automation.

**SALES OF HEAT AND ELECTRICITY**  
activities aimed to sell electricity and heat to customers.

HEAT AND ELECTRICITY TRANSMISSION AND DISTRIBUTION

energy transmission from generating facilities to customers is carried out through electrical grids, which include power converters, power transmission lines and switchgears.

**HEAT AND ELECTRICITY GENERATION**  
combined heat and electricity generation at 4 CHPs of the Holding.

RESULTS FOR 2018

MODERNIZATION

COMMISSIONING of a turbine generator No. 6 at Pavlodar CHP-3

IMPLEMENTATION

of the Environmental and Social Action Plan

**₸ 5,188.625 mln** environmental protection expenses;

reduction in waste generation by **3.5** thous. tons

Injury rate reduction by **30 %**;

**0** occupational deaths;

**84** thous. consumers are equipped with ASCAE.

INSTALLATION

**3,153** heat metering devices.

IMPLEMENTATION of the Stakeholder Engagement Plan.

PERFORMANCE INDICATORS FOR 2018

FINANCIAL INDICATORS



**₸ 143.880** bln sales

**₸ 1.6** bln net income

**₸ 1.58** bln total income for the year

**₸ 29,405** bln EBITDA

**20.44 %** EBITDA margin%

ENERGY GENERATION



**7,026** mln kWh electricity

**6,874** thous. Gcal heat

ENERGY SUPPLIED TO CONSUMERS (sales)



**7,907** (mln kWh) electricity

**12,627** thous. Gcal heat

ASSETS



**₸ 37,375** bln current assets

**₸ 276,715** bln non-current assets

**₸ 21,118** bln investments





# CORPORATION BUSINESS PROFILE

## CAEPCO IS THE LARGEST PRIVATE HOLDING

Central-Asian Electric Power Corporation JSC is the largest vertically integrated private holding in the electricity and heat generation sector of Kazakhstan. In the regions where it operates, CAEPCO JSC Group of Companies has a monopoly on electricity and heat production and distribution.

**10,782** people headcount of the Group of Companies

**6.6 %** Corporation's share in the electricity generation market in 2018

**More than 2 mln** customers (including families)

**1,218 MW** installed electricity capacity

**2,981 Gcal/h** installed heat capacity

## CORPORATION RATING (JULY 23, 2018)

### FITCH RATINGS INTERNATIONAL RATING AGENCY

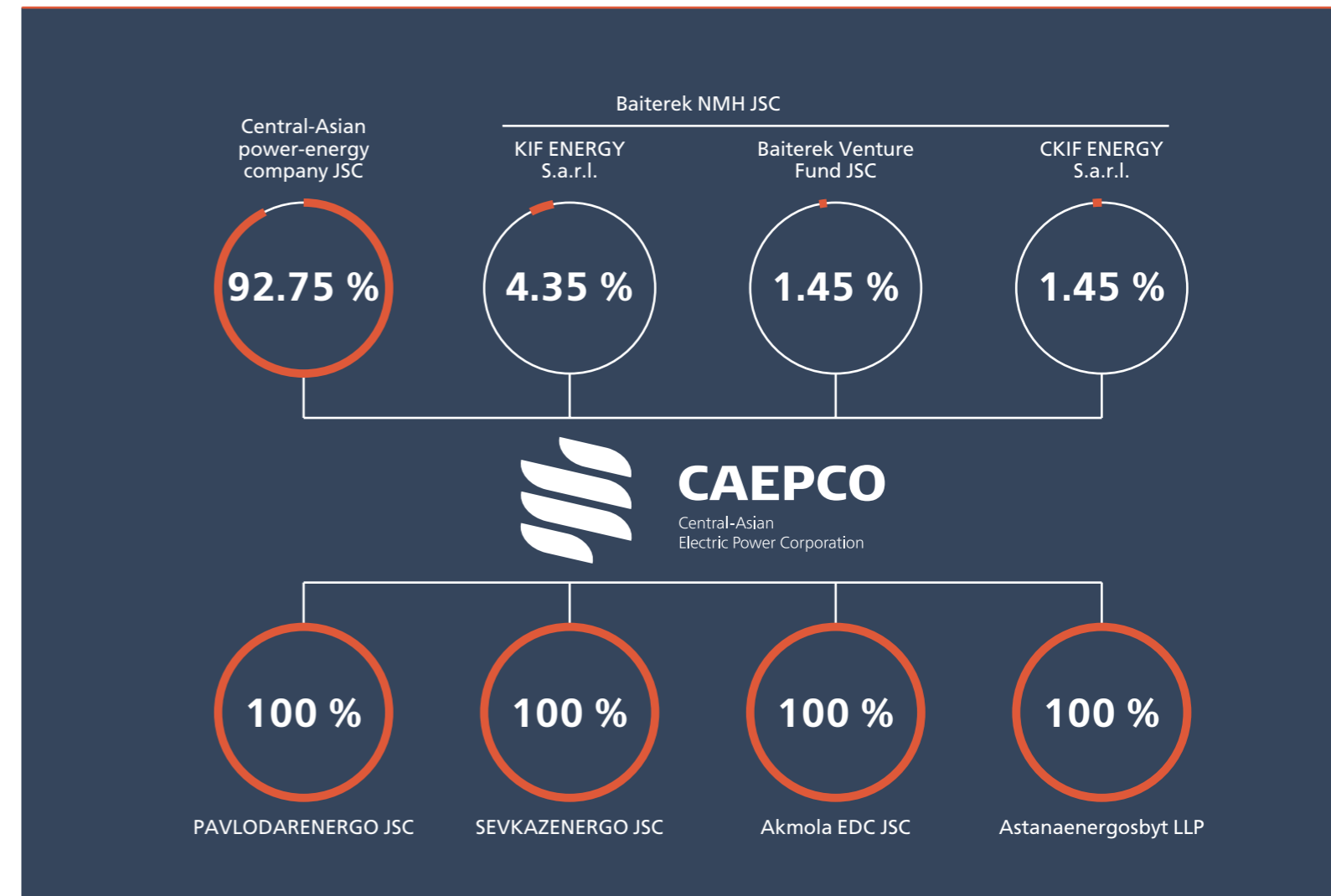
- B+
- Outlook: Stable

### FULL LIST OF RATING ACTIONS

- Long-term IDR in foreign and national currency
- Affirmed at "B+"; outlook "Stable"
- National long-term rating affirmed at "BBB(kaz)"; outlook "Stable"
- Short-term foreign currency IDR affirmed at "B"
- Senior unsecured rating in the national currency affirmed at "B"/recovery rating «RR5»
- National senior unsecured rating at "BB+(kaz)"



## CORPORATION STRUCTURE



## MISSION

Improving the living standards for customers and creating favorable conditions for economic growth in the regions of operations by providing first-class energy supply services for households, industries and social infrastructure facilities. The Corporation is implementing this mission by operating in accordance with international production, environmental, health protection and social responsibility standards.

The Corporation's performance effectiveness is based on its employees, whose value lies in their high professionalism and the ability to work in a team with a focus on results.

## VISION

Central-Asian Electric Power Corporation JSC is a leader among private energy companies in Kazakhstan. The Corporation operates in the most challenging climate conditions in the north of the country. The Corporation successfully uses the advantages of the holding structure by combining dynamism and flexibility of its business units (companies within the Group) with stability and reliability of centralized management on the Group level.

Employees of the Corporation are a team of professionals who are striving for higher goals. The Corporation's relations with its customers and suppliers are based on the principles of respect and mutual responsibility.

## VALUES

**RESPECT** for employees' personal rights and interests, customer requirements and cooperation conditions set by our partners and society.

**OBJECTIVENESS** suggesting remuneration depending on the results achieved and providing equal rights for professional growth.

**HONESTY** in relations and providing information necessary for our work.

**EFFECTIVENESS** as a sustainable achievement of the maximum possible results in everything we do.

**BRAVENESS** to resist what is unacceptable, and to assume responsibility for the consequences of decisions taken.

**CARE** expressed in attempts to protect people against any harm or threat to health and environment.

**TRUST** in employees, which allows to delegate authority and impose responsibility for decisions and ways to implement them.



## SUBSIDIARIES

### PAVLODARENERGO JSC

PAVLODARENERGO Joint-Stock Company is a vertically integrated company consisting of generation, transmission and distribution facilities in the city of Pavlodar and Pavlodar region.

Electricity generated by PAVLODARENERGO JSC is supplied to customers in Pavlodar, Karaganda, Akmola and East-Kazakhstan regions.



### SEVKAZENERGO JSC

SEVKAZENERGO Joint-Stock Company is a vertically integrated company consisting of generation, transmission and distribution facilities in the city of Petropavlovsk and North-Kazakhstan region.

Electricity produced by SEVKAZENERGO JSC is supplied to customers in the northern, central, eastern and southern regions of Kazakhstan.



### AKMOLA ELECTRICITY DISTRIBUTION COMPANY JSC

AEDC Joint-Stock Company (Akmola EDC JSC) is an electric company engaged in transmission and distribution of electricity among customers in Akmola region and the city of Nur-Sultan.

A subsidiary of AEDC JSC – AEDC-Energosbyt LLP – buys electricity to supply it to customers in Akmola region.



### ASTANAENERGOSBYT LLP

The company's main area of business is supplying electricity and heat to customers in the city of Nur-Sultan. For the convenience of its customers, Astanaenergosbyt LLP has eight payment acceptance points and a call center, which processes data from electricity and hot water meters and provides information on energy supply issues.

## MAIN PRODUCTION CHARACTERISTICS

CHP	Installed electricity capacity, MW	Installed heat capacity, Gcal/h	Renovation of equipment since 2009, %	Year of foundation
Pavlodar CHP-3	555	1,154	91.0	1972
Pavlodar CHP-2	110	332	—	1961
Ekibastuz CHP	12	782	100	1956
Petropavlovsk CHP-2	541	713	49.7	1961

### TOTAL PTL LENGTH, KM

PTL type	Pavlodar EDC JSC	North-Kazakhstan EDC JSC	Akmola EDC JSC
220 kV	14.3	84.84	—
110 kV	2,798.0	1,327.14	2,505.345
35 kV	2,395.5	2,849.43	5,176.397
6-10 kV	5,721.3	4,489.92	7,351.216
0.4 kV	4,429.6	4,470.49	5,752.515

### NUMBER OF SUBSTATIONS BY TYPE

Substation type	Pavlodar EDC JSC	North-Kazakhstan EDC JSC	Akmola EDC JSC
220 kV	4	—	2
110 kV	74	37	50
35 kV	102	121	193
6-10 kV	3,585	2,234	3,360

### TOTAL HEAT NETWORK LENGTH, KM

City	Total, km
Pavlodar	420
Ekibastuz	342
Petropavlovsk	234

### NUMBER OF CONSUMERS BY REGION

Region	Electricity	Heat
Pavlodar region	224,675	169,312
North-Kazakhstan region	163,795	73,629
Akmola region	122,120	—
Nur-Sultan	288,568	267,822



# 2016–2020 DEVELOPMENT STRATEGY

## MAIN DIRECTIONS

The Strategy of the Corporation determines the main directions for business growth, management projects and technology. The strategic goal of CAEPCO JSC is to build a vertically integrated private energy company providing customers with consistent and reliable services through the synergy of energy generation, distribution, transmission and guaranteed sales of both electricity and heat.

The Strategy envisages activities in the following four strategic areas:

1. Targeted market expansion with guaranteed sales and low risks:
  - geographic expansion of operations of the Corporation's enterprises;
  - implementation of growth projects to enter new markets of energy generation and transmission.
2. Enhancement of production efficiency through more technologically advanced production and upgrading the main production facilities and infrastructure:
  - reconstruction and modernization of equipment at power generation facilities through implementation of investment programs, reduction of accident risks and elimination of downtimes;
3. Introduction of promising projects through well-targeted innovation development; promoting the development of "green" technologies.
  - minimization of per-unit generation costs for heat and electricity;
  - reduction of transmission losses above the normal level for heat and electricity;
  - introduction of energy-saving and energy-efficient technologies in energy production and transmission;
  - building an effective environmental risk management system.

4. Introduction of best management practices through continuous employee training in the field of new efficient technologies in operations and enterprise management:

- creation of customer service centers based on a common IT-platform;
- transition to a uniform billing system;
- maintaining relevant certification for compliance with international environmental, occupational health and safety standards;
- taking measures to decrease work-related injuries;
- continuous employee training to enhance professional skills.

## PROSPECTS OF THE INVESTMENT PROGRAM IMPLEMENTATION UNTIL 2020

By 2020, thanks to the investment program implementation, the equipment depreciation rate at generating facilities will decrease from 80 % to 56 %, the share of fully renovated production assets will make up 65 %, and harmful emissions will reduce by 31 %.



The investment program is implemented in three focus areas: increase in output; energy efficiency; improving environmental performance. CAEPCO JSC constantly takes a number of measures to reduce electricity and heat losses during transmission and to improve the reliability of heat and electricity supply to consumers. During 2009- 2020, transmission losses are expected to reduce as follows: electricity - by 3.6 % (losses above the normal level were completely eliminated in 2014); heat - by 7.2 %.



## “ CAEPCO WILL CONTINUE ITS ACTIVE OPERATIONS

**DYUSSENBAY TURGANOV,**  
 FIRST DEPUTY GENERAL DIRECTOR OF CAEPCO JSC

### — What are the main development trends in the power sector of Kazakhstan?

— The rate limiting program implemented in 2009 - 2015 demonstrated its effectiveness and increased energy security in Kazakhstan. Today, the power industry is on the verge of entering the Eurasian power market. Moreover, the electrical capacity market is also actively being introduced in Kazakhstan. CAEPCO JSC takes an active part in all industrial development processes.

### — Is there a need to continue upgrading equipment at CHPs in Kazakhstan?

— Yes, definitely. About 39 % of power plants in Kazakhstan were built before 1980, and in 2016, the planned service life of 42 % steam turbines was exceeded. Without upgrading the equipment, this figure will steadily grow. The National Energy Report of KAZENERGY Association for 2017 noted that despite the growth of generating capacities of the

country, they are still mainly based on obsolete Soviet technologies. The capacity park is becoming obsolete, its equipment should be upgraded and replaced.

### — What are the plans of the Company for the next year?

— In 2019, CAEPCO JSC intends to allocate KZT 14.5 bln to continue the implementation of the upgrading program. Regional subsidiaries will continue their work to develop power plants and generating units by implementing the investment program for upgrading production facilities at enterprises to ensure uninterrupted electricity and heat supply to consumers in Kazakhstan. However, the programs could be implemented only with government support in terms of adopting a rate policy to take into account all the costs of energy producing companies.



The upgrading and replacement of the main equipment will drive growth in the following areas:

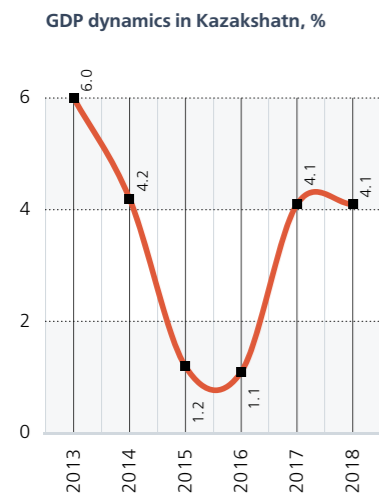
- installed electrical capacity – 288 MW or 31.0 %;
- installed heat capacity – 210 Gcal/h or 7.6 %;
- electricity generation – over 2,000 mln kWh or 38.2 %;
- heat distribution – over 700 thous. Gcal or 12 %.



# MARKET ANALYSIS

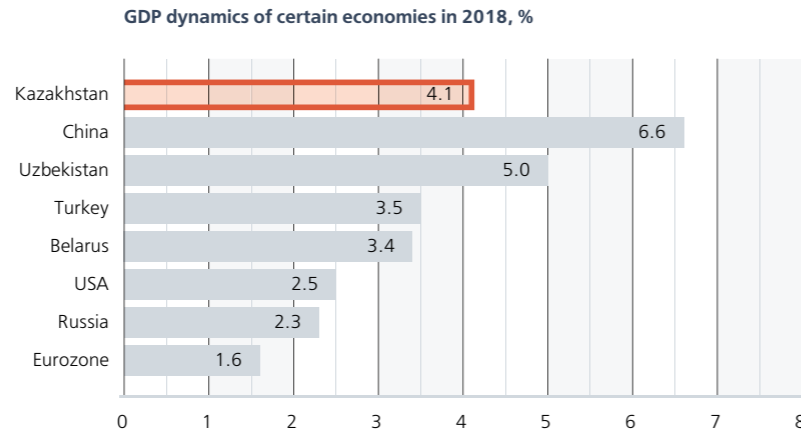
## ECONOMIC OVERVIEW

In 2018, the economy of Kazakhstan was growing against the background of the favorable economic environment. The growth was positively affected by trends in oil prices, which increased by 31 % from USD 54 in 2017 to USD 71 dollars per barrel (average spot price according to US EIA data). Other positive factors included the growth in demand and the conclusion of an agreement for oil production quotas by the largest oil exporters within OPEC+. The accelerated growth of the Russian Federation's economy (2.3 %), keeping high growth rates in China (6.6 %) and a stable moderate growth in the euro zone (1.6 %), which are the key foreign trade partners of the Republic of Kazakhstan - promoted an increase in Kazakhstan's exports in terms of value and volume.



Source: SC MNE RK

These factors contributed to 4.1 % GDP growth in Kazakhstan in 2018. The growth was evenly distributed across all key economic sectors. The growth was driven by the 4.1 % industry growth. The agricultural output increased by 3.4 %, construction volumes also showed an increase by 4.1 %. The service sectors grew by 4.0 %. The growth dynamics of fixed capital expenditures reached the peak value over the past five years - 17 % after 5.5 % in 2017. At the same time, the annual inflation rate decreased from 7.1 % to 5.3 %.



Source: SC MNE RK, Federal State Statistics Service, World Bank

A 26 % increase in Kazakhstan exports (up to USD 60 bln) caused a further improvement in the trade balance and a reduction in the current account deficit from - 5.1 bln US dollars to - 52 mln US dollars. Instability in emerging markets, declining confidence in currencies of developing countries and sanctions against the Russian Federation were among negative macroeconomic factors. Despite the favorable external economic conditions, the exchange rate of tenge raised from an average of 326 KZT/USD in 2017 to 345 KZT/USD in 2018.

### MONETARY POLICY

In 2018, the monetary policy of the National Bank of the Republic of Kazakhstan (NB RK) remained within the boundaries of the inflation targeting regime. The NB RK reached the inflation target for 2018, which was within the range of 5-7 %, and three times reduced the base rate - from 10.25 % to 9.00 %. However, in the face of the growing instability in foreign markets, in October 2018 the rate was increased to 9.25 %. During the year, interest rates on short-term corporate loans decreased by about 3 percentage points (p.p.) from 15 % to 12 %, for long-term loans - by 5 p.p. from 17 to 12 %.

Two trends remained unchanged in the banking sector - reorganization and concentration: pursuant to the decision of the NB RK, three banks

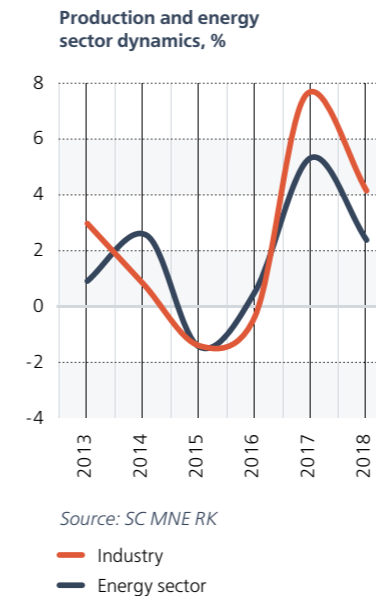
were liquidated. The takeover of Kazkommertsbank JSC by Halyk Bank of Kazakhstan JSC was completed, which resulted in appearance of a market player concentrating more than a third of all bank assets.



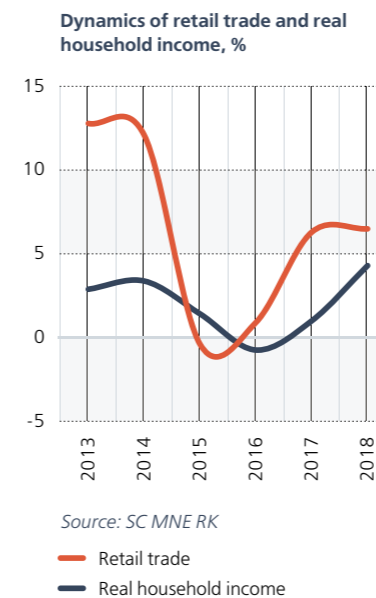
Source: NB RK

### INDUSTRY

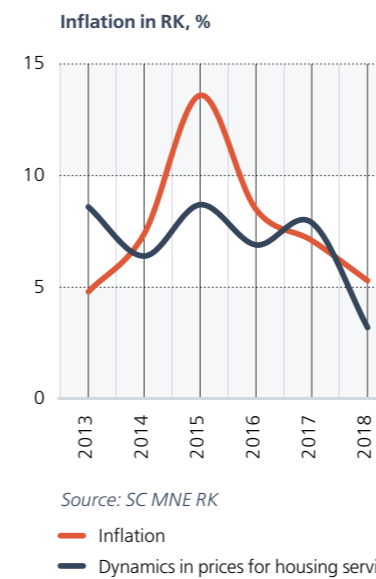
The accelerated industry growth was affected by three factors. A 4.8 % growth in oil production (increase in oil production at Kashagan field from 8.4 to 13.2 mln tons) caused a general growth acceleration in the mining complex up to 4.6 % per year. The manufacturing sector grew by 4.0 % per year due to the



Source: SC MNE RK



Source: SC MNE RK



Source: SC MNE RK

completion of major investment projects and the output to the planned capacity of petrochemical and non-ferrous industry enterprises.

The growth dynamics in the energy sector (electricity and heat, as well as gas distribution) was caused by an overall economic output growth and high rates in the industry: electric power industry demonstrated a 4.1 % increase, heat power grew by 1.5 %, and the gas sector output declined by 1.3 %. In the water supply and sewage sector, a slight decline (- 1 %) was noted.

### 2019 OUTLOOK

In 2019, despite the steadily growing investment, the Ministry of National Economy of the Republic of Kazakhstan expects economic slowdown from 4.1 to 3.8 %. International financial institutions and rating agencies forecast a growth in the range of 3.0-3.5 %. According to the Ministry of Energy of the Republic of Kazakhstan, oil production in 2019 will decrease from 90 mln tons to 89 mln tons with reducing oil prices. The World Bank expects oil prices to fall by an average of 3 % while the International Energy Agency does not exclude that prices could fall by 14 %. The rate of fixed capital expenditures may decline compared to the 2018 level. High rates in the economy will restrict private sector investment in the SME segment. The consumer sector will be negatively affected by the external inflation background.

## ENERGY SECTOR OVERVIEW

In 2018, the electric power sector of Kazakhstan kept growing having

	2017	2018	Change, %	2018 ratio, %
TPP	82,420	86,795	5 %	81.3 %
GTPP	7,410	9,119	23 %	8.5 %
HEPP	11,610	10,343	-11 %	9.7 %
RES	428	540	26 %	0.5 %

Sources: KEGOC, KOREM

upgraded the capacities of electricity generation and consumption due to investments previously made by market participants. The production using renewable energy sources also continued to grow.

At the end of 2018, the regulatory authority decided to adjust the rate policy: starting from 2019 a seven-year period of fixed rates will commence for energy-producing enterprises. The market structure becomes more sophisticated: the rate mechanism with an investment component is replaced by the capacity market. Starting from July 2019, the common electricity market will be introduced in Kazakhstan to expand the export potential of domestic power industry.

### PRODUCTION AND CONSUMPTION

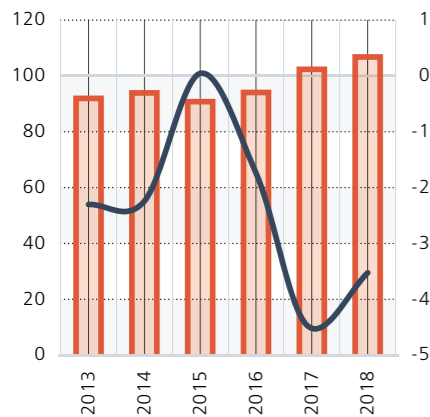
In 2018, the energy sector of Kazakhstan continued to grow: according to the national power system operator KEGOC JSC, electricity production at all 138 power plants of Kazakhstan increased by 4.3 % and reached the level of 106.8 bln kWh.

The generation structure by sources practically did not change: approximately 8 out of 10 kilowatts of energy are produced at coal-fired power plants while the share of renewable energy sources (RES) is growing but still insignificant in the energy balance.



Over 96 % of all electricity produced is consumed domestically. Kazakhstan is a net exporter: in 2018, the negative balance flow (net exports) to the Russian Federation amounted to 3.6 bln kWh (-21 % against the level of 2017), to the Central Asian countries - 2.8 mln kWh (in 2017, imports exceeded export by 1.2 mln kWh).

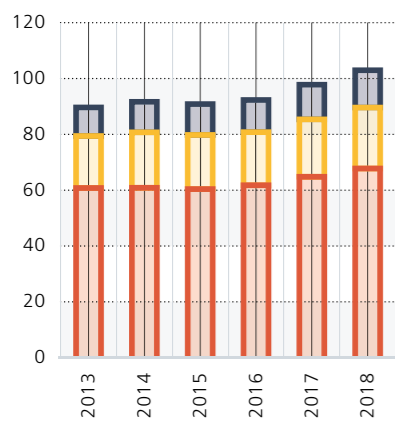
Electricity production in RK and net power flow to UES of Kazakhstan, bn kWh



Source: KEGOC

Production (red bars), Net power flow (right scale) (blue line)

Electricity consumption in RK, bn kWh



Source: KOREM

West zone (blue), South zone (yellow), North zone (red)

Historically, the power system of Kazakhstan includes three zones: North, South and West. North zone includes regions with energy-intensive industry; it produces and consumes 2/3 of total electricity volume (66%) and has a surplus of electricity. South and West

(21 % and 13 % of consumption, respectively) zones experience shortage of electricity and receive the missing volumes through trunk PTLs (North - South, North - East - South, North - West), or from neighboring countries: Russia (West) and Uzbekistan (Central Asia).

In 2018, the consumption grew by 5.3 % (up to 103.0 bln kWh) in all three zones. Consumption in the North zone increased by 4.6 % due to the growth in demand among major consumers: Aksu Ferroalloy Plant, Kazakhstan Electrolysis Plant, SSGPO JSC, Ust-Kamenogorsk Titanium-Magnesium Plant and Kazzinc enterprises. In the South zone, consumption grew by 6.2 % due to demand from Kazphosphate. The increase in output of Aktobe Ferroalloy Plant, Atyrau Refinery and other large enterprises promoted a 7.6 % consumption growth in the West zone.

As of January 1, 2019, the total installed capacity of power plants in Kazakhstan amounted to 21,902 MW with the available capacity of 18,895 MW. With the annual maximum fixed in 2018 at 14,823 MW (a 4.4 % increase to 2017), the Republic of Kazakhstan still has a 22 % surplus of available capacity.

The electricity generation segment consists of one major player owned by the government and several private companies. Samruk-Energy JSC (Ekibastuz GRES-1 and 2, AIES JSC, Moinak HEPP, etc.) produces up

to 30 % of total electricity generated in Kazakhstan. ERG-owned plants control at least 16%, CAEPCO JSC - almost 7 %, and Kazakhstan Utility Systems - 4 %.

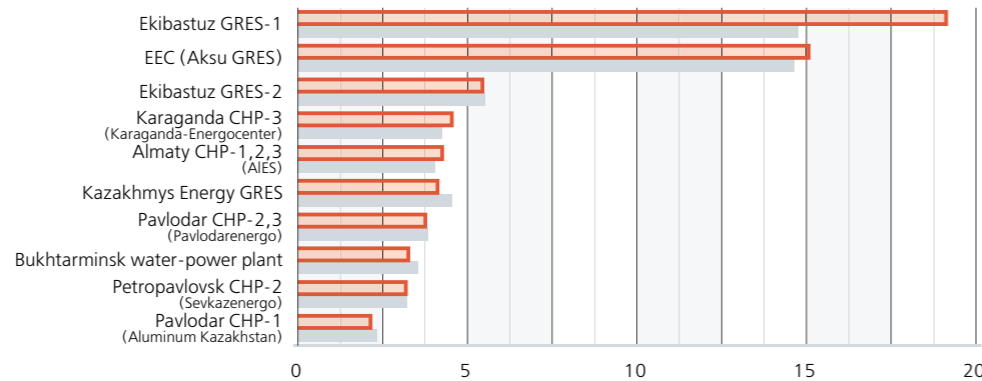
As for individual power plants, two largest enterprises increased generation during the year: Ekibastuz GRES-1 by 30 %, EEC - by 3 %. High growth rates of Ekibastuz GRES-1 were achieved due to the fact that the plant met the growing demand in Pavlodar region and exported electricity to the Russian Federation, but also sold electricity to the south regions of the country - Almaty and Zhambyl regions, where the total consumption increased by 1.5 bln kWh.

PRICING POLICY

lowest values in the entire history of independent Kazakhstan. This became possible due to measures taken by the government of the Republic of Kazakhstan in the end of 2018. According to the comprehensive analysis results, rates for heat and electricity were reduced depending on the region from 3 to 37 % and from 2 to 22 %, respectively.

As a result, the Ministry of Energy of the Republic of Kazakhstan decided to fix limiting rates for each group of power plants for a seven-year period at the level of 2019. The Ministry of National Economy of the Republic of Kazakhstan announced the transition to a "stimulating rate setting policy": the rate and the profit of the entity

Electricity production at individual power plants of RK, bln kWh



Source: calculations based on KOREM data

2018 (red), 2017 (blue)

will depend on the quality, reliability and efficiency indicators set by the monopolist.

INDUSTRY INVESTMENT

In 2018, the fixed capital expenditures in the energy sector decreased by 13 %. The completion of major investment programs, keeping a surplus of generating capacities, a disincentive effect of the reduction or freezing of rates - all these factors caused a decrease in overall capital expenditures. Foreign investment in the sector sharply increased (more than 8 times to 2017).

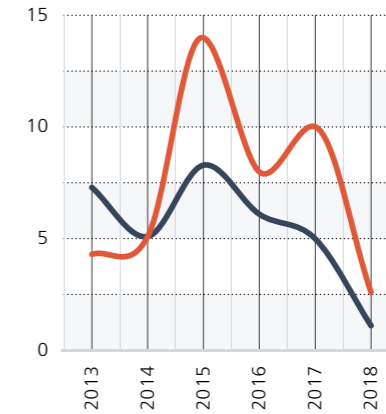
The increase in the industry investment was affected by several factors: launch of the capacity market and enhancement of the operational efficiency at existing facilities.

MARKET OUTLOOK

The forecast balance until 2025 implies a 40 % growth in electricity output in the seven-year term relative to the actual figures of 2018 (including a 11 % increase in 2019) with a 31 % growth in consumption (9 % in 2019). The RES ratio in the energy balance will continue to increase and by 2025 it will reach 5 %. Renewable energy sources will account for about 25 % in the structure of the total newly introduced capacity.

The maximum electrical load in the forecast period will increase from 17,093 to 20,262 MW (+18.5 %), while a surplus of capacity (taking into account the reserve) will decrease from 1,229 MW in 2019 to 391 MW in 2023, and by 2025 it will amount to 934 MW.

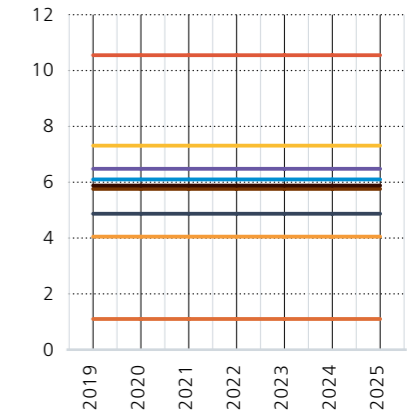
Growth dynamics of retail electricity and heat rates in Kazakhstan, %



Source: SC MNE RK

Heat (red line), Electricity (blue line)

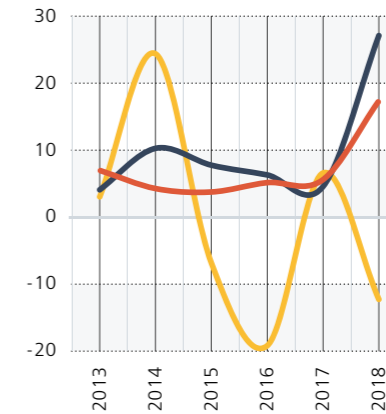
Limiting electricity rates for individual energy-producing enterprises, KZT/kWh



Source: Ministry of Energy of RK

Astana Energy (blue), Uralsk GTTP (red), GRES-2 (yellow), EEC (orange), Bukhtarminsk WPP (green), GRES-1 (purple), Sevkazenergo (brown), Karaganda-Energy Center (grey), Pavlodarenergo (light blue)

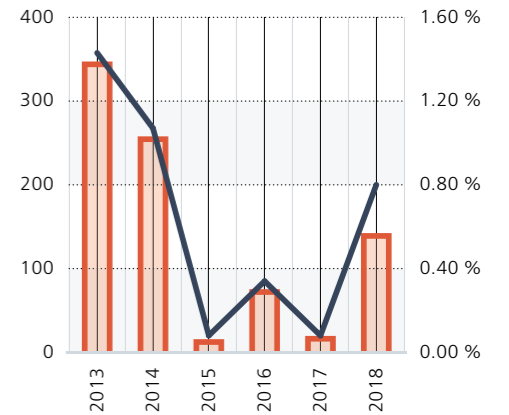
Dynamics of fixed capital expenditures in RK, %



Source: SC MNE RK

Energy sector (yellow), Industry (blue), Economy as a whole (red)

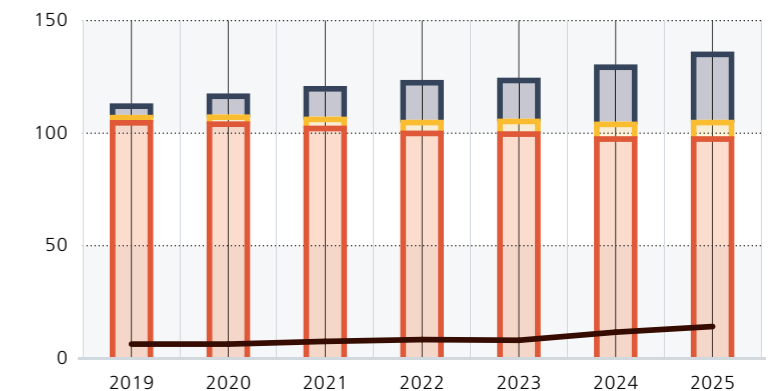
Gross FDI inflow in energy sector of Kazakhstan



\*-at the end of 3Q 2018 Source: SC MNE RK

FDI in energy sector, USD mln (red bars), Share of total gross inflow of FDI (right scale) (blue line)

Forecast of electricity market balance for 2019-2025, bln kWh



Source: Ministry of Energy of RK

Other sources planned (red), RES planned (yellow), Existing plants (blue), Surplus (black line)

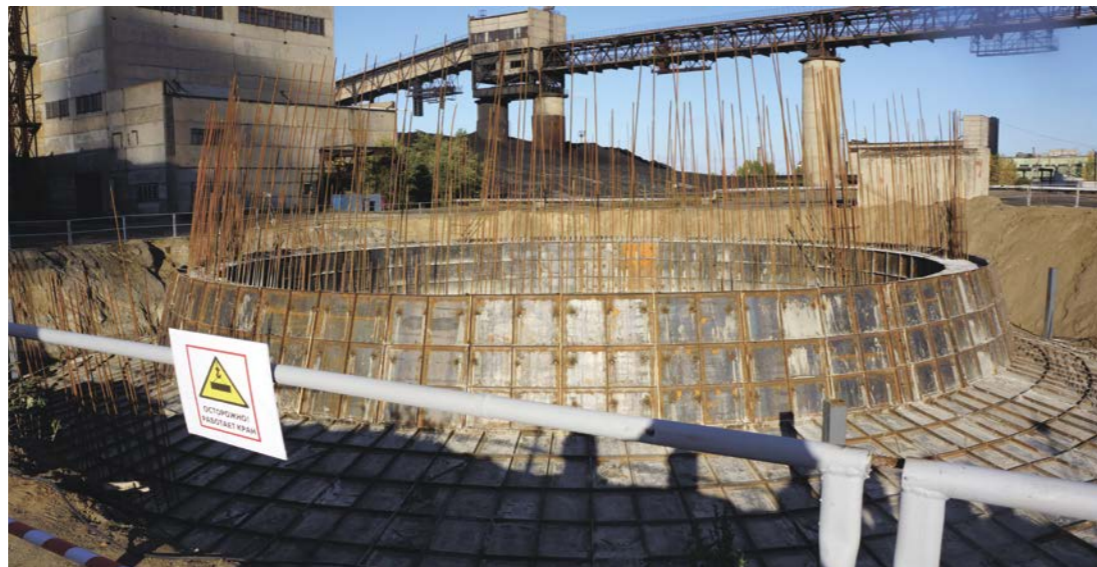


# PERFORMANCE RESULTS AND DEVELOPMENT PROSPECTS OVERVIEW

## ELECTRICITY GENERATION

In 2018, due to a planned increase in heat supplies to customers of PAVLODARENERGO JSC, the Corporation expected to increase electricity generation by 0.8 % compared to 2017 (up to 7,245 mln kWh) and heat supply by 2.7 % compared to 2017 (up to 6,306 thous. Gcal).

In fact, the Corporation reduced production by 3.8 % relative to 2017 to 7,026 mln kWh. Heat supplies increased by 11.9 % compared to 2017 to 6,874 thous. Gcal due to lower average ambient air temperatures during the heating season of 2018 compared to 2017 (-8.2° C and -5.5° C, respectively) and an increase in heat consumption in PAVLODARENERGO JSC and SEVKAZENERGO JSC by 12.1 % and 11.5 %, respectively.



	2017	2018
Electricity output, mln kWh	7,300	7,026
Heat supply, thous. Gcal	6,142	6,874



In 2018, as part of the investment program, the Corporation allocated a total of **₸ 21.118** bln for further implementation of a number of large-scaled equipment modernization projects to increase generation, reduce transmission losses for electricity and heat, and improve environmental performance.

**— What are changes occurred at Pavlodar CHP-3 in 2018?**

— We continued to upgrade the main equipment: the turbo generator No. 6 of the plant was completely reconstructed, as a result of which the total installed capacity of the entire combined heat and power plant is now 555 MW. Replacement of the turbo generator became possible due to our cooperation with Ural Turbine Plant, ELSIB Research and Production Association (Novosibirsk), GERB company (Germany) and Sevkazenergoprom Design Institute.

**— What is the feature of the project?**

— The new unit was installed on a steel frame weighing 358 tons, which is supported by reinforced concrete pillars. Twelve GERB vibration insulators are installed between the steel frame and the pillars. The uniqueness of this project is that it is the only one in the territory

## PROJECTS IMPLEMENTED IN 2018

### PAVLODAR CHP-3 OF PAVLODARENERGO JSC

The project for modernization of the turbo generator No. 6 was completed and the installed electrical capacity was increased by 15 MW to 125 MW. For the first time in the CIS, the foundation steel frame with vibration insulators was used during the project implementation. Turbo generator No. 6 was put into operation on November 6, 2018.

The construction of the exhaust stack No. 2 was started and the foundation

filling was completed. The third stage of the ash dump construction is in progress. This is one of measures to ensure continuous operation of the power plant and to create an ash dump site enough for up to 10.5 years of use.

### PAVLODAR CHP-2 OF PAVLODARENERGO JSC

Modernization of equipment in the fuel transportation department was completed.

### EKIBASTUZ CHP OF PAVLODARENERGO JSC

Ekibastuz CHP continued the 2nd stage of construction of an ash dump in the bed of Lake Tuz.

### PETROPAVLOVSK CHP-2 OF SEVKAZENERGO JSC

The auto-transformer No. 7 was replaced.

Building the dams at the 3d section of the ash dump site No. 2 was started. This is one of the measures to ensure continuous operation of the power plant and to create an ash dump site enough for up to 7 years of use.

Reconstruction of the heat generation scheme at Petropavlovsk CHP-2 is in progress.

## RENOVATION OF 91% OF TURBINE GENERATORS AT PAVLODAR CHP-3

### OLEG PERFILOV,

MEMBER OF THE STRATEGIC AND TECHNICAL COMMITTEES OF THE BOARD OF DIRECTORS OF CAEPCO JSC, GENERAL DIRECTOR OF PAVLODARENERGO JSC

of Kazakhstan and the CIS countries. The installation and commissioning of all 12 vibration insulators and the installation of spring elements under the turbine condenser were performed under the supervision of engineers from Germany. The installation of the turbo generator was completed in record-breaking time - five and a half months with a standard of 12 months. Besides the turbine No. 6, the units No. 1, 2, 4 and 5 were modernized and reconstructed.

**— To what extent CHP-3 has been upgraded over 10 years?**

— Turbo generators at CHP-3 were upgraded by 91 % with the total costs amounting to KZT 35 bln. A total amount of KZT 55 bln was allocated over 10 years to upgrade PAVLODARENERGO JSC. The performance of such an extensive work became possible thanks to the limiting electricity rate program implemented in 2009-2015, as well as the full support from CAEPCO shareholders.





## ELECTRIC POWER TRANSMISSION

In 2018, as part of investment programs, a total of 212.785 km of 0.4-10 kV power lines were constructed, reconstructed and re-fitted.

### PAVLODAR EDC JSC

- 23 km of 35 kV overhead power lines built;
- 35.0 km of 0.4-10 kV power transmission lines renovated, including 22 km of bare wires replaced with aerial bundled conductor lines;
- 2,928 ASCAE devices installed;
- three substations renovated:
  - Pavlodar - replacement of oil circuit breakers with SF6 circuit breaker at six cells;
  - Bayanaul district - replacement of oil circuit breakers with SF6 circuit breaker at two cells;
  - Ekibastuz district - installation of 220 kV bus-section SF6 circuit breaker.
- two module-type dry-insulated power transformer substations installed in the city of Pavlodar and equipped with vacuum switches, modern security and fire alarm systems;
- five 10/0.4 kV oil-immersed power transformers replaced with new ones having greater capacity;
- new 10 kV power distribution substations built in Pavlodar (PDS-2) and Aksu (PDS-1);
- 31 industrial buildings renovated;
- construction and installation work started to build 110/10 kV North city substation, renovate 110/10 kV East city substation in Pavlodar 110/10 kV substation in Potanino;
- design estimate documentation developed for the reconstruction of two 110 kV substations in the city of Pavlodar and construction of 35kV OHL in Kachirsky district;
- two antenna-mast structures built;
- fire and security alarm systems installed at 5 facilities;
- design estimate documentation developed for installing fire and security alarm systems at 47 facilities;
- 11 sets of radio-relay communication installed with commissioning planned for the next year;
- ADCS (automated dispatch control system) equipment installed at 110 kV substation.

### NORTH-KAZAKHSTAN EDC JSC

- 63.6 km of 0.4-10 kV power transmission lines renovated, including 49.505 km of aerial bundled conductor lines;
- 42 km of wire replaced at 110 kV OHL Sovetskaya-Poltavka;
- 34 km of ground wire replaced at 110 kV Siberia-Troitskaya OHL and 49 km at 110 kV Presnovka-Troitskaya OHL;
- 1,592 porcelain insulators replaced at 35 kV OHL PCHP-2 - Tyagovaya and 5,625 porcelain insulators at 110 kV Vozvyshenka-Kiyaly;
- overhaul of TDTN-10000/110 kVA transformer completed at 110/35/10 kV Vozvyshenka substation with replacement of oil-filled bushings with RIP bushings;
- three 10/0.4 kV outdoor packaged transformer substations replaced;
- twenty two 10/0.4 kV transformers replaced;
- 25,000 kVA power transformer replaced at 110/10 kV substation no. 6;
- two RGA buildings renovated;
- obsolete SCADA-based sensor panel board replaced in the central control room;
- central control room renovated;
- 1,375 REM ASCAE devices and 25 WEM ASCAE devices installed;
- nine 10-110 kV substations renovated.

### AKMOLA EDC JSC

- 77.29 km of 35-110 kV overhead power lines built;
- 133.6 km of 110 kV overhead power lines renovated;
- 23.3 km of 35 kV overhead power lines renovated;
- 74.582 km of 0.4-10 kV power transmission lines renovated, including 73.73 km of bare wires replaced with aerial bundled conductor lines;
- 22 outdoor packaged transformer substations replaced;
- 2,310 induction meters replaced with electronic ones connected ASCAE network;
- seven 35-220 kV substations renovated.

In the reporting year, CAEPCO JSC Group of companies completed a number of projects to reduce electricity transmission and distribution losses, as well as to improve the reliability of supply to consumers. In 2018, subsidiaries of the Corporation reduced technical losses as follows:  
 Pavlodar EDC JSC - 8.8 %;  
 North-Kazakhstan EDC JSC - 8.4 %;  
 Akmolat EDC JSC - 4.9 %.

## HEAT TRANSMISSION

In 2018, 18.441 km of pipelines were fitted with polyurethane insulation:

Pavlodar city – **0.357 km**

Ekibastuz city – **3.845 km**

Petropavlovsk city – **0.260 km**

In 2018, 18.441 km of pipelines were fitted with polyurethane insulation:

Pavlodar city – **4.382 km**

Ekibastuz city – **0.492 km**

Petropavlovsk city – **13.567 km**

The high level of wear of heating networks in Petropavlovsk leads to a significant number of technical failures. However, the use of polyurethane insulation allowed

reducing the number of failures from 197 in 2017 to 168 in 2018.

Modernization of heating networks in the cities of Pavlodar and Ekibastuz is expected to reduce heat losses by up to 24,429.81 Gcal/year due to reconstruction and construction of heat networks using pre-insulated pipes and by up to 4,844.35 Gcal/year due to polyurethane insulation of renovated pipes; the wear rate of such pipelines is expected to be zero. The number of technical incidents declined from 1,067 failures in 2016 to 1,005 in 2018.

Automatic heat flow regulators, industrial controllers and modems are installed at heat-transferring enterprises of the Corporation to connect their mechanisms and instrumentation with the dispatch service. All equipment at heat distribution facilities is integrated into a single network, which allows dispatchers to carry out real-time monitoring of water pressure and temperature and to make prompt decisions in case of an accident or emergency.

To reduce heat losses, a program is implemented in 2016-2020 in the cities of Pavlodar, Ekibastuz and Petropavlovsk with a total budget of **₸ 25.95 bln** including:

- loan from the European Bank for Reconstruction and Development – **₸ 9.3 bln**;

- state funds in the framework of Nurly Zhol program – **₸ 9.3 bln**;

- amortization deductions from companies' own – **₸ 7.35 bln**.

The aim of the project is to improve reliability of heat supply and energy efficiency, reduce losses and improve environmental performance by reducing CO<sub>2</sub> emissions through coal consumption savings due to reduction of heat transmission losses in networks.

As part of the project, the Corporation uses pre-insulated pipes which have better thermal insulation characteristics and improved reliability of equipment compared to conventional pipes, as well as a useful life of up to 25 years. Implementation of all of the above measures of the program will save 109,000 tons of fuel and reduce CO<sub>2</sub> emissions by 168,000 tons per year.

Furthermore, the Corporation uses advanced technology to detect the causes of heat losses, such as thermal imaging devices for pipeline monitoring and diagnostics and ultrasonic flaw detectors. Thanks to all of the above measures, heat transmission losses by the end of 2020 will be reduced by 9.1 % compared to 2015.







### EQUIPMENT RECONSTRUCTION AND MODERNIZATION PLANS FOR 2019

In 2019, as part of the investment program, the Corporation will continue to implement a number of equipment modernization projects to increase generation, reduce transmission losses for electricity and heat and improve environmental performance.

In 2019, due to the planned volume of heat supply to consumers, the Corporation intends to increase electricity production by 6.0 % compared to 2018 up to 7,444 mln kWh and heat supply by 11.9 % compared to 2018 up to 6,059 thous. Gcal.

CHP-3 of PAVLODARENERGO JSC intends to continue implementing a monitoring system at turbo generator No. 6 to control vibration of the new foundation.

In 2019, Pavlodar CHP-3 will continue the 3rd stage of the ash dump construction which is expected to be completed in 2023.

Pavlodar CHP-2 intends to renovate the condenser of turbo generator No. 2 to maintain the water-chemical regime of the plant and the rated electrical load of the turbo generator No. 2.

Construction of the ash dump site will be continued at Ekibastuz CHP.

Petropavlovsk CHP-2 of SEVKAZENERGO JSC will continue the construction of the dam no. 3 of ash dump No. 2, installation of 6AT autotransformer and renovation of the heat generation scheme.



**In 2019, the Corporation intends to allocate 14.5 bln to implement the investment program.**

A total of 3.95 km of heat networks using pre-insulated pipes will be built and renovated in 2019, including 0.250 km in Pavlodar, 3.7 km in Petropavlovsk, as well as 1.3 km of heat pipes with polyurethane insulation in Petropavlovsk.

In 2019, investment projects will include the following:

- construction, renovation and upgrading of 0.4- 10 kV electrical networks with a total length of 172.3 km as follows: 46 km in North-Kazakhstan EDC JSC, including 31 km of ABC lines, 53.48 km in Akmola EDC JSC, including 51.87 km of ABC lines, and 72.82 km in Pavlodar EDC, including 61.07 km of ABC lines;
- construction and renovation of 35-110 kV overhead lines with a total length of 127.5 km, split between Pavlodar, Akmola and North-Kazakhstan EDCs (22.1 km, 54.4 and 51 km, respectively);
- renovation of eight 35 kV substations, including Pavlodar EDC – 5, North-Kazakhstan EDC – 1, Akmola EDC – 2.

### PROCESS AUTOMATION

To improve productivity, transparency and cost-effectiveness, in 2018 CAEPCO JSC continued to implement integrated projects for the modernization and automation of production, monitoring and related information systems.

### ELLIPSE

In 2018, the implementation of Ellipse system (automated control system for managing production infrastructure) based on ABB Ellipse system focused on the development and implementation of a catalog of typical operations, expenditure ratios and unit prices for repairs. PAVLODARENERGO JSC, SEVKAZENERGO JSC and Akmola EDC JSC use this system as a powerful tool for internal control to monitor cost effectiveness of maintenance and repair, reduce timing for budget planning for equipment maintenance and repair in subsidiaries. Ellipse ACSMPI is used to ensure the transparent spending of the repair budget, rapid inspection of the equipment condition, rational planning and use of resources.

### MOBILITY

Since June 2018, Akmola REC JSC has been using Mobility mobile application in its industrial operations. In the reporting period, Mobility application was implemented in North-Kazakhstan EDC JSC, and its implementation in Pavlodar EDC JSC is expected by the end of 2019.

The development and implementation of Mobility mobile application fully integrated with Ellipse system allows a user to remotely issue work assignments, manage inventory and equipment monitoring, provide quick access to historical and regulatory data and work assignments. As part of Mobility project, a mobile application was designed for workers involved in status monitoring in order to carry out field maintenance and repair of infrastructure facilities.

### PACS (ELECTRICITY AND HEAT)

In November 2018, after successful testing, the system for automatic processing of applications from new customers was put into commercial operation in Akmola EDC JSC, North Kazakhstan EDC JSC and Pavlodar EDC JSC. Thanks to the implementation of this system, the companies were provided with the possibility to reduce and strictly regulate timing for connecting consumers, as well as to simplify and optimize the entire process of connecting new customers to infrastructure facilities.

### ASCAE/ASCAHE

In 2018, CAEPCO JSC continued implementation of the program for providing consumers and key infrastructure facilities with "smart" metering devices capable of both recording and storing readings, and also remotely transmitting them via various protocols to a common automatic system for commercial accounting of electricity and heat (ASCAE/ASCAHE). In the reporting year, new "smart" electricity metering devices were installed in the following quantities: about 6,000 in Akmola EDC JSC, over 1,000 in Pavlodar EDC JSC, nearly 1,400 in



North-Kazakhstan EDC JSC. Over 84 thousand consumers (15.7 % of the total number) use ASCAE systems.

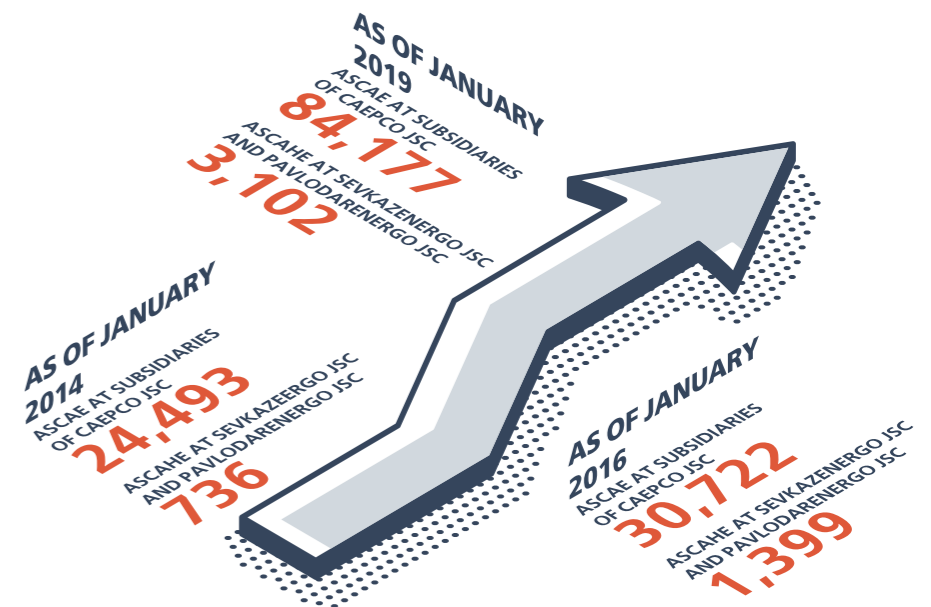
ASCAE/ASCAHE projects promotes the implementation of state programs and projects the goal of which is to digitize housing and public utilities and create "smart cities" - integrated intelligent systems for monitoring and managing urban infrastructure in Kazakhstan.

In 2018, in the framework of Smart City project, Akmola EDC JSC installed almost 6,000 meters and 83 data collection and transmission devices (DCTDs) in Akkol. Information from ASCAE, along with data from a number of other sources, is transferred online to a common information center created as part of the project, which allows the city administration to analyze current

indicators and elaborate scenarios for identifying and responding to deviations. The results of the project were successfully demonstrated to the President of the Republic of Kazakhstan.

### ASCAHE

In 2018, the Corporation continued to implement the project of automatic system for commercial accounting of heat energy (ASCAHE). As of January 1, 2019, a total of 3,102 heat meters were installed. ASCAHE devices improve the efficiency of heat data collection to monitor consumption of heat and reduce overdue payments by customers. Thanks to this system losses can be detected quickly, and appropriate measures can be taken to prevent such losses and save heat in households.





**BILLING**

In 2018, the implementation of a unified corporate billing system in Astanaenergoby LLP was completed in terms of payments for electricity and heat. In Pavlodarenergoby LLP, the system was implemented in terms of electricity for legal entities.

Pavlodar EDC JSC and Pavlodar Heating Networks LLP implemented the functionalities of energy-transmitting companies for data entry (installation/disconnection of metering devices (MDs), entry of MD readings, calculation without using MDs, calculation of violation acts, disconnection/connection of heat chambers, etc.) and determining the amount of energy consumption by consumers.

Work was performed to unify and bring to a common approach the calculation algorithms for heat and electricity consumption, as well as reporting and printing forms for all subsidiary sales companies of CAEPCO JSC. In the reporting year, a number of obsolete billing systems were decommissioned. In the near future, the developed system will be implemented in SEVKAZENERGO JSC and Akmola EDC JSC. Transition to a single billing system in all subsidiaries of CAEPCO JSC will make it possible to automate and unify the accounting of heat and electricity, as well as to provide better services to consumers through prompt calculations of the actual cost of electricity and heat consumed, provide consumers with remote service channels and a possibility to receive information through personal accounts.



**In 2018, Astanaenergoby LLP successfully implemented Billing PPC project (a user's pocket personal computer designed to manage applications in the process of taking readings of commercial metering devices and automatic data transmission in the context of consumers of the billing system). Billing PPC system allows users to record readings from metering devices, take pictures and remotely transfer them to the billing system. The system can automatically detect the actual volume for the reporting month and verify the data obtained.**

**1C: PRODUCTION PLANT MANAGEMENT**

In 2018, 1C:Management of Production Plant information system was successfully implemented in all subsidiaries, which allowed the Holding to create a common information space to monitor the financial and economic activities of enterprises, covering all core business processes of cost, tax and personnel record keeping.

**THESIS DOCUMENT AND TASK MANAGEMENT SYSTEM**

By the end of 2018, all subsidiaries of the Holding implemented THESIS electronic document management system (Thesis EDMS) and automated the main document management processes: office, records management, document management, assignment of

instructions and control of their execution. The implementation of Thesis EDMS was carried out on a phased basis, taking into account the structure and specific nature of business of subsidiaries.

The strategic advantages of implementing Thesis EDMS include the standardization of document management, significant optimization of business processes, reduction in the time of making management decisions, and improvement of management efficiency in organizations.

Thesis EDMS provides CAEPCO JSC with a flexible platform to automate other work processes. In particular, in 2018, the process of filing and approving procurement requests was automated.

**PLANS FOR PROCESS AUTOMATION FOR 2019**

- To ensure a complete and transparent service cycle, implementation of the system for automatic processing of applications from new customers in Pavlodar Heating Networks LLP and Petropavlovsk Heating Networks LLP is expected until the end of 2019.
- Completion of The Billing project for individuals is expected in the first half of 2019.
- Development and implementation of functional processes of budget planning and monitoring and cash flow management within 1C: Management of Production Plant information system.
- During 2019, the Corporation will continue to develop Thesis EDMS and implement financial, service, personnel and other business processes of the Holding.

**ACTIVITIES OF SALES COMPANIES IN 2018**

**MEASURES TO PROVIDE BETTER CUSTOMER SERVICE**

- The company improves the work of the existing service centers and opens additional payment processing centers: on March 14, 2018, as part of the on-site meeting of "Astana - Adaldyk alany" project office, the Chairman of the Agency for Civil Service Affairs and Anti-Corruption A. Shpekbayev and Akim of Astana (Nur-Sultan) city A. Issekeshov visited the renovated central office of Astanaenergoby LLP. The guests were demonstrated changes aimed at improving customer service: a staff call button and a ramp were installed for people with disabilities, tactile tiles were provided at the entrance of the service center and a pictogram was placed at the front desk to facilitate space orientation, and the waiting hall was significantly expanded. During the visit, the officials saw the work process of the company and discussed the issues of improving customer service in other offices of Astanaenergoby LLP.
- JSC for retail consumers of AEDC-Energoby LLP, which allows users to monitor consumption limits, enter current readings of electricity metering devices, print receipts, see settlements on personal accounts, make payments, etc.
- To provide better customer service, General Director of SEVKAZENERGO JSC initiated the creation of an interdepartmental commission, which included representatives of SEVKAZENERGO JSC group of companies, government bodies and public associations of Petropavlovsk. The commission held its first meeting in December 2018, at which it addressed issues



of interaction between energy service suppliers and consumers, simplification of procedures for energy supply to the public, as well as improvement of efficiency and availability of services provided by the energy company. Meetings of the interdepartmental commission will be held on a regular basis.

and heat networks, submit documents for entering into electricity and heat supply contracts and obtain any other services.

- In November 2018, as part of re-branding of service centers of Astanaenergoby LLP, a new service center with a doubled area of 440 m2 was presented in Ansar business center.
- In December 2018, in the framework of the Open Pavlodar project implemented by the city administration, an additional service center of Pavlodarenergoby LLP was opened in the common public services office located at 25 Krivenko St., Pavlodar, where visitors can make payments, get advice on energy supply issues, file applications to obtain technical specifications of connecting to electricity
- Sevkazenergosbyt LLP opened a new utility payment center in the City Mall shopping center, which reduced the burden on the existing service centers and made it possible to cover remote areas of the city with services.
- Service centers of Astanaenergoby LLP, Pavlodarenergoby LLP and Sevkazenergosbyt LLP have buttons for assessing the quality of customer service as well as an electronic queue management system.



**INCREASING CONSUMER MOTIVATION**

- All sales companies of the Holding actively cooperate with the media, where they post information on working with debtors, rates and announcements for consumers.
- All offices of the Holding's sales companies constantly update information on the terms of payment for electricity and heat according to the terms of Model Contracts, as well as on liability for late payment and possible ways of making payment.
- The Corporation performs work to raise public awareness. To reduce household debt, Pavlodarenergosbyt LLP systematically works with consumers in rural areas of Pavlodar region, e.g. it holds informational meetings with the public where issues of reducing debt are addressed.
- Consumers who have debts for electricity and heat are proposed to draw up a schedule for debt repayment in installments. Thus, in 2018, over a thousand debt repayment agreements were concluded with households.



**PLANS OF SALES COMPANIES FOR 2019**

Further expansion of the Unified Settlement Center:

- within the framework of the consolidated payment system, Pavlodarenergosbyt LLP cooperates with utilities, condominium management bodies and other organizations that provide services to consumers in Pavlodar region.
- Sevkazenergosbyt LLP will continue to work with Kazakhtelecom JSC by including energy charges in a single payment document for communication services for consumers who live in remote areas of the region, as well as with other municipal

services of the city and districts of the region (disposal of solid household waste, house intercom systems, cable television elevator maintenance).

Pavlodarenergosbyt LLP and Sevkazenergosbyt LLP will commence commercial operation of new 1C Billing software to unify and automate the metering of electricity and heat.

An additional utility payment window will be opened in the service center of Sevkazenergosbyt LLP as part of execution of proposals made at meetings of the interdepartmental commission.



**“ CUSTOMER CONVENIENCE IS OUR MAIN PRIORITY**

**BAGDAT ORAL,**  
DEPUTY GENERAL DIRECTOR FOR ENERGY SALES OF CAEPCO JSC



**— What are the results achieved in 2018?**

— The sales companies across CAEPCO JSC Group sold electricity in the amount of 4,499.7 mln kWh, showing an increase of 9% compared to 2017. Sales of heat amounted to 12,627 thous. Gcal. Compared to the previous, the sales volume increased by 16%.

In 2018, the number of consumers of CAEPCO JSC Group of companies was 799,158 for electricity and 510,763 for heat, showing an increase of about 4% compared to 2017.

It is important to note that in the reporting period we implemented a number of activities to improve the quality of customer service.

**— What principles are applied by sales companies in their work?**

— The basic principle is to ensure the sustainable development of the company by meeting the demands and expectations of consumers and other stakeholders.

We are also committed to achieve a high quality of services in sales of electricity and heat as well as to ensure openness and availability of information.

To improve the investment attractiveness of the enterprise and customer loyalty to the activities of our energy supplying organizations, we decided to implement a quality management system at our enterprises to ensure compliance with the international ISO 9001 standard and its subsequent certification.

Sales companies of Astanaenergosbyt LLP, Sevkazenergosbyt LLP and Pavlodarenergosbyt LLP have already been certified to verify compliance with ISO-9001:2015 in the field of "Providing heat and electricity sales services", and we will continue working in this direction.



# PROCUREMENT AND SUPPLY

## KPI EVALUATION SYSTEM

During 2018, the Group of companies took measures to improve transparency and implement an effective procurement planning system, KPI evaluation and supplier pre-qualification system, updating internal documents regulating procurement processes.

In the reporting year, 1,901 contracts were concluded with a 85 % share of contracts signed with residents. The total budget for inventories for 2018 was over KZT 10 bln.

At the end of the reporting period, the following objectives were accomplished:

- the annual procurement plan was implemented;
- KPI evaluation system was implemented;

- a system of supplier pre-qualification (supplier base) was introduced;
- processes were revised and internal procurement regulations were approved;
- Thesis electronic document management system was implemented;
- procurement organizational structure was approved.

### PROCUREMENT PLANS FOR 2019:

- approval of the annual procurement plan;
- implementation of the "Procurement Requests" block through Tezis EDMS;
- development of a reporting form for supplies and payments.

## “OUR OBJECTIVE IS HIGH EFFICIENCY AND TRANSPARENCY OF PROCUREMENT”

**ALEXANDER NIGAY,**

DEPUTY GENERAL DIRECTOR FOR  
COMMERCIAL AFFAIRS OF CAEPCO JSC

### — What are the challenges of CAEPCO Group of companies in the field of procurement?

— Building effective procurement activities remains one of the important goals of the Corporation with a view to improving operational efficiency. The key priorities of CAEPCO JSC Group of companies in the field of procurement include ensuring transparency during tenders, attracting more vendors for better business efficiency and reduced costs.

### — What principles are important in the field of procurement?

— First of all, this is ensuring equal opportunities for all participants. During tenders, we are committed to an objective and fair selection of the winning bidder, the most profitable offer for the company in the framework of the bid documentation. An important factor in this question is proper planning of timing for commencement of tender procedures, as well as their effective and timely implementation. All information about potential suppliers is verified thoroughly for compliance with the qualification requirements specified in the bid documentation. To reduce the corruption risk, the Group of companies has adopted an Anti-Corruption and Fraud Policy, which is communicated to all potential suppliers for review.

# FINANCIAL AND ECONOMIC INDICATORS

The consolidated financial statements of the Corporation for 2018 have been prepared in accordance with the International Financial Reporting Standards and include the financial statements of subsidiaries from the date of their acquisition. Principles of the accounting policies are the equal for all enterprises of the Corporation. The key financial and economic indicators demonstrate effectiveness and efficiency of the operational and financial activities, as well as achievement of the Corporation's strategic development targets.

### INCOME FROM SALE OF PRODUCTS/SERVICES

In 2018, the Corporation produced electricity and heat, including transmission and sale of purchased energy, for a total amount of

KZT 143,880 mln, which is KZT 12,228 mln or 9.3 % more compared to 2017, including: income from sale and transmission of electricity increased by KZT 3,608 mln or 3.67 %, income from sale and transmission of heat grew by KZT 8,623 mln or 26 %, income from other activities declined by KZT 2.01 mln or 2.75 %.

The main factors which affected income from sale in 2018 compared to the previous year are as follows:

- Revenue from electricity sales increased by KZT 2,150 mln or 2.72 % compared to 2017 due to increase in commercial output of electricity by 48 mln kWh including increase by 45 mln kWh in AEDC JSC and the growth in the limiting rate by 3.04 % in Group of companies CAEPCO JSC;

- Revenue from electricity transmission increased by KZT 1,458 mln or 7.5 % due to the growth in the limiting rate for electricity transmission by 5.6 % (from 4.27 KZT/kWh to 4.507 KZT/kWh), and increase in the volume of electricity transmission through the networks by 150 mln kWh or 7 %;
- Revenue from heat transmission increased by KZT 1,666 thous., or 21.5 %, in particular, thanks to increase in transmission volumes by 5.8 % across Pavlodarenergo JSC and a 16.1 % growth in rates;
- Revenue from heat sales, including the sales margin, increased by KZT 6,957 mln or 27.4 % due to increase in heat consumption by 1,762 thous. Gcal or 16.2 %, and earlier commencement of heating at socially significant facilities in connection with a lower average daily outdoor temperature and extension of the heating season.

### KEY FINANCIAL AND ECONOMIC INDICATORS FOR 2016 – 2018, KZT MLN

INDICATOR	2016	2017	2018
Income from core activities	122,123	131,652	143,880
Prime cost	(93,198)	(100,295)	(114,310)
Gross profit	28,925	31,357	29,571
Expenses of the period	(9,932)	(11,178)	(12,667)
Profit from operating activities	18,993	20,178	16,903
Total EBITDA for the year *	31,263	31,865	29,405
Total EBITDA for the year, margin in %	25.6 %	24.2 %	20.44 %
Goodwill impairment	—	(737)	—
Foreign exchange income/losses	404	181	(5,479)
Income tax expenses	(3,547)	(3,613)	(2,232)
<b>Net profit for the year</b>	<b>11,264</b>	<b>10,639</b>	<b>1,600</b>
<b>Total income for the year</b>	<b>287,221</b>	<b>310,023</b>	<b>1,584</b>
<b>Assets</b>	<b>287,221</b>	<b>310,023</b>	<b>314,089</b>
<b>Equity</b>	<b>140,835</b>	<b>149,785</b>	<b>144,665</b>
<b>Capital expenditures on fixed assets</b>	<b>22,620</b>	<b>22,685</b>	<b>21,118</b>

\* Total EBITDA excludes exchange rate difference



**COST OF PRODUCTS SERVICES SOLD**

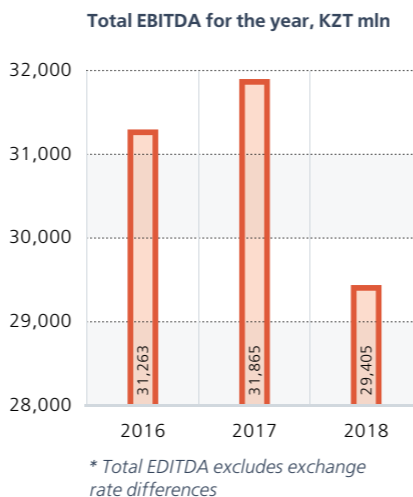
In 2018, the cost of electricity and heat sold was KZT 114,310 mln, which is KZT 14,015 mln or 14 % more compared to 2017. This increase is due to higher operating expenses under such items as "Electricity Sale Services", "Purchased Heat", "Fuel", "Heat Sale Services", "Remuneration of Labor", "Repair", "Purchased Electricity", "Wear and Deprecation". The cost structure of the Corporation is dominated (45.5 %) by the cost of purchased energy, including services related to its further distribution to consumers. In 2018, these costs increased by KZT 8,498 mln, or 19.6 %, due to increase in the volume of energy purchased and the cost of its transmission through the networks of KEGOC JSC. The growth in production of heat energy by 1,764 thous. Gcal or 16.24 %

caused an increase in expenses under "Fuel" item (natural coal) by KZT 1,887 mln, or 10.1 %, due to increase in the average price for coal, taking into account railway delivery costs, or 9 %. Moreover, prices for petrol, diesel fuel, oil and other fuels and lubricants also increased. Increase in "Repair" costs by KZT 962.5 mln was caused by an increase in repair volumes in line with the rate estimates approved for the year. Labor remuneration expenses increased by KZT 1,289 mln or 12 % due to the annual indexation and higher headcount. Depreciation costs increased by KZT 412 mln or 4 % due to the introduction of new fixed assets in 2018 totaling to KZT 21,118 mln.

**DYNAMICS OF TOTAL EBITDA**

In 2018, EBITDA, excluding exchange rate difference, amounted to KZT 29,405 mln, which is KZT

2,460 mln or 7.7 % less compared to 2017. The main reasons of reduced operating efficiency include a decline in gross income by KZT 1,786 mln and increase in expenses of the period by KZT 1,489 mln.

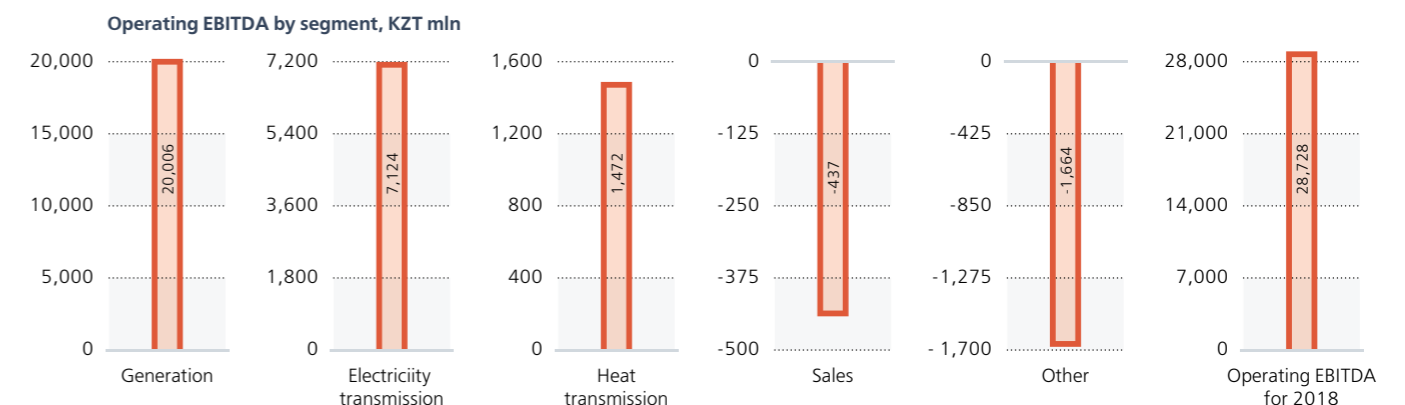


**Operating EBITDA** was chosen as the main indicator of the Corporation's operational efficiency. This indicator does not account for other income, revenue from financing, non-monetary component of exchange rate difference-related liabilities, depreciation, amortization and non-recurring or erratic cost items that have no impact on the core operations of the Corporation. In 2018, operating EBITDA of the Corporation was KZT 28,728 mln, which is KZT 2,777 mln or 9.66 % less compared to 2017. The main (high-priority) margin segment in the structure of operating EBITDA is the production of electricity and heat (KZT 20,006 mln), a decline of 8.1 % compared to 2017 is caused by increase in the prime cost of this activity. In the segment "Transmission and Distribution of Electricity", the indicator declined by KZT 2,132 mln due to decreasing of electric transmission by 46 mln rWh



and increasing of prime cost. In the segment "Transmission and Distribution of Heat", EBITDA increased by KZT 928 mln thanks

to higher rates for transmission of electricity. In the segment "Sales of Electricity and Heat", EBITDA declined by KZT 765 mln.



**FOCUS ON EFFICIENCY**

**ALLA YAZOVSKAYA,**  
DEPUTY GENERAL DIRECTOR FOR ECONOMY AND FINANCE, CAEPCO JSC

**— What are the main tasks of the financial department?**

— Our activity is strategic. The financial department studies the prospects for the industry development in the short and medium term, due to which we can understand the market situation of the company and the features of working in the existing conditions. Our objectives include control over operating expenditures, consideration of receivables, financial planning and forecasting in subsidiaries as well as in headquarters of CAEPCO. We also actively participate in budgeting within the framework of specified rates.

Across the Holding, financial specialists pay great attention to the issues of automation, implementation of effective document management and improvement of business processes. Technologies used include an

automated enterprise resource planning system based on Ellipse 8. For example, the system is used to draw up budgets for maintenance and repairs based on a detailed plan. All work is based on the equipment maintenance strategies and related schedules for the supply of materials and spare parts, which makes it possible to optimize repair and asset management costs.

**— What projects are especially noteworthy?**

— Participation of the Holding in public-private partnership projects is of great importance. For example, in 2016, in the framework of Nurlu Zhol program, the Holding allocated its own funds along with government grants and loans from the EBRD to implement projects of modernization and restoration of the centralized heat supply systems of Pavlodar, Ekibastuz and Petropavlovsk. The project was started in 2018 and will be continued in the future.

**CHANGES IN NET INCOME/LOSS**

Income from operating activities in 2018 amounted to KZT 16,903 mln (11.7 % to the income from sales); income decreased by KZT 3,275 mln or 16.2 % due to the growth in cost of products sold by KZT 14,015 mln, or 14.0 %, as well as an increase in expenses of the period by KZT 1,489 thous. Net financial expenses increased by KZT 1,801 mln or 39 %. Net income for 2018 amounted to KZT 1,600 mln. Total income for 2018 amounted to KZT 1,584 mln.





FINANCIAL AND ECONOMIC INDICATORS BY SEGMENT FOR 2018, KZT MLN

Indicator	Production of electricity and heat	Transmission and distribution of electricity	Transmission and distribution of heat	Sales of electricity and heat	Other	Elimination	Total
Income from core activities	67,936	24,939	9,476	106,140	93	(64,703)	143,880
Prime cost	(49,890)	(18,290)	(7,343)	(102,822)	—	64,035	(114,310)
Gross profit	18,045	6,648	2,133	3,318	93	(667)	29,571
Expenses of the period	(5,190)	(2,619)	(1,920)	(3,891)	(1,942)	2,894	(12,667)
Income from operating activities	12,856	4,029	213	(573)	(1,849)	2,227	16,903
Financial expenses, net	(2,996)	(821)	(935)	(356)	1,707	(3,452)	(6,853)
Income/loss from exchange rate difference	(2,362)	(2,382)	(444)	1	(293)	—	(5,479)
Other income	121	480	871	473	158	(2,304)	(201)
Impairment/restoration of financial assets	(21)	(13)	(290)	15	(230)	—	(538)
Income tax expenses	(2,133)	(239)	(195)	2	334	—	(2,232)
Net profit of the year	5,465	1,054	(780)	(437)	(173)	(3,530)	1,600
Operating EBITDA by segment	20,006	7,124	1,472	(437)	(1,664)	2,227	28,728

in line with the Corporation's strategy. Long-term loans mainly include loans from the EBRD, ADB, Sberbank of Russia JSC, which are issued to finance the long-term investment program for reconstruction and modernization of the Corporation's assets.

Total financial debt as of the end of the reporting year was equal to KZT 94,456 mln, while the Corporation maintains financial stability.

CASH FLOW

In 2018, net inflow from operating activities amounted to KZT 21,525 mln.

The most significant cash outflows from investing activities amounting to KZT 21,536 mln were caused by the investment program of the current period, as well as payment of the debt on facilities completed in 2018. The change in cash from investing activities amounted to KZT 18,688 mln. Significant outflows from financing activities are caused by repayment of bank loans in the amount of KZT 30,577 mln. The change in cash flow from financial activities amounted to KZT 3,934 mln. Significant outflows from financing activities are caused by repayment of bank loans in the amount of KZT 26,195 mln. The total net cash as of the end of 2018 was KZT 1,302 mln.

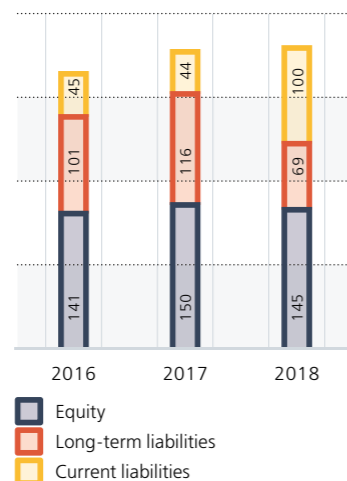


ASSETS AND LIABILITIES

As of December 31, 2018, total assets of the Corporation amounted to KZT 314,089 mln, which is 1.3 % more compared to 2017. As of December 31, 2018, the value of fixed assets was KZT 260,133 mln, or 83 % of the value of all assets. As a part of the large-scale investment program, the amount of KZT 21,118 mln was spent in 2018 on unfinished construction and acquisition of fixed assets, as well as on commissioning of new and upgraded facilities from the current period and from the previous years.

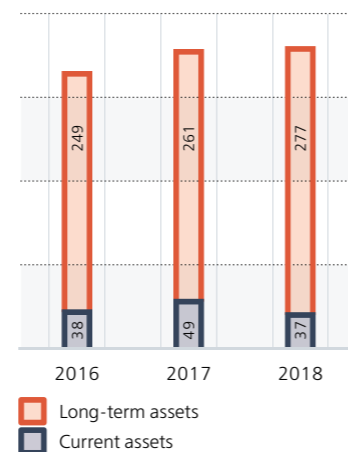
Other financial assets include deposits with flexible conditions of partial replenishment and withdrawal. Deposits consist of funds accumulated by the Corporation for loan service, investment program financing and maintenance of the current assets.

Liabilities, KZT bln

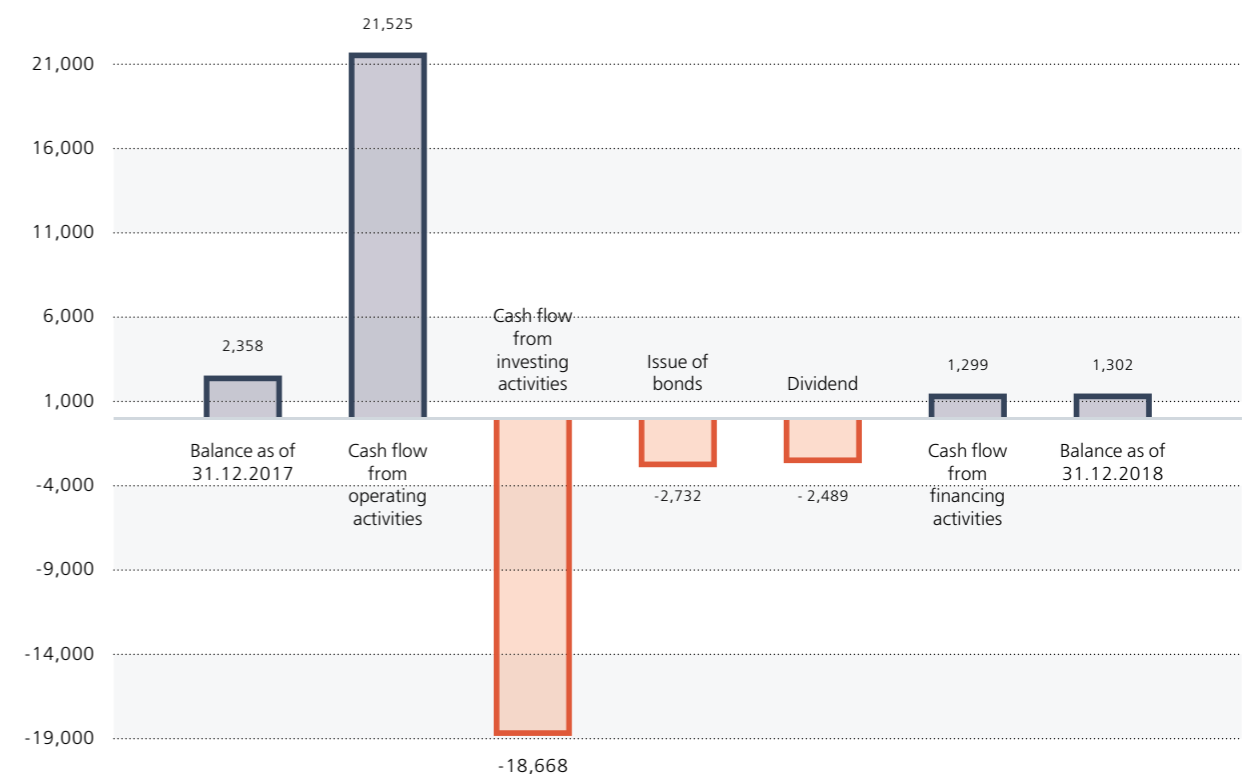


The issued share capital of the Corporation is 50 mln ordinary shares. As of December 31, 2018, the value of completely paid ordinary shares was KZT 46,043 mln.

Assets, KZT bln



The Corporation has issued coupon commercial bonds for the amount of KZT 1,441 mln (including PAVLODARENERGO JSC totaling KZT 1,441 mln with indexed interest rate of 12.5 %). These funds were used to finance the investment program and development projects





# CORPORATE GOVERNANCE

## GENERAL MEETING OF SHAREHOLDERS

The General Meeting of Shareholders is a supreme management body of the Corporation. Participation in annual general meetings of shareholders, as well as in extraordinary meetings announced by the Board of Directors or the executive body, is the primary way for shareholders to exercise their rights, as reflected in the Charter of the Corporation.

Shareholders of the Corporation may make suggestions to the agenda of the annual General Meeting, nominate candidates to the Board of Directors and its Committees, and convene meetings of the Board of Directors.

## RESULTS OF THE GENERAL MEETING OF SHAREHOLDERS

In 2018, the Corporation held 1 annual and 4 extraordinary General Meetings of Shareholders which addressed the following issues: approval of financial statements of subsidiaries of CAEPCO JSC; determining the procedure for distribution of net income; review of applications from shareholders regarding the actions of subsidiaries of CAEPCO JSC; choosing an audit organization to audit the financial statements of CAEPCO JSC and its subsidiaries; election of new members to the Board of Directors of CAEPCO JSC and its subsidiaries; determining the amount and terms of remuneration for newly elected members of the Board of Directors of CAEPCO JSC and certain subsidiaries, etc.

## INFORMATION ON DIVIDENDS

The Corporation's policy regarding distribution, announcement, size, form and terms of dividend payment is set out in the Corporation's Charter and the Dividend Policy of CAEPCO JSC.

The main principles of the Corporation's Dividend Policy include:

- balance between the interests of the Corporation and its shareholders in determining the amount of dividend payment;
- improving investment attractiveness, financial sustainability, capitalization and liquidity of the Corporation;
- ensuring market returns on invested capital.

The Corporation intends to allocate a certain portion of its net income to pay dividends in the amount that would allow the Corporation to

keep enough funds for its further development. A decision on dividend payout is made by the annual General Meeting of Shareholders based on the recommendation of the Board of Directors. In case of any unforeseen circumstances having a negative effect on the Corporation, the Board of Directors should recommend the General Meeting of Shareholders to refrain from dividend payout (announcement).

In 2018, the annual General Meeting of Shareholders decided to pay dividends to shareholders of CAEPCO JSC for the fiscal year 2017 in the amount of KZT 2,127.8 mln.

## BOARD OF DIRECTORS

The Board of directors of the Corporation determines strategic goals and maintains the necessary operational control mechanisms, including ongoing monitoring and evaluation of business performance.

To enhance the transparency of the Corporation's activities, the Board of Directors includes three independent directors who are not affiliated with the Corporation. The Board of Directors is headed by the Chairman, who convenes meetings of the Board of Directors and presents their agenda based on the recommendations received from members of the Board of Directors and Committees of the Board of Directors.

To achieve the performance goals, the Board of Directors is guided by the following principles:

- peer-review decision making with thorough discussion of issues using reliable and complete information on the Corporation's activities in accordance with the highest business standards;
- non-admission of restrictions on the legitimate interests and rights of shareholders to participate in the management of the Corporation, receive dividends, reports and information on the Corporation;
- ensuring a balance between the interests of shareholders of the Corporation and maximum objectivity of decisions made by the Board of Directors in the best interests of shareholders;
- providing the Corporation's shareholders with reliable and timely information.

Remuneration for the Board of Directors and the executive body is determined by the decision of the General Meeting of Shareholders of CAEPCO JSC. The total amount of remuneration paid to the Board of Directors and the executive body in 2018 was KZT 147.6 mln.

## SELECTION AND APPOINTMENT

Members of the Board of Directors of CAEPCO JSC are elected by the decision of the General Meeting of Shareholders of the Corporation. Pursuant to the Charter of CAEPCO JSC, the Board of Directors should consist of at least six persons, of whom at least one third should be independent directors. A member of the Board of Directors of CAEPCO JSC should be an individual only, who is elected from among:

1. Shareholders being individuals;
2. Persons recommended to be elected to the Board of Directors as representatives of shareholders' interests;
3. Individuals who are not shareholders of the Company and who are not proposed for election to the Board of Directors as representatives of shareholders' interests.

General Director of CAEPCO JSC may also be elected as a member of the Board of Directors, however, may not act as the Chairman of the Board of Directors.

The Chairman of the Board of Directors of CAEPCO JSC is elected from among its members by a majority vote of the total number of members of the Board of Directors by show of hands.

The term of office of members of the Board of Directors is determined by the General Meeting of Shareholders of CAEPCO JSC. The term of office of the Board of Directors expires on the date of the General Meeting of Shareholders, at which a new Board of Directors is elected. Persons elected to the Board of Directors may be re-elected any number of times.

## “ OVER 10 YEARS, WE HAVE BUILT AN EFFECTIVE CORPORATE GOVERNANCE SYSTEM

TALGAT ZHUMADILOV,

MANAGING DIRECTOR FOR CORPORATE DEVELOPMENT

### — What is the corporate governance system of the Corporation?

— The corporate governance system is a basis for all management processes in the company. From the very beginning, corporate governance in CAEPCO JSC has been based on the highest international standards applied to operations of our shareholders. For example, the European Bank for Reconstruction and Development in carrying out its activities promotes the sustainable development in an environmentally friendly and socially healthy manner. This policy was communicated by the Bank shareholder at meetings of the Board of Directors and, for sure, is taken into account in our activities.

### — What are factors contributing to enhancement of transparency and efficiency?

— From the very beginning, the Board of Directors includes independent directors with extensive experience in core industries to ensure an efficient and transparent corporate governance system. It is also important to note the work of the Strategic, Audit, Technical and Social Affairs committees, which review thoroughly the aspects of activities in relevant areas. Besides members of the Board of Directors, employees of the Corporation and its subsidiaries also participate in the work of the committees. In the course of our business activity, we comply with all applicable regulations and standards and are committed to the principles of business ethics to ensure sustainable development.



## MEMBERS OF THE BOARD OF DIRECTORS (AS OF JANUARY 29, 2019)

TERM OF OFFICE OF ELECTED MEMBERS OF THE BOARD OF DIRECTORS IS 2 YEARS  
(UNTIL JANUARY 21, 2021)

### ALEXANDER KLEBANOV (born 1963)

*CHAIRMAN OF THE BOARD OF DIRECTORS*

Chairman of the BoD of CAEPCO JSC, Chairman of the BoD and shareholder of CAPEC JSC.

20.08.2007 – Chairman of the BoD of CAPEC JSC;

16.03.2009 – Chairman of the BoD of CAEPCO JSC;

29.01.2019 – re-elected as a member of the BoD of CAEPCO JSC (member of the BoD since 2008).

### SERGEY KAN (born 1968)

*MEMBER OF THE BOARD OF DIRECTORS*

General Director of CAEPCO JSC, shareholder and member of the BoD of CAPEC JSC.

01.08.2004 – Member of the BoD of CAPEC JSC;

12.11.2007 – Executive Director of Caspian Offshore Construction LLP;

01.02.2010 – President of Circle Maritime invest JSC;

31.05.2012 – Chairman of the BoD of Circle Maritime Invest JSC;

15.10.2015 – Chairman of the BoD of Kazakh Institute for Oil & Gas JSC;

28.09.2017 – President of CAEPCO JSC (in 2019, the position was renamed as General Director);

29.01.2019 – re-elected as a member of the BoD of CAEPCO JSC (member of the BoD since 2017).

### ZHANDAR KUTBAY (born 1985)

*MEMBER OF THE BOARD OF DIRECTORS*

01.07.2014 – 01.08.2015 - Advisor to the Chairman of the BoD of Astana Finance Bank JSC;

01.08.2015 – 01.09.2017 - Investment Director, Deputy Chairman of the Board of Almix-Baiterek Fund LLP;

01.09.2017 – Chairman of the Board of Baiterek Venture Fund JSC;

29.01.2019 – re-elected as a member of the BoD of CAEPCO JSC (member of the BoD since 2018).

### ANDREY KARYAGIN (born 1967)

*MEMBER OF THE BOARD OF DIRECTORS*

01.01.2014 – 01.01.2016 – Chairman of the Board of Astana Invest Investment House JSC;

01.01.2016 – 01.09.2017 – President of Astana Investment Corporation;

25.12.2017 – Chairman of the BoD of Astana Invest Investment House JSC;

15.01.2018 – Member of the BoD of PAVLODARENERGO JSC;

15.01.2018 – Member of the BoD of SEVKAZENERGO JSC;

15.01.2018 – Member of the BoD of Akmola Electric Distribution Company JSC;

29.01.2019 – re-elected as a member of the BoD of CAEPCO JSC (member of the BoD since 2017).

### FRANZ-JOSEPH KAISER (born 1949)

*MEMBER OF THE BOARD OF DIRECTORS, INDEPENDENT DIRECTOR*

Is not affiliated with CAEPCO JSC and has not been as such for the past three years.

17.11.1975 – 30.06.2009 – Partner at PricewaterhouseCoopers (PWC);

2005 – 30.06.2009 – PWC's Project Partner for RAO UES of Russia;

29.01.2019 – re-elected as a member of the BoD, independent director of CAEPCO JSC (member of the BoD since 2009).

### MANFRED-JOSEPH KEHR (born 1947)

*MEMBER OF THE BOARD OF DIRECTORS, INDEPENDENT DIRECTOR*

Is not affiliated with CAEPCO JSC and has not been as such for the past three years.

2003–2009 – Vice President of RWE Power International;

2008–2010 – Managing Director, Senior Advisor at RWE Power International;

25.02.2011 – Chairman of the BoD at Rhein Ruhr Power;

25.10.2011 – Member of the BoD, Independent Director at CAEPCO JSC.

29.01.2019 – re-elected as a member of the BoD, independent director of CAEPCO JSC (member of the BoD since 2011).

### ELDAR TABANOV (born 1968)

*MEMBER OF THE BOARD OF DIRECTORS, INDEPENDENT DIRECTOR*

04.01.2013 – Member of the BoD, Independent Director of CAPEC JSC;

01.01.2014 – 13.06.2017 - Member of the BoD, Independent Director of North-Kazakhstan Electric Distribution Company JSC;

09.09.2015 – 16.11.2016 – Deputy Chairman of the Board of Astana Community Entrepreneurship Corporation NC JSC;

13.10.2016 – Member of the BoD, Independent Director of Pavlodar Electric Distribution Company JSC;

29.09.2017 – Director of City Box LLP;

15.01.2018 – Member of the BoD, Independent Director of PAVLODARENERGO JSC;

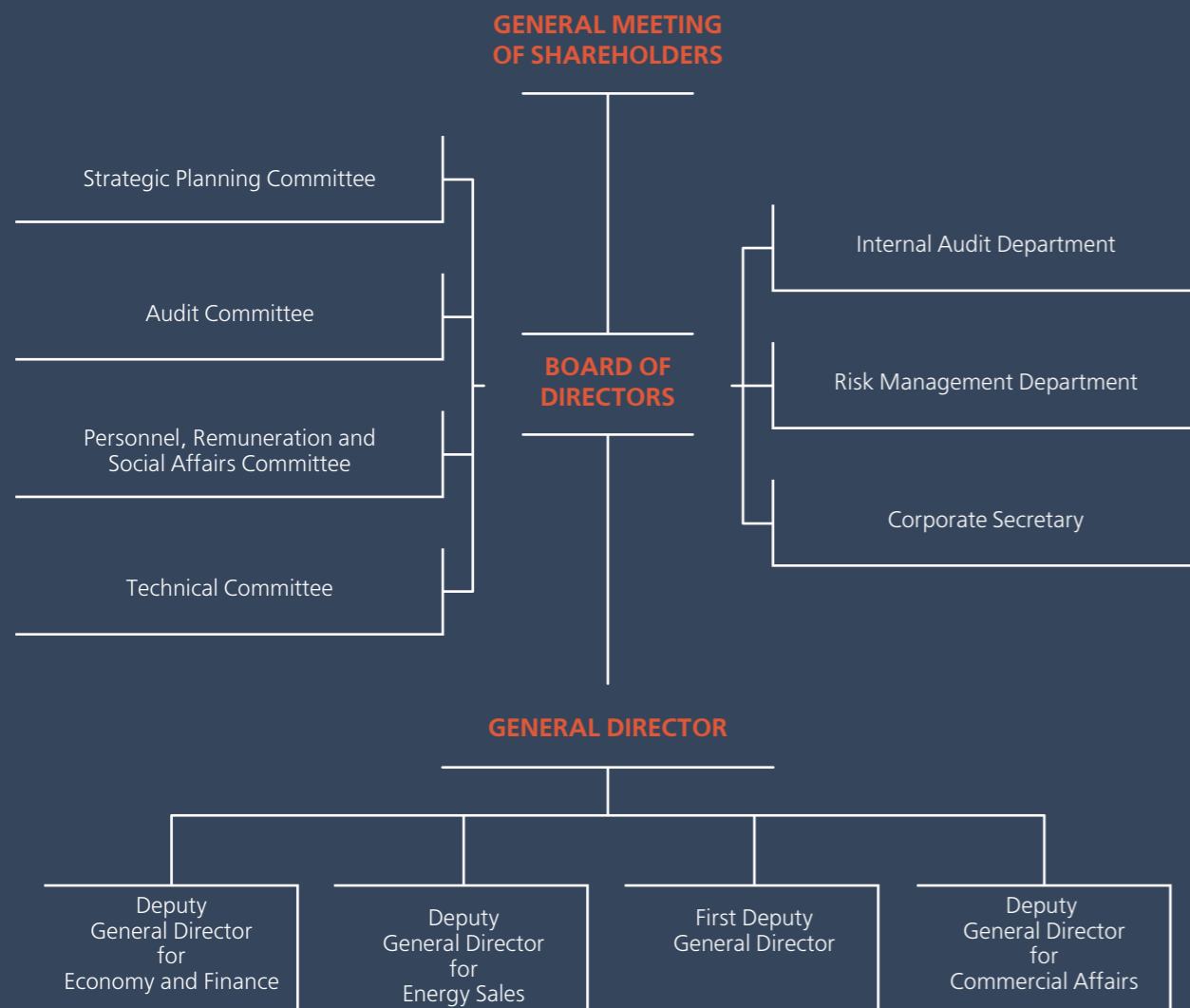
15.01.2018 – Member of the BoD, Independent Director of Akmola Electric Distribution Company JSC;

15.01.2018 – Member of the BoD, Independent Director of SEVKAZENERGO JSC;

29.01.2019 – re-elected as a member of the BoD, independent director of CAEPCO JSC (member of the BoD since 2017).



ORGANIZATIONAL STRUCTURE (IN 2019)



PERFORMANCE OVERVIEW OF THE BOARD OF DIRECTORS

In 2018, the Board of Directors held 8 meetings. The Board of Directors focused on a number of key issues such as review of monthly and quarterly management reports; monitoring the execution of the consolidated business plan of CAEPCO JSC for 2017; introduction of adjustments to the consolidated business plan (budget) of CAEPCO JSC for 2018 and its approval; preliminary approval of the annual financial statements of Astanaenergosbyt LLP for 2017; preliminary approval of the annual

consolidated financial statements of CAEPCO JSC for 2017; determining the procedure for net income distribution of CAEPCO JSC for the fiscal year 2017 and the amount of dividend per one ordinary share of CAEPCO JSC; preliminary selection of an audit organization to audit the consolidated financial statements of CAEPCO JSC for 2018; review of activity reports of the Internal Audit Department of CAEPCO JSC; review of activity reports of the Risk Management Department of CAEPCO JSC; election of Vice-President for Economy and Finance of CAEPCO JSC, election of a new member of the Technical Committee, Audit Committee and Strategic Committee of the Board of Directors of CAEPCO JSC, approval of a number of corporate documents, etc.



“ CAEPCO HAS IMPLEMENTED THE INVESTMENT PROGRAM AT A HIGH LEVEL

MANFRED-JOSEPH KEHR,  
MEMBER OF THE BOARD OF DIRECTORS,  
INDEPENDENT DIRECTOR OF CAEPCO JSC

SHARE CAPITAL STRUCTURE

As of December 31, 2018, the authorized capital of CAEPCO JSC was

₸ 46,043,272 thous.



Central-Asian power-energy company JSC



KIF ENERGY S.a.r.l.



CKIF ENERGY S.a.r.l.



Baiterek Venture Fund JSC



— How would you comment on the Corporation performance results for 10 years?

— Over the years, CAEPCO has been actively transforming its business by upgrading its energy assets. It is worth noting that this transformation has improved the efficiency of heat and electricity production, as well as reduced the level of environmental impact. By implementing the best practices of western peer companies, CAEPCO succeeded in implementing the investment program. I've been working as a member of the Board of Directors for eight years and I am also a member of the Strategic and Technical Committees of the Board of Directors of CAEPCO JSC. I believe that the modernization of combined heat and power plants of a private company is an excellent example for Kazakhstan.

— What are the challenges for the Board of Directors?

— The main objective of the Holding is to promote further development as the most modernized heat and electric power company. Currently, we are developing a strategy for the next decade and constantly thinking about what the company should be in ten years. Therefore, it is very important for us to look forward. I am very glad that we all are working in a team for the benefit of the Corporation.



## PERFORMANCE OVERVIEW OF THE COMMITTEES OF THE BOARD OF DIRECTORS

AS OF DECEMBER 31, 2018, THE BOARD OF DIRECTORS OF CAEPCO JSC HAD FOUR COMMITTEES:

Name	Tasks	Members	Performance results
<b>Strategic Committee</b>  7 members 1 meeting in 2018	Enhancement of corporate governance efficiency - monitoring of project implementation - monitoring of implementation of the Corporation's development strategy - assisting the Board of Directors in improving the Corporation's planning and business development mechanisms	<b>M. Kehr</b> <b>Chairman</b>  S. Kan D. Turganov G. Wood Chai Chee Tak A. Karyagin O. Perfilov	In 2018, the Committee provided assistance to the Board of Directors in improving the Corporation's planning and business development mechanisms.
<b>Audit Committee</b>  5 members 2 meetings in 2018	Assisting the Board of Directors in the effective performance of regulatory and oversight functions - Improvement and strengthening of the internal audit and risk management systems - Advising the Board of Directors on matters requiring actions on its part	<b>Kaiser F.</b> <b>Chairman</b>  A. Yazovskaya G. Wood Chai Chee Tak A. Karyagin	In 2018, the Committee assisted the Board of Directors in effective performing its regulatory and supervisory functions, improving and strengthening the internal audit and risk management systems. The Committee addressed issues relating to activities of Internal Audit and Risk Management Departments, including review of relevant activity reports of departments, approval of budgets, work plans, introduction of amendments and additions to relevant corporate regulations and procedures, etc.
<b>Personnel, Remuneration and Social Affairs Committee</b>  5 members 1 meeting in 2018	Development and implementation of a uniform human resources policy for the Corporation and its subsidiaries building an effective governance system and implementation of its principles	<b>E. Tabanov</b> <b>Chairman</b>  D. Turganov A. Karyagin A. Nigay N. Konstantinova	In 2018, the Committee assisted the Board of Directors in building an effective corporate governance system. The Committee addressed issues relating to activities of the HR Department of CAEPCO JSC and effective use of human resources in CAEPCO JSC and its subsidiaries.
<b>Technical Committee</b>  6 members 2 meetings in 2018	Timely and effective monitoring of the status of investment projects in the Corporation	<b>M. Kehr</b> <b>Chairman</b>  D. Turganov G. Wood Chai Chee Tak G. Andreyev O. Perfilov	In 2018, the Technical Committee ensured effective participation of its members in the implementation of timely and effective monitoring of the Corporation's investment projects.



### EXECUTIVE BODY

General Director is the sole executive body of the Corporation responsible for managing the Corporation's day-to-day operations and implementing a strategy

determined by the Board of Directors and shareholders. General Director is guided by the principles of action in the best interests of shareholders, integrity, diligence, prudence and vigilance.

### GENERAL DIRECTOR OF CAEPCO JSC SERGEY KAN

#### BRIEF BIOGRAPHY

In **1998**, Sergey Kan graduated from Almaty State University named after Abay. He has more than 20 years of experience in the development, promotion and management of Kazakhstan companies and joint ventures with foreign participation in various areas of business in the Republic of Kazakhstan.

Since **2007** Mr. Kan has been holding the position of the Executive Director of Caspian Offshore Construction LLP. Since 2010 he has been holding the position of the President of a ship owning company Circle Maritime Invest JSC.

Since **2004** Mr. Kan is a member of the Board of Directors of Central-Asian power-energy company JSC.

Since **2015**, he is the Chairman of the Board of Directors of Kazakh Institute of Oil & Gas JSC.

Since **2017** Mr. Kan is a member of the Board of Directors of Central-Asian Electric Power Corporation JSC.

Sergey Kan was awarded **Parasat** state order for significant contribution to the social, economic and cultural development of the country. He has a medal "For Contribution to the Energy sector "





to the Corporation's activities, and also at monitoring and reducing risks, maintaining sustainable improvement of the Corporation's financial performance and successful pursuing its stated goals.

Fundamental principles of the Corporate Governance Code:

- Justice
- Accountability
- Responsibility
- Transparency
- Environmental protection and social responsibility
- Effectiveness
- Control

In 2018, all the fundamental principles of the Corporate Governance Code were respected.



**REMUNERATION POLICY**

Remuneration for the executive body is determined by the decision of the Board of Directors of CAEPCO JSC.

Remuneration for General Director is determined based on the following requirements:

- Remuneration shall consist of fixed and variable parts;
- The variable part of remuneration depends on key performance indicators of General Director, his/her qualification level and personal contribution to the Corporation's performance results for a certain period with a view to motivating General Director to work as per the highest quality standards;
- Social benefits, guarantees and compensation payments shall be provided to General Director in accordance with the laws, internal regulations of the Corporation and the employment contract.

**CORPORATE GOVERNANCE CODE COMPLIANCE REPORT**

In 2018, corporate governance practices of the Corporation fully met the requirements of the Corporate Governance Code developed in accordance the Joint-Stock Companies Act of the Republic of Kazakhstan. The document is also based on the current international practices in the field of corporate governance and recommendations on application of corporate governance principles by Kazakhstan's joint stock companies.

The principles of the Corporate Governance Code are aimed at formulating and introducing into the Corporation's day-to-day operations of the norms and traditions of corporate behavior that meet international standards and contribute to creating a positive image of the Corporation in the eyes of its shareholders, customers and employees with a view to exercising the rights of shareholders to the maximum extent possible and improving their awareness as

**CONFLICT OF INTEREST**

Conflict of interest is regulated in the Code of Ethics (clause 5.6). This document provides for responsibilities of employees, abuse of official position, activities of employees inside and outside the company.

The principle of minimization of a conflict of interest is among the fundamental anti-fraud and corruption guidelines of the Fraud and Corruption Prevention Policy. Pursuant to this principle, the Corporation reduces a conflict of interest through effective distribution of powers and responsibilities by building a transparent organizational structure.

Activities of members of the Board of Directors are governed by the relevant Regulations. Avoidance of a conflict of interest between members of the Board of Directors is stated in the section "Rights and Responsibilities of Members of the Board of Directors"

**CORPORATE ETHICS**

The Corporation implements a Business Ethics Code approved by the Board of Directors in 2010.

The document combines international standards of regulating business relations in four directions:

- business and professional ethics;
- organizational ethics;
- corporate governance;

- social responsibility of the company.

Compliance with business ethics across the Group of companies is monitored by executive officers through the organization of activities in accordance with prescribed ethical principles and standards.

All employees of the Corporation adhere to standards and provisions of the Code.

**EXTERNAL AUDIT**

After change of management, the auditor rotated from Deloitte LLP to PWC Kazakhstan LLP. The auditing services agreement was signed with the company until 2021.





# RISK MANAGEMENT AND INTERNAL AUDIT

## INTERNAL CONTROL AND AUDIT

To improve business processes and enhance the effectiveness of decisions made, the Company has established internal control mechanisms. To ensure independence and objectivity of its activities, the Internal Audit Department (IAD) reports directly to the Board of Directors of the Corporation and is supervised by the Audit Committee, which monitors decisions and processes to ensure the reliability of financial reporting and to coordinate internal control and risk management systems.

The IAD operates in accordance with the International Standards on Auditing (ISA) developed by the Institute of Internal Auditors, as well as the current laws and regulations of the Republic of Kazakhstan and the Code of Ethics of internal auditors of CAEPCO JSC.

Internal auditors adhere to the following principles in the course of their activities: integrity, objectivity, confidentiality and professionalism.

The offices of internal audit in the Corporation's subsidiaries operate in accordance with the requirements set by the IAD as well as the audit methodology and practices adopted in the Corporation.

Currently, the Corporation has a functional internal control system, which provides reasonable assurance of effectiveness at all levels of control, including financial and operational control, compliance with laws and regulations.

In 2018, the IAD operated in accordance with the annual work plan approved by the Board of Directors: it conducted evaluation of effectiveness of the internal control system (ICS) in subsidiaries for the following business processes:

"Management of investment activity", "Customer service management", "Tax accounting", "Accounting of fixed and intangibles assets", "Personnel management", "Revenue accounting and receivables", "Procurement, contracts and payments to creditors". Also, the IAD monitored the implementation of its recommendations and conducted random checks to inspect fixed assets and inventories. The IAD submitted an annual report and the activity report for 10 months to the Board of Directors and the Audit Committee.

## CORPORATE RISK MANAGEMENT SYSTEM

The main goals of CAEPCO JSC in the field of risk management are to reduce the negative impact of events occurring in the course of activities of the Corporation, as well as to implement opportunities. To accomplish these goals, the Corporation has a corporate risk management system (RMS) aimed at identification, assessment and monitoring of all significant risks. Risk management is carried out at all levels: industrial enterprises, business units and at the level of the Group of companies.

### RISK GROUPS

Strategic risks	Financial risks	Legal risks	Operational risks
- Regulatory risks	- Financial statements	- Violation of law	- Technological risks
- Investment risks	- Interest risks	- Corruption and fraud risk	- Procurement and supplies
- Project risks	- Liquidity risk	- Property risk	- IT and information security
- Reputation risks	- Credit risks	- Collection risks	- Emergencies
- Market risks	- Price risks	- Regulatory risks	- Human resources risks
- Managerial risks	- Foreign exchange risks	- Environmental risks	- Environmental risks
- Credit risks	- Managerial risks	- Human resources risks	- Interaction with contractors
		- Tax risks	- Commercial risks
			- Professional risks
			- Fuel risks
			- Reputation risks
			- Social risks
			- Property risk
			- Managerial risks

Risks are identified, evaluated and monitored.

## ORGANIZATION OF RMS ACTIVITIES



### RISK IDENTIFICATION

Detection of risks and their inclusion in the Corporate Risk Register for further evaluation and management.

### RISK ANALYSIS AND ASSESSMENT

Determining the seriousness of risk impact on production and financial and economic performance of the Corporation

### RISK MANAGEMENT

Identification, evaluation and selection of the most effective method for achieving goals by maximizing the positive and minimizing the negative events that have an impact on the activities of the Corporation

### RISK MONITORING

Monitoring the Action Plan for risk management (regularity, timeliness and quality of implementation).

## INTERNAL CONTROL STANDARDS

The Corporation has established an internal control system (ICS) which includes a set of policies, processes, procedures, standards of conduct and actions combined into a single continuous process. The ICS is part of the administration process in the Group of companies implemented by the Board of Directors, all executive, supervisory bodies and employees. The ICS is aimed at ensuring the achievement of goals of the Group of companies and minimization of risks inherent in business activities.

### THE CORPORATION IDENTIFIES THREE LEVELS OF THE INTERNAL CONTROL SYSTEM:

Operational	Financial	Compliance control
Applies to the core business objectives of the organization, including productivity, profitability and preservation of resources.	Refers to the preparation of reliable financial statements to be published, including the interim, condensed financial statements, as well as any data derived from reports (for example, income data) which are publicly available.	Focuses on compliance with laws and regulations governing the operations of the organization.







Risk management activities in the Corporation are carried out by the Risk Management Department, which reports to the Board of Directors of the Corporation. The Department operates in accordance with an annual work plan approved by the Board of Directors.















Work performed in 2018	Work planned for 2019
Risk management training for key employees of business units and executives of the Group.	Risk management and internal control training for key employees of business units and executives of the Group.
Updating the Risk Register and Risk Map of CAEPCO JSC Group.	Updating the Risk Register and Risk Map of CAEPCO JSC and its subsidiaries.
<b>Analysis and testing of business processes:</b> "Payroll accounting"; "Control of distribution and metering of electricity consumption, energy monitoring"; "Control of distribution and metering of heat consumption, energy monitoring"; "Tax accounting".	<b>Analysis and testing of business processes:</b> "Investment activities"; "Warehouse stock management"; "Control of maintenance and repairs".
Updating the list of business processes exposed to the risk of corruption and fraud.	Updating the list of business processes exposed to the risk of corruption and fraud.
<b>As part of preparation for the introduction of ISO 9001:2015 standard the following activities were implemented:</b> Training in "ISO 9001:2015 Requirements" for heads of business units of CAEPCO JSC; Training on the topic "Internal Auditor of ISO 9001:2015 Quality Management System" for employees of risk management department in subsidiaries, Risk Management Department and Internal Audit Department of CAEPCO JSC; successful examination and certification; Development of internal regulations as per ISO 9001:2015 requirements; Updating the applicable internal regulations in line with ISO 9001:2015 requirements.	<b>Organization of work in line with the international quality standards (IQS):</b> Establishment of a work group to develop and introduce the IQS; Building a base of internal regulations of CAEPCO JSC; Updating a base of internal regulations in line with the specified requirements; Development and approval of the quality policy and objectives; Introduction of the IQS in business units of CAEPCO JSC; IQS internal audit; Preparation of CAEPCO JSC for certification.



### ANALYSIS OF SIGNIFICANT RISKS AFFECTING PERFORMANCE

Seventy-nine risks affecting the Corporation performance were identified in 2018 based on the new corporate Risk Register and the Risk Map updated in accordance with the approved Risk Management Policy.

Risk	Factors	Risk level	Change	Description of the risk change	Risk minimization measures
<b>STRATEGIC RISKS</b>					
<b>Introduction of the electrical capacity market and the balancing electricity market</b>	<ol style="list-style-type: none"> <li>Imperfection of laws in terms of the electrical capacity market and the balancing electricity market.</li> <li>Lack of a full ASCAE system recording the actual consumption rate.</li> <li>Lack of statistics on consumer load profiles.</li> <li>Incomplete use of the existing software functionalities to work on the electrical capacity market and the balancing electricity market</li> </ol>			Taking into account the introduction of the electrical capacity market and the balancing electricity market from 2019 and existing unresolved issues, the risk in 2018 migrated from the major to the critical risk zone.	<ol style="list-style-type: none"> <li>Cooperation with the Ministry of Energy and the Committee for Regulation of Natural Monopolies, Protection of Competition and Consumer Rights of the Ministry of National Economy of the Republic of Kazakhstan on making proposals and comments to regulations governing the operation of the electrical capacity market and the balancing electricity market.</li> <li>Development of ASCAE system of wholesale consumers.</li> <li>Introduction of the software to work on the electrical capacity market and the balancing electricity market.</li> <li>Working with consumers in terms of providing daily schedules.</li> <li>Monitoring of actual consumption via ASCAE system.</li> </ol>
<b>Reducing the rate by a competent authority</b>	<ol style="list-style-type: none"> <li>Imperfection of legislation.</li> <li>Late communication of changes in legislation to responsible executives of the Corporation.</li> </ol>			In 2018, pursuant to the order of the authorized body, a number of subsidiaries reduced rates for heat and electricity transmission and distribution, as a result of which the risk level changed from major to critical.	<ol style="list-style-type: none"> <li>Promoting and defending the interests of the Group through associations and communities (Kazakhstan Electricity Association, Atameken National Chamber of Entrepreneurs of Kazakhstan, etc.).</li> <li>Participation in the development of industry-specific laws and regulations by submitting proposals and interaction with working committees.</li> </ol>
<b>OPERATIONAL RISKS</b>					
<b>Withdrawal of qualified/key personnel</b>	<ol style="list-style-type: none"> <li>Low average salary.</li> <li>Relocation to other countries.</li> <li>Low level of vocational training of qualified staff for the energy industry, etc.</li> </ol>			The overall turnover rate across the Holding is stable. Analysis of personnel management data indicates the growth and high turnover rates in the subsidiary - Astanaenergosbyt LLP.	<ol style="list-style-type: none"> <li>Increasing the salary rate through the adoption of the Unified Remuneration System (URS), as well as the indexation of wages in the Corporation.</li> <li>Creating conditions for advanced training in the enterprise disciplines.</li> <li>Implementation of programs to attract and adapt young professionals.</li> </ol>

Risk	Factors	Risk level	Change	Description of the risk change	Risk minimization measures
<b>Failure of the Data Processing Center (DPC, Pavlodar)</b>	<ol style="list-style-type: none"> <li>Power supply interruption.</li> <li>Communication channel failure.</li> <li>Disturbance of containment area microclimate.</li> <li>Server/network equipment failure.</li> <li>Man-made disasters.</li> <li>Socio-political factors.</li> </ol>			The risk was identified in 2018.	<ol style="list-style-type: none"> <li>Testing of the IT infrastructure restoration;</li> <li>Development of an emergency IT infrastructure restoration plan for corporate information systems;</li> <li>Development of procedures in subsidiaries for emergency operation and interaction in the manual mode in case of failure of the key IT systems.</li> </ol>
<b>FINANCIAL RISKS</b>					
<b>Growth of receivables</b>	<ol style="list-style-type: none"> <li>Low level of payment discipline among customers.</li> <li>Decline in basic macroeconomic indicators.</li> </ol>			In 2018, a decrease in overdue receivables was observed across CAEPCO JSC, except Astanaenergosbyt LLP with a slight growth in overdue receivables.	<ol style="list-style-type: none"> <li>Claim-related work is carried out.</li> <li>Schedules for debt repayment in installments are prepared.</li> <li>Information on employees' overdue debt for utilities, etc. is sent to enterprises as and when needed.</li> </ol>
<b>Change in the national currency/ foreign currency exchange rate</b>	<ol style="list-style-type: none"> <li>Changes on the currency exchange, decrease or increase in the national currency rate.</li> <li>Conclusion of contracts to supply inventories and services in foreign currency.</li> <li>Conclusion of loan agreements in foreign currency.</li> </ol>			At the end of 2018, KZT/USD exchange rate decreased by 13% and during the year showed volatility. The risk migrated to the critical zone.	<ol style="list-style-type: none"> <li>Conclusion of contracts in national currency.</li> <li>Monitoring the trends in exchange rates.</li> <li>Calculation and justification of the currency position.</li> </ol>
	risk impact decreased			risk probability remained unchanged	
	risk impact increased			risk probability increased	
	risk impact remained unchanged			risk probability decreased	
	medium risk			high risk	



# SUSTAINABLE DEVELOPMENT

Realizing its social responsibility to consumers, the government, investors, employees, business partners and society, CAEPCO JSC adheres to the principles of sustainable development in its activities.

## STAKEHOLDER ENGAGEMENT

Stakeholder engagement is an important element of the sustainable development system. Thanks to a well-established system of engagement, the Corporation is aware of opinions, interests and wishes of its stakeholders. Keeping in mind high public significance of its operations, CAEPCO JSC implements a number of activities to expand and improve effective stakeholder engagement.

Since 2013, the Corporation has been regularly publishing Stakeholder Engagement Plan and Report with detailed quantitative and qualitative indicators, activities and sources of information dissemination. These documents are publicly available on the corporate website.

### LIST OF STAKEHOLDERS

The Corporation has identified stakeholders in relation to its decisions and activities to monitor the degree of its influence and to review response options. Stakeholders are identified and selected based on the assessment of the impact on current operations and strategic development, as well as the current stakeholder engagement practices of the Corporation.

#### THE CORPORATION COMMUNICATES WITH STAKEHOLDERS ON THE FOLLOWING SUBJECTS:

Social responsibility	Environmental protection	Occupational health and safety	Economic security
Employees	Non-governmental organizations (NGOs)	Employees	Shareholders
Government agencies and regulatory authorities	Government agencies and regulatory authorities	Suppliers, Contractors	Local communities
Local communities	Local communities	Trade union	
Educational institutions			

#### STAKEHOLDER ENGAGEMENT PROCESS

KEY STAKEHOLDERS	EXPECTATIONS / INTERESTS	ENGAGEMENT MECHANISM
Employees	<ul style="list-style-type: none"> <li>Obtaining information on the Company's development prospects</li> <li>Accomplishment of strategic objectives</li> </ul>	By means of corporate newsletters and websites. There are e-mail boxes and phone hotline for employees' appeals. Meetings are held between the company management and employees. Labor disputes are resolved by grievance committees with the participation of representatives of both the employer and the employee.
Local communities, Consumers	<ul style="list-style-type: none"> <li>Ensuring reliable and uninterrupted electricity and heat supply</li> <li>Consumer feedback</li> </ul>	The Corporation has systemized its communications with customers and arranged feedback via web-sites and e-mail. Public hearings, round-table discussions and other events are held.

#### STAKEHOLDER ENGAGEMENT PROCESS

KEY STAKEHOLDERS	EXPECTATIONS / INTERESTS	ENGAGEMENT MECHANISM
Government agencies and regulatory authorities	<ul style="list-style-type: none"> <li>Ensuring reliable and uninterrupted supply</li> <li>Openness and variability in working with consumers</li> <li>Infrastructure development</li> <li>Tax deductions</li> <li>Creation of jobs in the regions where the Corporation operates</li> <li>Implementation of social programs</li> </ul>	Requests from the governmental and regulatory authorities are processed. Employees of the Corporation participate in specialized and general meetings. Visits of official delegations are arranged. Social projects are implemented by agreement/ jointly with local authorities.
Suppliers, Contractors	<ul style="list-style-type: none"> <li>Creating a transparent competitive environment</li> <li>Use of the market pricing mechanism</li> </ul>	Tenders, meetings with contractors and customers are arranged and held. Corporate web-site has a special feedback section.
Educational institutions	<ul style="list-style-type: none"> <li>Promoting the development of industry-specific science and education</li> <li>Establishment of a talent pool and succession planning</li> <li>Use of innovation technology to reduce environmental impact</li> </ul>	Meetings with representatives of higher education institutions are held in the regions of operations. Employees of the Corporation participate in the activities of examination boards and certification commissions, as well as in accreditation of educational programs. PROFENERGY program is implemented and the contest of scientific ideas is held on a year basis.
Mass media (MM)	<ul style="list-style-type: none"> <li>Transparency of business processes</li> <li>Providing free access to information on the Corporation</li> </ul>	Every year, enterprises of the Corporation conduct press tours, media briefings, press conferences, issue press releases, and promptly respond to information requests.
Non-governmental organizations (NGOs)	<ul style="list-style-type: none"> <li>Obtaining information on the Corporation's development prospects</li> <li>Joint work</li> <li>Reducing a negative environmental impact</li> </ul>	Representatives of NGOs are regularly invited to participate in press tours and public hearings held during the year. Employees of the Corporation participate in public meetings with representatives of small and medium business. Meetings are held with leaders who support socially vulnerable people as well as with representatives of the consumer protection society.
Trade union	<ul style="list-style-type: none"> <li>Sustainable salary</li> <li>Creating favorable working conditions</li> <li>Providing opportunities for professional and personal development</li> <li>Social guarantees</li> </ul>	Interaction with trade unions is carried out through arrangement of meetings and handling requests in the course of activities. A housing fund is formed, recreational and various events are arranged for employees, professional skills contests are held.
Shareholders	<ul style="list-style-type: none"> <li>Transparency of business processes</li> <li>Increase in shareholder value</li> <li>High level of financial sustainability</li> </ul>	Interaction during meetings of shareholders. Every year, the Corporation and its subsidiaries maintain the relevance of credit ratings assigned by leading international rating agencies. To ensure mandatory disclosure of information, press releases are issued and presentations are held for investors and professional communities.



**SOCIAL PROJECTS**

CAEPCO JSC Group of companies is a socially responsible company, which pays attention to the care of employees and contributes to the improvement of the living conditions in the region as a whole.

**ENERGETIC CENTER IN PAVLODAR IS GROWING TENNIS STARS**



Energetic tennis center was built in 2011 at the expense of CAEPCO JSC's shareholder - CAPEC JSC with the support of PAVLODARENERGO JSC.

The center consists of halls with four tennis courts provided with modern equipment that meets the requirements of the International Tennis Federation (ITF). Specialists of Energetic center pay great attention to young athletes.

On August 4, 2011, the President of the Republic of Kazakhstan, Nursultan Nazarbayev, during his working trip to Pavlodar region visited Energetic tennis center:

— I like your tennis court very much. In my Message I noted the need of motivating at least 30 percent of our population to go in for sports and I see the results of implementing my instruction - new sports complexes are being built, children are fond of physical culture.



**COZY ALAKAY KINDERGARTEN IN PETROPAVLOVSK**

Alakay kindergarten was opened in Petropavlovsk on December 22, 2015. The social facility was built within the framework of public-private partnership between the administration of North Kazakhstan region and CAEPCO JSC's shareholder - CAPEC JSC with the support of SEVKAZENERGO JSC.

The kindergarten with a total area of almost 5 thousand square meters accommodates cozy rooms equipped with everything needed for lessons, games and rest. Alakay kindergarten is designed for 320 children of Petropavlovsk aged from 3 to 6 years.

At the time of opening, the kindergarten was fully staffed with 43 professional pedagogues to ensure upbringing and education of children.

**DORMITORY IN PETROPAVLOVSK**

On December 22, 2016, as part of celebrating the 55th anniversary of Petropavlovsk CHP-2 and the Power Engineers' Day, the company held an official opening of a 90-apartment small family dormitory for its employees and citizens of Petropavlovsk. This project was implemented thanks to the public-private partnership of SEVKAZENERGO JSC and administration of North Kazakhstan region.

90 small apartments, including 80 one-room and 10 two-room, have a total area of more than 4 thousand square meters. Each apartment has a separate kitchen and bathroom.

Thanks to the project, SEVKAZENERGO JSC partially solved a pressing problem of providing company housing to employees who do not have their own housing.



During the opening ceremony, an emphasis was made that apartments will also be provided to 18 families on the waiting list.

**STUDENT HOUSE IN PAVLODAR**

In December 2017, the Student House was opened for Pavlodar Assembly College. The hostel was built at the expense of CAEPCO JSC with the support of its subsidiary - PAVLODARENERGO JSC in the framework of a memorandum on joint implementation of social projects signed with the administration of Pavlodar region.

The hostel for 200 students of Pavlodar Assembly College consists of furnished double and triple rooms with separate bathrooms.

The Student House has a gym and a dance hall, laundry facilities and kitchens with necessary appliances on each floor. The hostel is also equipped with an electronic pass system and video surveillance in corridors.

Students who study welding (electric and gas welders) and power supply (electricians of electric networks and electrical equipment) have a priority right for accommodation.

In 2018, the hostel was transferred in the account of Pavlodar Assembly College, a municipal state-owned enterprise of the Department of Education of Pavlodar Region administration.

**OUR CONTRIBUTION TO ERTIS OLYMPIC**

On December 12, 2018, a new 50-meter Ertis OLYMPIC swimming pool was opened in Usolsk district of Pavlodar city. PAVLODARENERGO JSC was among the companies involved in the implementation of the social project.



The company installed external utilities - electricity, water supply, sewage and heat supply systems. The total cost of the project amounted to KZT 814,839,000, including installation of a heating main with a total length of 1,603 m. The heating main is used to supply heat to the pool and to reserve the heat load, taking into account further development of the area.

The company allocated funds to install electricity supply networks, including outdoor lighting, and installation of water supply and sewage networks and renovation of the pump station No. 21.

The project was implemented in the framework of the memorandum on joint implementation of social projects signed in 2016 between the administration of Pavlodar region and CAEPCO JSC.

**SMART HOUSE FOR POWER ENGINEERS**

In 2017, the construction of a nine-floor apartment building for employees of PAVLODARENERGO JSC was commenced in Usolsk district of Pavlodar city. Commissioning of the building is expected in summer 2019.

The building with a total area of 9.5 thousand square meters consists of 60 apartments that will be provided to young employees under the age of 35 years. It is important

to note that the price of housing includes the cost of external utilities and communications, amenities, elevators and heating automation systems.

It will be the first «smart» house in Pavlodar. Temperatures in apartments will be controlled using special devices installed on radiators. The house has a climate system and a water-cooling machine.



# HUMAN RESOURCES AND SOCIAL POLICY

## HUMAN RESOURCES MANAGEMENT POLICY

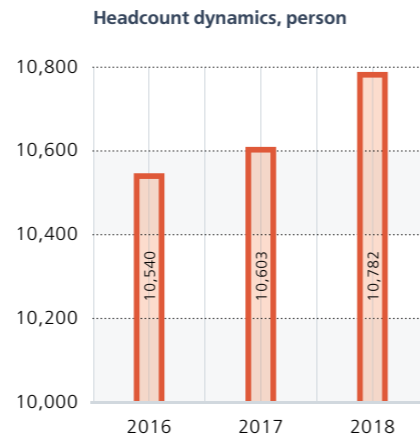
The human resources management policy of CAEPCO JSC is a comprehensive system of interaction with employees aimed at achieving strategic goals of the Corporation.

The goal of the human resources management policy of CAEPCO JSC is to build a company with an efficient corporate governance system providing opportunities for maximizing employee potential. The Corporation is strengthening its human resources management policy by hiring professional employees at various levels, retaining highly qualified staff, conducting continuous personnel professional training and development, providing opportunities for professional growth of proactive young specialists, creating a talent pool and succession planning.

## EMPLOYEE HEADCOUNT AND SKILL LEVEL

As of December 31, 2018, the Corporation headcount amounted to 10,782 persons.

A slight increase of 1.7 % compared to 2017 was caused by the planned introduction of new business units by subsidiaries of CAEPCO JSC and filling vacancies.



Employee category	Total		including:			
	persons	%	men persons	%	women persons	%
Headcount	10,782	100.0	6,697	62.1	4,085	37.9
Managers	1,543	14.3	1,175	76.1	368	23.9
White-collar workers	3,184	29.5	1,012	31.8	2,172	68.2
Blue-collar workers	6,055	56.2	4,510	74.5	1,545	25.5

## HEADCOUNT STRUCTURE OF CAEPCO JSC IN 2018

Company name	Headcount
CAEPCO JSC	96
PAVLODARENERGO JSC	5,108
SEVKAZENERGO JSC	2,561
AEDC JSC	2,404
Astanaenergosbyt LLP	613
<b>Total:</b>	<b>10,782</b>

## EMPLOYEE STRUCTURE BY CATEGORY AND SEX

Due to the nature of activities, the Corporation's employee structure is dominated by men with a share of 62.1 %. The production personnel are mostly blue-collar workers with a share of men amounting to 74.5 %.

## EMPLOYEE AGE STRUCTURE

The Corporation's employee age structure is characterized by a high proportion of employees at the most productive age - under 40 years old - they make up 52.2 % of the total headcount. The share of employees over 60 years remained unchanged

since 2017 and amounted to 5.3 %. Considering the above mentioned figures, the Company implements measures to promote mentoring and succession to ensure transfer of professional knowledge and skills, and to gradually reduce the average employee age for achieving an optimal ratio between young proactive employees and highly qualified mature workers. The average employee age across the Holding is 40 years.

## “ PROFENERGY – OUR CONTRIBUTION TO THE DEVELOPMENT

NATALYA KONSTANTINOVA,  
MANAGING DIRECTOR FOR HUMAN RESOURCES MANAGEMENT



### — What are the main objectives of the HR department of CAEPCO?

— Our priority objective is still to provide the subsidiaries of the Holding with competent employees and maintain the staff balance. On the one hand, we create conditions and attract young promising employees; on the other hand, we motivate qualified employees for further development and transfer of experience.

### — What measures are taken to create a stable and efficient staff?

— In 2015, with the support of the Board of Directors and the Management Board of the Holding, the PROFENERGY project covering

several categories was launched. First of all, the project involves students majoring in the energy disciplines; the second category includes graduates of higher and secondary special educational institutions, and the third category includes workers who receive industry-specific on-the-job training.

As part of the project, over three years, the Corporation arranged practical training for 1,364 students; over 60 students filled the vacant positions in the period of summer holidays; scientific project contests were arranged and personal scholarships were awarded to winners; 535 employees were paid study leave in the amount of an average monthly salary;

70 employees were granted loans to pay for the study; 93 people received bonuses for successful graduation.

I would like to note that the implementation of PROFENERGY project promotes technical specialties and professions in the republic and supports state programs for the development of vocational training.

### — In your opinion, what areas of work are the most significant?

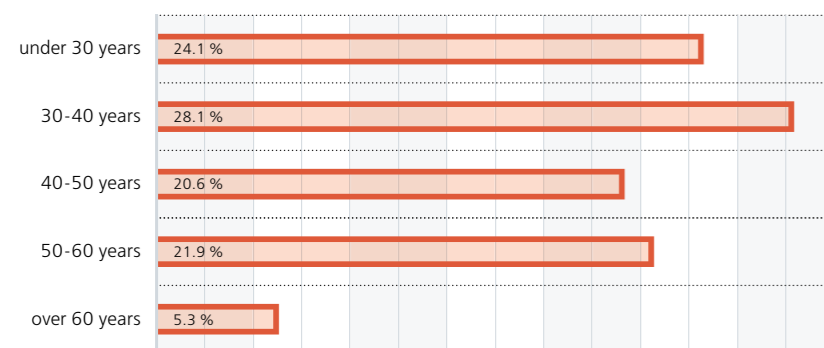
— Based on monitoring of internal and external factors that affect the personnel situation and taking into account the main satisfaction criteria, a decision was made to transfer subsidiaries of CAEPCO JSC to the Unified Remuneration System based

on the schedule of rates. Structural units of the HR department using their own forces and without involving third-party consultants evaluated the positions and professions by their importance and involvement in the production process, and established the gradation and remuneration levels. As a result of the project implementation, a mechanism was created to motivate employees and differentiate wage increase depending on the performance results. Also, certain conditions were created to enhance the employee's social security and loyalty, and, as a result, the Company's competitiveness in the labor market.

In addition, I would like to note the process unification and automation (this project involves 12 enterprises) as one of the most significant and successful projects in the field of HR management. As a result, we have automated the processes of staff administration, time keeping, including for shift staff, staffing structure and other processes. We have accomplished the goals to reduce labor costs of HR departments and minimized the risk of accounting errors. These efforts allowed us to improve the quality of work of human resources management departments and enhance the efficiency of personnel records and human resources management across the Holding.



Employee age structure



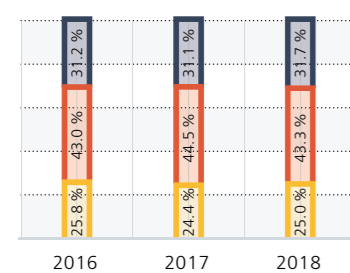
**EMPLOYEE EDUCATION STRUCTURE**

In 2018, compared to the previous year, the share of employees with a college degree slightly increased and the share of workers with technical/professional education decreased across the Corporation due to motivation of workers to receive higher education in extramural form of study.

In 2018, a total of 50 employees of the Corporation obtained a college degree by correspondence training, including 35 employees with a major in energy-related disciplines; 53 employees finished technical/vocational schools by correspondence training, including 48 employees who majored in professionally relevant disciplines.

In 2018, 197 employees continued studying at higher education institutions by correspondence training, including 145 workers who majored in professionally relevant disciplines; 108 employees were obtaining technical/vocational education by correspondence training, 91 of them - in professionally relevant disciplines.

Education structure dynamics



secondary education  
technical/vocational  
higher education

**EMPLOYEE TRAINING AND DEVELOPMENT**

Employee training and development system of the Corporation covers the following areas:

- compulsory professional training;
- development of leadership skills;
- development of professional competencies.

To improve the effectiveness of activities and create safe working conditions, the Corporation carries out training in the corporate format based on individual development plans.

In 2018, 8,391 persons (77.8 % of the total headcount) were trained, including 6,398 production workers (76.3 %) who received compulsory training. In 2018, 3,646 employees

Name	2016	2017	2018
<b>Number of employees who received training, retraining, or professional development, including:</b>	<b>7,953</b>	<b>8,215</b>	<b>8,391</b>
Safety precautions, fire safety guidelines and operating procedures (initial training, proficiency testing, certification/re-certification), courses for managers	5,786	6,022	6,398
ISO9001, ISO14001, OHSAS1800 quality management systems trainings (including environmental protection, internal audit and risk management issues)	52	157	131
Related occupations training	652	722	797
Civil defense and emergency training	32	7	17
Other (professional development, seminars, workshops, etc.)	1,431	1,307	1,048

(33,8 % of the total headcount) were trained in training centers of the Corporation. A total of 797 employees received training in related occupations in order to enhance the professional profile of the Corporation.

**STAFF TURNOVER**

In 2018, the turnover rate in the Corporation increased by 1.3 % compared to 2017. The main reasons for staff resigning include:

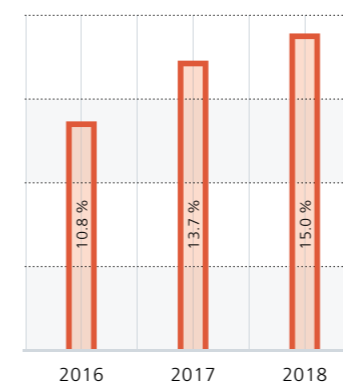
- relocation within Kazakhstan (city/rural settlements);
- relocation outside Kazakhstan (CIS countries, including Russia);
- lack of financial satisfaction.

To reduce the turnover rate, the following activities were further implemented in 2018:

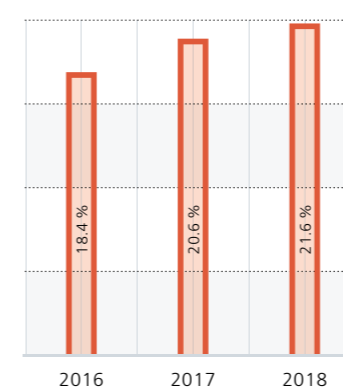
- Identifying payroll fund reserves and use these funds to raise wages;
- Promotion of mentoring and incentives for young specialists;
- Financial and non-financial incentives for skilled workers;
- Improving social guarantees in accordance with collective agreements.

In the dynamics for 2016-2018, an increase in the hiring rate is observed across the Corporation. At the same time, the number of employed persons exceeds the number of dismissed employees due to a planned headcount increase.

Turnover rate



Employment rate, %



**TALENT POOL**

In 2018, subsidiaries of CAEPCO JSC created a talent pool of 1,048 senior, middle and junior level managers to ensure the availability of the required personnel reserve to fill managerial positions at various levels.

Succession planning is based on individual programs of professional and managerial training of succession pool members, including training in the Corporation's own training centers, skills improvement, internships, mentoring, performance of management functions and temporary employee relocation. In 2018, 120 persons from the talent pool were appointed to management positions.

External talent pool is also created on an annual basis, including from among graduates.

As many as 1,173 young specialists work at the Corporation's enterprises, 304 of them were employed in 2018, including 97 persons for leading positions and

professions. These include 155 persons (51 %) with technical/vocational training and 149 persons (49 %) with a college degree.

**ATTRACTING YOUNG SPECIALISTS**

In 2018, as part of the PROFENERGY project, subsidiaries of CAEPCO JSC continued to implement the Program aimed at supporting young specialists and improving their professional level with a view to attracting graduates to key/critical positions in the enterprises and retaining key employees.

The following activities were carried out as part of the Program:

- 24 tours to production facilities;
- A contest of science projects where winners, two students from Ekibastuz and Petropavlovsk, received personal corporate scholarships from PAVLODARENERGO JSC and SEVKAZENERGO JSC;
- 31 students were employed during summer;
- 535 students were admitted for internship and pre-graduation practical training, of which 68 students received payment and signed employment contracts effective after graduation; 28 students were provided accommodation for the period of internship at AEDC JSC;
- employees of subsidiaries of CAEPCO JSC took part in examination and state attestation boards responsible for conducting graduation exams and assessment of graduation projects;
- 25 employees received bonuses for successful graduation;
- 142 employees were granted paid study leaves;
- 27 employees were granted interest-free loan for study payment.



**In February 2018, within the framework of the Kazakh-German project aimed at introducing a dual form of education in Kazakhstan, 51 employees of SEVKAZENERGO Group of enterprises completed advanced training courses for mentors on the topic "Training Pedagogy at Workplace".**

In the framework of social partnership with specialized educational institutions, the following activities were implemented in 2018 on the basis of AEDC enterprises:

- introduction of a dual education system for students of specialized educational institutions in the city of Nur-Sultan and Akmola region;
- tours for more than 175 students to the existing substations, the company's training area in the village of Kabanbay Batyr and the control center of Akmola Inter-District Electrical Networks;
- a master class on the following topics was held in the company's training center for students: «Providing first aid to electric shock victims», «Occupational health and safety»;



- familiarization courses and vocational guidance tours to the company's facilities were held for school children to promote energy professions;
- an energy club was created in the gymnasium school No. 22 of the city of Nur-Sultan.

**EMPLOYEE MOTIVATION AND REMUNERATION**

Motivation and remuneration in the Corporation are aimed at improving the efficiency and effectiveness of each employee. Employee's wage implies objectivity of labor remuneration based on employee's performance assessment, his/her contribution to the production process and the effectiveness of the production process management system.

In 2018, the average salary in subsidiaries increased by 11.4 % compared to the level of 2017.

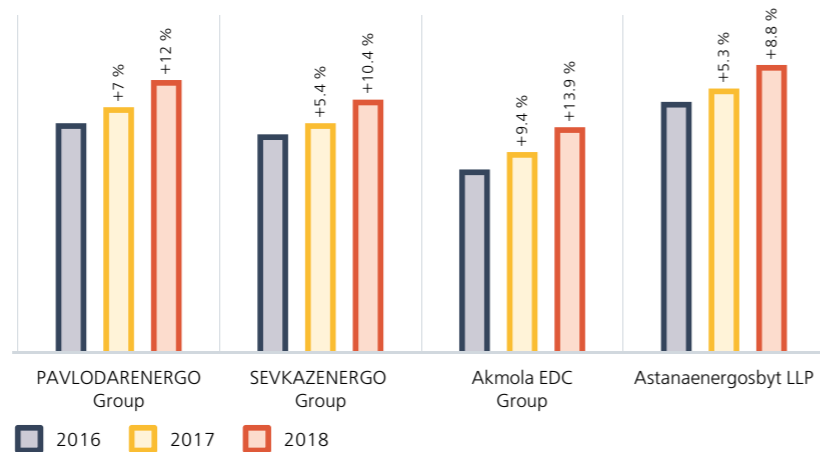
AEDC JSC optimized its headcount and allocated the released payroll fund to employees, due to which an average employee salary was increased by an average of 13.9 %.

**NON-FINANCIAL INCENTIVES**

To increase motivation for efficient performance, every year the Corporation grants awards, certificates of merit and honorary titles for achieving high production results; relevant information is published in corporate information sources.

In 2018, 144 employees received corporate awards for performance efficiency as well as on the occasion of anniversaries of subsidiaries, 24 employees and veterans received state awards, 5 employee received awards from the CIS Electric Power Council, 58 veterans and employees received awards from the Kazakhstan Energy Association, among them 8 employees were awarded the title of Distinguished Energy Worker and 6 employees - the title of Honoured Energy Worker.

Average pay increase rate in subsidiaries of CAEPCO JSC



**INTERACTION WITH TRADE UNIONS**

The enterprises of the Corporations have trade unions and conclude collective agreements that provide social benefits and guarantees for employees and their families.

In PAVLODARENERGO Group of companies, a Uniform Collective Agreement was signed for 2016-2019. A Uniform Collective Agreement of SEVKAZENERGO Group of enterprises was signed for 2018-2020.

Enterprises of Akmola EDC JSC reviewed proposals from labor collectives for introduction of changes to the Uniform Collective Agreement for a new period of 2019-2021.

In developing the terms of the collective agreement, enterprises of the Corporation adhere to the principles of economic feasibility, sufficiency, joint responsibility and transparency.

Within the framework of social partnership, the following activities are held annually with the participation of enterprises and trade unions:

- sports and recreational events;
- organization of leisure and cultural events;
- celebration of commemorative days and holidays;
- charity events.

**SOCIAL SUPPORT, GUARANTEES AND COMPENSATION**

The social policy of CAEPCO JSC is determined jointly with employees and their representatives - trade unions - and is implemented at the cost of subsidiaries of the Corporation.



Name	2016	2017	2018
Number of employees in trade unions, person	6,601	6,020	5,696
Percentage of total headcount, %	63	57	53

Goals	Social package
Personnel motivation for long-term employment	<ul style="list-style-type: none"> <li>Additional professional pension contributions at the rate of 5 %.</li> <li>Bonus payment for professional competitions.</li> <li>Rewards to celebrate anniversaries and holidays.</li> </ul>
Effective compensation and benefits policy	<ul style="list-style-type: none"> <li>Compensation of utilities costs, provision of benefits for dormitories and rental housing.</li> <li>Transportation of employees to/from work.</li> <li>Selling coal at cost to employees living in houses with furnace heating</li> <li>Subsidizing camp tours for children under 15 years old.</li> <li>New Year gifts to children</li> </ul>
Support of employee working efficiency and health	<ul style="list-style-type: none"> <li>Insurance against occupational accidents and diseases.</li> <li>Compulsory health insurance</li> <li>Reimbursement of sanatorium and preventive treatment expenses</li> </ul>
Social support of employees	<ul style="list-style-type: none"> <li>Financial support in case of pregnancy</li> <li>Financial assistance for funeral services</li> <li>Paid study leave</li> <li>Retirement allowance</li> <li>Veterans support program</li> </ul>
Sports and recreational activities	<ul style="list-style-type: none"> <li>Reimbursement of food expenses to participants of sports competitions</li> <li>Reimbursement of expenses for cultural events and group recreation</li> </ul>

**SOCIAL SUPPORT IN CASE OF MATERNITY OR PATERNITY**

Company name	Number of employees who took maternity/child care leave during the year			Number of employees who were on maternity/child care leave as of the end of the year	Number of employees who returned from maternity/child care leave during the year
	women	men	total		
PAVLODARENERGO Group of companies	111	3	114	204	46
SEVKAZENERGO Group of companies	54	0	54	86	26
Akmola EDC Group of companies	35	0	35	85	12
Astanaenergosbyt LLP	48	0	48	90	27
<b>Total:</b>	<b>248</b>	<b>3</b>	<b>251</b>	<b>465</b>	<b>111</b>

To perform social work with retired employees, collective agreements provide for the allocation of funds to the Councils of Veterans which operate at all enterprises of the Corporation. Every year, the Corporation honors World War II and labor veterans by providing material support to non-working retired employees in the form of food packages, cash rewards and coal supplies. Veterans are provided with home care, invited to concerts and celebratory dinners during World War II Victory Day celebrations.

Enterprises of AEDC JSC provide support to employees in the form of annual voluntary medical insurance which is the main social benefit offered to employees. Insurance programs allow the company's

employees to receive quality outpatient and inpatient medical care both in the region where the company operates and in Nur-Sultan, which is especially important for remote rural areas.

In September 2018, renewed canteens with modern specialized equipment and tableware were opened at five enterprises of PAVLODARENERGO JSC.

In May 2018, Energetic health care center and Energetic rest house were included in PAVLODARENERGO Group of enterprises. As a result, major changes occurred in medical institutions, including: introduction of an updated medical care fund for workers; free treatment for workers with uncomplicated cardiovascular

diseases. In the rest house located in Michurino village, Pavlodar region, the technical park was significantly upgraded, the pier was fully renovated and the beach was cleaned and improved. Energetic complex is becoming increasingly popular among Kazakhstan and Russian bikers, who have chosen it for the annual Irtysh Dawns motorcycle festival.

SEVKAZENERGO JSC took part in Paryz competition for socially responsible businesses which is held annually since 2008 and took the third place in the nomination "For Contribution to the Environment" among large business entities of Kazakhstan.



**SPORTS AND RECREATIONAL EVENTS**

To promote a healthy lifestyle, the following activities are carried out at the Corporation’s enterprises:

- Providing fitness club memberships;
- Organization of active leisure;
- Developing collective traditions;
- Organization of annual competitions and professional contests.

Every year, employees of CAEPCO subsidiaries take an actively participate in sports and recreational activities held both at the company as well as district, regional and international levels. The practice of holding sports events within the enterprises allows teams to take award-winning places in external competitions.

2,765 employees of PAVLODARENERGO Group of companies attend sports complexes: swimming-pool, football and volleyball sections, etc. The most popular sports competitions in Pavlodar region are volleyball, skiing race, autumn cross, football, kettlebells, arm wrestling, chess, fishing.

In 2018, competitions were held in 8 sports, in which 270 employees took part. 60 people participated in city sports days held in enterprises of



Pavlodar region, where they took the second team place.

In October 2018, the final volleyball competition of the 47th city sports day was held among production teams, where the team of PAVLODARENERGO JSC won the fourth place. Also, a futsal competition was held during the sports day, where the team of PAVLODARENERGO JSC won the fourth place among eight participating teams.

Every year, enterprises of SEVKAZENERGO JSC conduct competitions in 14 sports, hold sports days and travel forums. A total

of 276 employees took part in the competitions in 2018. According to the results of the year, the team of North Kazakhstan Electricity Distribution Company JSC became the leader for the sixth consecutive year. Sportsmen of the company became the best in sports such as volleyball and futsal, as well as in table tennis, darts, track and field athletics, chess, bowling and skating.

In 2018, the team of SEVKAZENERGO JSC composed of 35 employees took part in Kyzylzhar city sports day and won the third place among 18 teams of Petropavlovsk.



Traditionally, on the eve of the Independence Day of Kazakhstan, AEDC JSC held an annual sports day in four sports: volleyball, chess, table tennis and arm wrestling – attended by the teams of the company. More than 50 employees took part in the competitions. The team of Akmola Inter-District Electrical Networks became once again the winner in all sports. The second place was taken by the team of the company’s management staff, and the third place - by the team of Stepnogorsk Inter-District Electrical Networks.

All corporate and sports events are widely covered in the corporate information sources, and participants of events and winners are awarded memorable gifts.

**PLANS FOR 2019**

In 2019, the Corporation will continue implementing HR policies aimed at employee engagement and professional development. To

this end, measures will be taken to support young professionals and to implement projects for the introduction of key performance indicators and further process automation. This includes:

1. In 2019, the Corporation will continue implementing HR policies aimed at employee engagement and professional development. To this end, measures will be taken to support young professionals and to implement projects for the introduction of key performance indicators and further process automation. This includes:

- Support of young professionals and promotion of personnel professional development;
- Development of mentoring;
- Key personnel development program;
- Critical occupations program.

2. Development and introduction of key performance indicators (KPIs) to achieve strategic and operational goals of the Corporation.

3. Unification and improvement of a common list of social benefits and guarantees for employees of the Corporation.

4. Further implementation of programs to improve the living conditions of production workers.

5. Further development and implementation of automated processes in personnel record keeping, employee assessment and labor economics.





# INFORMATION POLICY

The information policy of CAEPCO JSC is a set of actions, measures and procedures that assist to manage dissemination of corporate information and create a consistent image of the Corporation among its target audience.

The main goals of information disclosure are as follows:

- timely provision of information on all substantive matters pertaining to the Corporation in order to respect legitimate rights of shareholders, investors and other stakeholders, providing them with appropriate information to make informed decisions or take any other action that could affect the financial and business activities of the Corporation, as well as other information promoting better understanding of the Corporation's activities.
- providing publicly available information about the Corporation to all stakeholders;
- improving openness and trust between the Company and its shareholders, potential investors, market participants, government agencies and other stakeholders;
- improving corporate governance in CAEPCO JSC;
- creating a positive corporate image.

In 2018, CAEPCO Group of companies regularly provided information on its activities to the above stakeholders by updating web-sites of the Corporation and its subsidiaries, providing information to mass media, responding to requests, and by arranging public hearings, press tours, round tables and other events. During the year, a total of 58 events were conducted involving mass media.

In 2018, as much as 7,316 materials on activities of CAEPCO JSC Group of companies were published in mass media (including 1,342 for CAEPCO JSC, 1,971 - PAVLODARENERGO JSC, 1,874 - SEVKAZENERGO JSC, 507 - Akmola EDC, 1,622 - Astanaenergobyt LLP).

During the year, awareness-raising work was carried out among stakeholders. Anti-crisis PR measures and preventive measures were also taken.

During the reporting year, PR services of the Holding released 69 corporate publications.

## HEAT FOR EVERYBODY!

The "Heat for Everybody" collected book containing recommendations and technical specifications in preparation for the heating season became one of the major projects implemented in 2018. The publication is addressed to condominium employees, as well



as to owners of apartments and private houses. The circulation of the book is 5 thousand copies. Electronic version prepared by PR department of PAVLODARENERGO JSC and CAEPCO JSC together with heat service specialists is posted on the PAVLODARENERGO and CAEPCO websites. Thanks to the dissemination of information, the number of questions from condominium employees has decreased and the statistics of housing preparation for the heating season has improved. The practice of preparing such collected books will be applied in other subsidiaries.



## PUBLIC HEARINGS

In 2018, subsidiaries of the Holding held public hearings on activities over the past year, at which issues of environmental protection, power generation, transmission and distribution were addressed. Public hearings were attended by consumers, representatives of public associations, the media and government agencies.

### PAVLODARENERGO JSC

PAVLODARENERGO JSC held two public hearings on environmental projects:

- Increase in the 1st stage of the ash dump site at CHP-3 (February 28, 2018);
- Industrial development of clay Beta rocks (April 28, 2018).



### AEDC JSC

AEDC JSC held public hearings involving consumers and other stakeholders to address the annual report on providing the regulated service for electricity transmission and distribution.

## ANTI-CORRUPTION

The Corporation is constantly working to increase the transparency of its activities. The Anti-Corruption and Fraud Policy of the Corporation is an important regulation in this area.

The main principles of the Policy include maintaining a high level of corporate governance, zero tolerance to corruption and fraud, proper risk assessment, minimizing conflicts of interest through effective distribution of powers and responsibilities and creation of a transparent organizational structure.

The key elements in strengthening this area are the development and implementation of an effective anti-corruption and fraud strategy, as well as prompt responding to related events. The Corporation is building an appropriate culture of behavior and negative attitudes towards all corrupt and fraud practices, and is striving to minimize the risk of employee involvement in such activities.

In 2018, no cases of corruption and fraud were reported.



### SEVKAZENERGO JSC

Four public hearings were held at which the following reports were reviewed:

- Activity report of Petropavlovsk CHP-2 for 2017 (April 5, 2018);
- Activity report of North-Kazakhstan EDC JSC for 2017 (April 6, 2018);
- Activity report of Petropavlovsk Heat Networks LLP for 2017 (April 7, 2018);
- Activity report of Sevkazenergobyt LLP for 2017 (April 8, 2018).

### ASTANAENERGOSBYT LLP

Astanaenergobyt LLP held public hearings regarding the heat supply services (November 9, 2018). The event was arranged in pursuance of paragraph 5 of the National Action Plan for the implementation of the Head of State's Address to the people of Kazakhstan dated October 5, 2018 "Growth in Prosperity of Kazakhstan Citizens: Increase in Income and Quality of Living Conditions" and the instructions of the Committee on Regulation of Natural Monopolies and Protection of Competition and Consumer Rights of the Ministry of National Economy of the Republic of Kazakhstan.



# ENVIRONMENTAL POLICY

## ENVIRONMENTAL IMPACT MANAGEMENT

An important goal of the Corporation's investment activities is to reduce a negative environmental impact of energy production.

In 2009-2018, the Corporation reduced ash emissions by 70 %. At the end of 2008, before start of the investment program, the concentrations of ash, nitrogen and sulphur oxides released by enterprises of CAEPCO JSC into the atmosphere were 1,094 and 1,425 mg/Nm<sup>3</sup>, respectively. At the end of 2018, these figures were 286 and 1,386 mg/Nm<sup>3</sup>, respectively.

In 2009-2014, all boilers at the plants of PAVLODARENERGO JSC and SEVKAZENERGO JSC were equipped with second-generation titanium emulsifiers, which allowed the enterprises to increase the degree of flue gas purification and reduce environmental charges.

To ensure the continuity of the technological cycle and storage of ash waste for a period of up to 25 years, work is carried out for the construction of ash dump sites using the innovation material to protect soil against contamination.

## ENVIRONMENTAL PROTECTION MEASURES

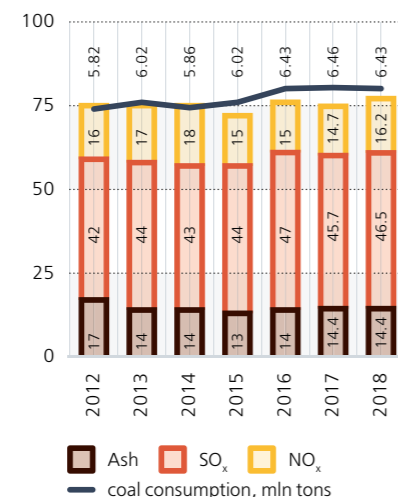
To enhance the efficiency of environmental protection activities, CAEPCO Group of companies is planning and implementing environmental protection measures aimed at reducing the environmental impact of its activities and improving the environmental efficiency and safety at its enterprises. In 2018, the total cost of implementing such activities amounted to KZT 5,188.625 mln.

## ATMOSPHERIC AIR PROTECTION

In 2018, CAEPCO Group of companies produced 7,025.1 mln kWh of electricity and 6,874.2 thous. Gcal of heat. 6,432.9 thous. tons of Ekibastuz coal and 7.7 thous. tons of mazut were consumed for energy production. The Corporation uses non-renewable sources of raw materials.

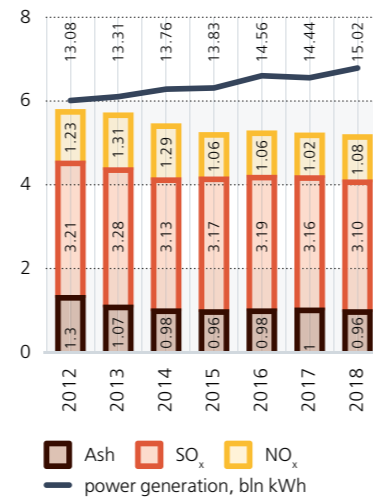
Replacement of obsolete generating equipment with low energy and environmental efficiency with modern facilities that meet current environmental protection requirements is the most important factor in reducing emissions by the Corporation.

Gross harmful emissions into the atmosphere in 2012-2018, thous. tons



During the period from late 2008 to 2018, harmful emissions into the atmosphere by enterprises of CAEPCO JSC decreased by 24.3 % (from 108.5 tons to 82.1 tons, including other emissions).

Specific harmful emissions into the atmosphere in 2012-2018, mg/MWh



## GREENHOUSE GAS (CO<sub>2</sub>) EMISSIONS

The Corporation takes measures to monitor greenhouse gas emissions and consumption of ozone-depleting substances. To monitor greenhouse gas emissions, the Corporation uses a calculation method in accordance with regulations, which provides accounting of emissions from normal (regular) production operations, special processes (commissioning operations, process shutdown, repair and maintenance) and emergencies. Reconstruction of heat networks in Pavlodar, Ekibastuz and Petropavlovsk, during 2016-2018 is expected to boost energy efficiency, reduce losses and improve environmental performance standards: reduction of CO<sub>2</sub> emissions by decreasing the coal consumption due to reduced transmission losses in heat networks.

The Corporation implements an additional tool to reduce greenhouse gas emissions - a program focused on energy savings and overall fuel efficiency, as new generating units are making an increasing share of generated energy, as well as introduction of the ISO 50001 energy management system (energy

saving measures) at enterprises, the purpose of which is both to increase energy efficiency of production processes and to reduce greenhouse gas emissions. Thanks to this program, in 2018 greenhouse gas (CO<sub>2</sub>) emissions decreased by 532.809 thous. tons.

Gross CO<sub>2</sub> emissions from fuel combustion in 2018 compared to 2017 remained unchanged.

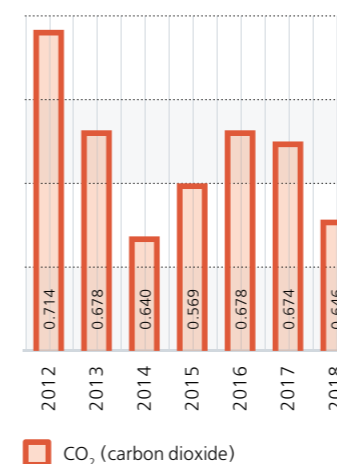
The most significant measures implemented in 2018 under the Energy Saving Program to reduce greenhouse gas emissions include the following:

- renovation of the heat generation scheme at Petropavlovsk CHP-2 of SEVKAZENERGO JSC;
- reconstruction of 7AT auto-transformer of SEVKAZENERGO JSC;
- repair of boiler air heaters at plants No. 1, 3, 5 at CHP-3 of PAVLODARENERGO JSC;
- replacement of air-fuel mixture burner pipes in boilers at plants No. 1, 3, 5 at CHP-3 of PAVLODARENERGO JSC;
- replacement of incandescent lamps with energy-saving ones at CHP-3, Ekibastuz CHP of PAVLODARENERGO JSC.

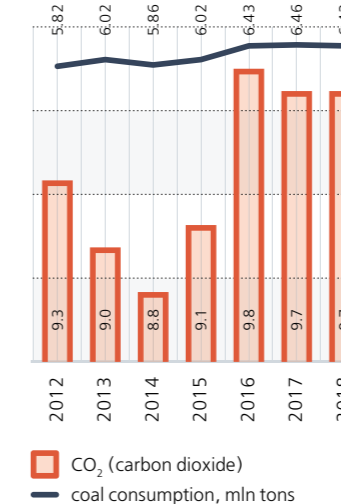
In 2018, Pavlodar Regional Department of Ecology conducted an unscheduled inspection within PAVLODARENERGO JSC to verify compliance with environmental standards when disposing of production and consumption wastes, which did not reveal any violations of environmental regulations and other regulatory requirements in the field of waste management.

The Department of Ecology for North-Kazakhstan region conducted one scheduled and two unscheduled inspections across SEVKAZENERGO JSC. Following the inspection results, administrative fines and damages amounted to KZT 2,324.554 thous.

Per-unit specific CO<sub>2</sub> emissions in 2012-2018, ton/MWh



Gross CO<sub>2</sub> emissions in 2012-2018, mln tons



Specific greenhouse gas emission rates decreased by 4.2 %.





**WATER MANAGEMENT AND WATER RESOURCES CONSERVATION**

Use of water resources is an essential element of the production processes at enterprises and an important function in the equipment cooling process. Generating facilities of CAEPCO Group of companies are equipped with closed-circuit service water systems with cooling ponds (Petrodavlovsk) or cooling towers (Pavlodar).

Enterprises of CAEPCO Group of companies have drinking water supply systems, as well as storm and household sewer systems. Water supply for domestic, drinking and fire-fighting needs, as well as sewerage, is carried out in a centralized manner via municipal water supply and sewage networks on a contractual basis.

The whole amount of water used by CAEPCO JSC is fresh water. The Corporation does not use sensitive water sources.

In 2018, the Corporation consumed a total of 905,512.9 thous. m<sup>3</sup>, mostly via the closed-circuit water systems. In the reporting period, water discharge amounted to 477.036 thous. m<sup>3</sup>.

In 2018, the most important environmental activities related to water use and water discharge include the following:

- modernization of industrial closed-circuit water systems, recycled water systems, and the system for prevention of contamination and depletion of water resources, namely: cleaning of tanks, grids of oil tanks No. 1-7; cleaning and repair of filters of oil-cleaning units at turbo generators No. 2,3,6,7; cleaning of oil coolers 5D, 2G, 4V, 2B, 5E, 3A, 6B; maintenance of oil cleaning units at turbo generators No. 1-7 of SEVKAZENERGO JSC;
- repairs of rotary screens No. 2, 3, 4 at the central pumping station; routine repairs of borehole pumps No. 1, 2 and drainage pumps No. 1, 2, 3 of the on-shore pumping station, pumps No. 2, 4 of the central pumping station; maintenance of the feed pump No. 2, circulating pumps No. 1,2,3,4,5; overhaul of the circulating pump No. 5, cleaning of the outlet channel of SEVKAZENERGO JSC;
- inspection of the underwater section of intake chambers No. 3 and 5 of the central pump station, the underwater section of the intake hopper of the purge pipeline at Big White Lake, and the purge valve well DN 600 mm at the on-shore pumping station of SEVKAZENERGO JSC;
- monitoring of qualitative and quantitative water characteristics (water analysis was conducted in accordance with the approved schedule) at PAVLODARENERGO JSC;

- repair of pipelines, stop and control valves for service and drinking water at CHP-3 and CHP-2 of PAVLODARENERGO JSC;
- replacement and repair of stop valves on service water pipelines, fire-fighting pipes and heating networks at Ekibastuz CHP of PAVLODARENERGO JSC.

**EFFICIENT HANDLING AND DISPOSAL OF PRODUCTION WASTE**

Coal combustion residuals representing 99 % of the total amount of wastes are stored at specially equipped hydraulic engineering facilities – coal ash dump sites. Compliance with the environmental regulations of the Republic of Kazakhstan in creating new ash dump sites allows preventing environment contamination by ash production waste and ensuring stable CHP operation.

It should be noted that new ash dump sites were built using the Canadian polysynthetic geomembrane, which is a state-of-the-art waste containment technology. It is a reliable and durable landfill liner ensuring protection of soil and ground water against contamination with chemicals contained in clarified water of the hydraulic ash removal system.

**TOTAL WATER CONSUMPTION BY SOURCE, THOUS. M<sup>3</sup>**

Indicator	2016	2017	2018
Total water used, including:	543,598.7	810,167.8	905,512.9
from surface water bodies	13,463.0	157,469.7	153,828.5
from third-party suppliers	24,466.4	23,791.289	53,067.4
from closed-circuit water systems	505,669.3	628,906.8	698,617.0

**WASTE WATER DISCHARGED, THOUS. M<sup>3</sup>**

Indicator	2016	2017	2018
Total waste water generated	499.3	489.7	477.036
Discharged to third parties	499.3	461.5	471.736
Discharged to surface water bodies	0	28.2	5.3

**ENVIRONMENTAL MANAGEMENT SYSTEM**

Availability of the environmental management system that is developed, well-functioning and certified for compliance with the ISO 14001 standard is the most important indicator of a systematic efficient work in the field of environmental protection, promoting the Corporation's competitive capacity, increasing the market value of shares and creating a positive image in relations with external stakeholders.

During the reporting period TÜV Rheinland Kazakhstan conducted supervisory and certification audits of CAEPCO subsidiaries to verify compliance with the international standards ISO 14001 (Environmental Management System), ISO 9001 (Quality Management System), OHSAS 18001 (Occupational Safety and Health Management System),



ISO/CD 50001 (Energy Management System). As a result, certificates of integrated management system (IMS) were granted and the Corporation's efficiency, effectiveness and focus on improvement were confirmed.

In 2018, AEDC JSC was successfully certified to verify compliance with ISO 9001, 14001, 18001.

**PLANS FOR 2019**

As part of the Environmental Policy, the Corporation intends to further improve environmental efficiency and safety of its enterprises and minimize a negative environmental impact of their operations. To this end, the Corporation intends to implement environmental protection plans and energy saving programs, further upgrade obsolete equipment and comply with environmental regulations.

**TOTAL WEIGHT OF GENERATED WASTE, THOUS. TONS**

Indicator	2016	2017	2018
Coal combustion residuals	2,600	2,607.8	2,608.1
Other types of waste	8.2	11.3	7.5

**WASTE BY HAZARD LEVEL, THOUS. TONS**

Indicator	2016	2017	2018
Waste generated	2,607.6	2,619.1	2,615.6
Green list	2,607.2	2,618.7	2,615.2
Amber list	0.45	0.38	0.45

**WASTES BY HANDLING METHOD, THOUS. TONS**

Indicator	2016	2017	2018
Waste generated	2,607.6	2,619.1	2,615.6
including coal combustion residuals	2,600	2,607.8	2,608.1
Waste used at the enterprise	13.1	5.02	0.424
Waste decontaminated	0	0.04	0.04
Waste handed over to third parties*	7.1	6.27	7.148
Waste disposed at enterprise's own sites	2,600	2,607.8	2,607.8
including coal combustion residuals	2,600	2,607.8	2,607.8

\*Note: In 2018, a total of 297.87 tons of coal combustion residuals from the ash dump site of SEVKAZENERGO JSC were sold to FlyAsh LLP under a contract.



# OCCUPATIONAL HEALTH AND SAFETY



## SAFETY FIRST

The main strategic goal of CAEPCO Group of companies in the field of occupational health and safety (OHS) is to reduce the total number of accidents through the implementation of preventive measures and introduction of best OHS practices.

The Corporation has implemented the Environmental and Social Action Plan (ESAP) in accordance with the policy of the European Bank for Reconstruction and Development. In the framework of the ESAP, CAEPCO JSC published a publicly available report describing projects to improve occupational health and safety at its enterprises.

According to the OHS Action Plan for 2018-2019, CAEPCO Group of companies implemented a number of activities: In the reporting year, the OHS standard "Insulation of energy sources" was approved and put into effect at Petropavlovsk CHP-2 of SEVKAZENERGO JSC. All subsidiaries approved and put into effect the Instruction for the procedure and control of the use of mobile video recorders to improve labor discipline and responsibility of the operational personnel involved in operational switching, preparation of workplaces, installation/removal of grounding at workplaces, etc.

The events dedicated to the World Labor Protection Day:

- an expanded OSH meeting chaired by the First Deputy General Director of the Corporation;
- Month "Safe production";
- Competition of children's creativity on the topic "Labor protection through the eyes of the child";
- Family day of OSH;
- a corporate contest of young professionals on the topic "Safety first".

Enterprises of the Holding continue implementing the practice of peer OHS review aimed at preventing injuries, accidents and incidents



during the operation of power and process equipment. In the reporting year, two peer reviews were conducted at enterprises of PAVLODARENERGO JSC and SEVKAZENERGO JSC.

It is important to note that all combined heat and power plants of CAEPCO JSC are equipped with automatic external defibrillators designed to provide timely and effective first aid to injured persons in case of a sudden cardiac arrest before the ambulance crew arrives.

During the year, in furtherance of the OHS standard "Safety requirements for vehicles/pedestrians interaction at production sites and facilities", pedestrians and transport traffic schemes were developed in all business units of subsidiaries.

The transition from mounting belts to fall arrest harness is in progress.



**In 2018, the number of occupational injuries across the Group of companies decreased by 30 % and 50 % compared to 2017 and 2016, respectively. There were no occupational deaths in 2017 and 2018.**



## OCCUPATIONAL HEALTH AND SAFETY COUNCILS

Each subsidiary of CAEPCO JSC has its own occupational health and safety council, which consist of representatives of the employer and the trade union, including technical occupational health and safety inspectors. Councils are headed by chairpersons who are also employees of the enterprise.

Occupational health and safety councils perform the following functions:

- examine the causes of occupational injuries and diseases, analyze the effectiveness of occupational safety measures, review information and analytical materials about the actual state of occupational safety in the organization';
- analyze the results of employee workplace certification;
- submit proposals for the introduction of more advanced technologies and new equipment to ensure safe working conditions and eliminate heavy physical work;
- participate in the review of occupational safety budgets, compulsory social insurance against industrial accidents and occupational diseases; monitors expenditures of the organization spent on improving occupational safety practices.

## TECHNICAL OCCUPATIONAL HEALTH AND SAFETY INSPECTORS

Each subsidiary has technical occupational health and safety inspectors, who interact with heads of departments, the occupational health and safety service, operation inspectors, industrial safety



supervision inspectors, as well as with state labor inspectors, state supervision and control authorities. Technical occupational health and safety inspectors participate in the development and submission of proposals to the "Occupational Safety" section of the collective agreement, as well as to comprehensive programs and plans of priority measures to improve occupational safety practices developed by authorities; monitor compliance with occupational safety guidelines at workplaces; represent the interests of trade union members in government agencies and non-government organizations, courts of various instances when resolving labor disputes where the Occupational Safety section of the Labor Code applies.

Internal training of technical inspectors is scheduled for 2019.



## TYPES AND INCIDENCE OF OCCUPATIONAL INJURIES

In the reporting year, five accidents occurred at enterprises of the Corporation, three low-severity and two severe accidents.

Classification of accidents by type in 2018:

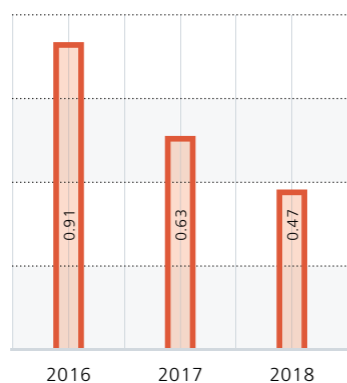
- impact of harmful and dangerous production factors and substances;
- electric shock;
- fall of an injured person.

Causes of the accidents include:

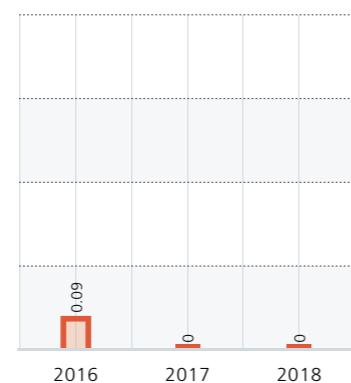
- unsatisfactory labor management;
- gross negligence of an injured person.

Tables and charts below show the level and rates of occupational injuries in the Corporation.

TIFR – Total Incident Frequency Rate per 1,000 employees



FIFR – Fatality Incident Frequency Rate per 1,000 employees



Total injury frequency rate (TIFR) per 1,000 employees was calculated using the following formula:

$$Fr = \frac{n \times 1,000}{N}$$

where:

n – total number of occupational injuries during the reporting period;

n1 – total number of occupational fatalities during the reporting period;

N – average headcount.

Fatality incident frequency rate (FIFR) per 1,000 employees was calculated using the following formula:

$$Fr1 = \frac{n1 \times 1,000}{N}$$

where:

Occupational injury rates

	2016	2017	2018
Headcount	10,540	10,549	10,782
Number of injury cases	10	7	5
Number of injured persons/ including women	7/3	7/0	5/2
Number of fatalities	1	0	0

The incident recording, reporting and notification system of the Corporation complies with the laws and regulations of the Republic of Kazakhstan and the International Labor Organization (ILO).

The activities of contracting organizations involved at production facilities of the Corporation are controlled as follows: experts of subsidiaries conduct inspections, briefings for personnel, and meetings with contractors.

In 2018, the Corporation spent KZT 780 mln on occupational health and safety activities and improvement of working conditions. All employees of the Corporation's enterprises are insured against accidents pursuant to the Compulsory Workplace Insurance Act of the Republic of Kazakhstan.



## EMPLOYEES OF THE CORPORATION EXPOSED TO HIGH INJURY RISK

In 2018, various additional measures were implemented to ensure safety of electrical works:

- employees were provided with special clothes and personal equipment for protection against electric arc;
- use of mobile video recorders in PEDC JSC to improve labor discipline and responsibility of operational personnel involved in operational switching, preparation of workplaces, installation/removal of grounding at workplaces, etc.;
- introduction of the OHS standard "Isolation of Energy Sources" (equipment locking and tagging, or LOTO (Lock out/Tag out)) at Petropavlovsk CHP-2 to ensure safety of repair and commissioning works at electrical installations;
- provision of personnel of electrical distribution companies with individual voltage signaling devices (as additional protection means to warn operating personnel at electrical installations) attached to the worker's protective helmet.

In 2018, there were no reported cases of electric shock or electric arc burns when servicing electrical installations.

## CUSTOMER SAFETY

The Corporation cares about safety and health of its customers. For this purpose, the Corporation carries out systematic awareness-raising campaigns and equipment inspections. Subsidiaries of the Corporation introduce advanced technologies and implement safe working practices.

Top managers of each district unit of the Corporation's electrical distribution companies jointly with occupational health and safety specialists conduct awareness-raising campaigns among the population regarding safety precautions near operating electrical installations and power transmission lines.

Every year, out-of-school events on electrical safety are held in educational institutions in the regions where the Corporation operates. Letters containing a reminder of the basic electrical safety rules and measures to prevent electrical injuries among children are sent for further distribution to the Department of Education of the Akimats of North Kazakhstan, Pavlodar and Akmola regions, the Department of Education of the cities of Petropavlovsk and Pavlodar and heads of district departments of education. These activities are implemented to prevent injuries among third parties, namely school-aged children and college students.

To warn the public and personnel about danger, safety signs and inscriptions are placed on all electrical installations operated in subsidiaries, all equipment is protected against unauthorized access by providing appropriate fences, locks and blocking mechanisms.

Regional and district media publish articles aimed to prevent injuries, including among children, and protect public health.

### PLANS FOR 2019

In 2019, the Corporation intends to introduce and maintain the following corporate OHS standards and documents:

- OHS standard "Confined Space Entry";
- OHS standard "Isolation of Energy Sources";
- guidelines concerning incentives to employees of CAEPCO JSC for compliance with occupational health and safety requirements.

In addition, CAEPCO JSC and its subsidiaries have the following plans for 2019:

- carrying out general corporate competitions in professional skills among business units of electricity distribution companies of CAEPCO JSC;
- introduction of an integrated automation system for all aspects of labor protection, which ensures consolidation and automation of OHS activities in the following areas: incident management, audits, OHS risks, PPE (availability control), OHS training;
- construction of a training area of PAVLODARENERGO JSC to drill operating and maintenance employees' skills in maintenance and repair of overhead power lines and repair employees' skills in maintenance and repair of heat networks.



## CORPORATE EVENTS

In April 2018, on the eve of the World Safety Day, a children's crafts competition "Labor Protection Through the Eyes of a Child" was organized. According to the terms of the competition, employees' children and grandchildren prepared various creative works (drawings, poems or crafts) dedicated to occupational safety and health issues.

As part of the World Safety Day, the Family Day for Safety and Health at Work was held with the participation of employees' children and grandchildren aged 7 to 12 years and their parents. The event included a tour of the enterprise, demonstration of video clips devoted to the enterprise and the issues of «Electrical safety in everyday life», «Fire safety», and a children's competition on electrical safety in life.

On April 29, 2018, a competition dedicated to the World Safety Day was held among young professionals in Pavlodar. Four teams from different regions of Kazakhstan took part in the competition on the stage of Cosmos Palace of Culture under the motto "Safety first!": «BezPravil» (PAVLODARENERGO JSC), SevKaz (SEVKAZENERGO JSC), «Pristolichnyi Svet» (Akmola EDC) JSC and "Power" (ASTANAENERGOSBYT LLP).

Team members - auditors, risk managers, employees of security services, HR department, electricians and supervisors showed the skills of talented performers who could play any role dedicated to production issues. The competition consisted of three stages: «business card», exchange of jokes on the «biathlon» principle, as well as musical homework.

Each contest was opened with a video message from General Directors of CAEPCO subsidiaries devoted to labor protection issues. In the Contest of Young Professionals, the team of PAVLODARENERGO JSC won in the nomination "CAEPCO Champions". The team of Astanaenergobyt LLP was recognized as the most musical team, and employees of AEDC JSC



became the most energetic team. The audience favorite prize was awarded to the team of SEVKAZENERGO JSC. Yelena Korpacheva, a member of the team of PAVLODARENERGO JSC, became a winner in the nomination «Golden Voice of CAEPCO». Amir Kakenov, a member of the team of SEVKAZENERGO JSC, was recognized as the best captain, and Olessya

Lugovenko (Akmola EDC JSC) won the nomination "Life and Soul of the Party".

On July 14, 2018, CAEPCO JSC and its subsidiaries - Akmola EDC JSC, AEDC-Energosbyt LLP and ASTANAENERGOSBYT LLP held an "Environmental Task Force" event dedicated to the 20th anniversary

of Nur-Sultan city and the 10th anniversary of the Corporation. The event took place in Akmola region.

More than 200 employees of CAEPCO Group of companies, as well as representatives of the akimat of Tselinograd district of Akmola region headed by akim Malgazhdar Tatkeyev took part in the action.

During the "Environmental Task Force" event, more than 20 tons of solid household garbage were removed from the banks of the Nura River located 20 km from Akmol village, Akmola region. Employees of CAEPCO Group of companies cleaned the coastal zone on both sides of the Nura River, filled up old fire pits and installed environmental protection posters.

On December 20, 2018, a solemn event devoted to the 10th anniversary of CAEPCO JSC was held in Nur-Sultan. Honorary guests of the event presented their congratulatory addresses to employees of the Company. During the event, the best employees of CAEPCO JSC and its subsidiaries were awarded and honored. During the event, the Club of the cheerful and sharp-witted was held with the assistance of employees of CAEPCO subsidiaries.





## ABOUT THE REPORT

This Report was prepared by Central-Asian Electric Power Corporation JSC (CAEPCO JSC) on the basis of performance results of 2018. The Report provides information on activities of CAEPCO JSC and its subsidiaries.

The document includes a Sustainable Development Report prepared in accordance with the GRI Standards: “The main scenario of conformity”. The Report is prepared on an annual basis. The previous Annual Report, which included 2017 Sustainable Development Report, was published in July 2018.

No substantial changes to the content of the report have been made, and the Corporation currently follows the GRI Standards for information disclosure. Section “Index of GRI Elements” contains a table explaining where to find standard reporting elements and performance data. No external assurance review of the Report was performed.

## NOTES TO THE REPORT

Top management positions of CAEPCO JSC are specified in this Report according to the Charter approved in 2019.

# MATERIAL ASPECTS AND BOUNDARIES

In accordance with the Principles for defining the report content as per the GRI Standards, the assessment of materiality of topics disclosed in the Report was carried out. The materiality assessment procedure includes the following main steps:

**Step 1.** Identification of the widest range of potentially important topics related to sustainable development based on the GRI Standards.

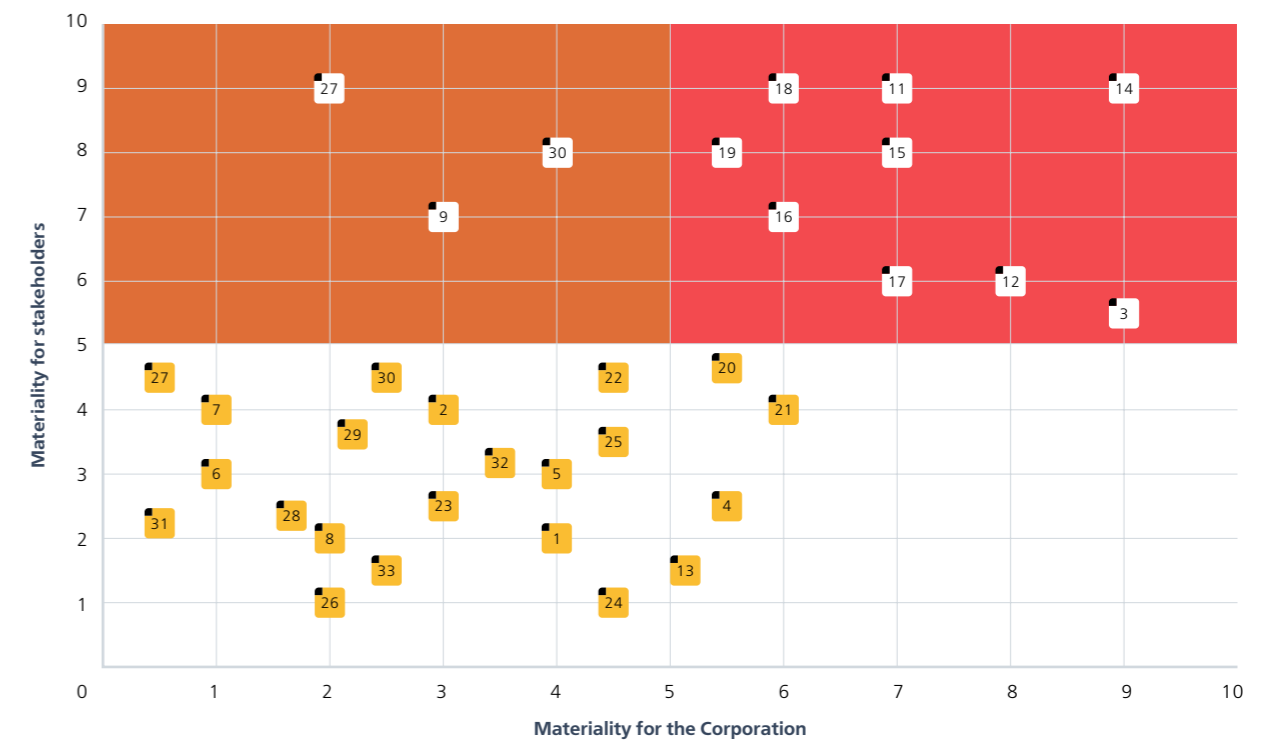
analysis of topics in terms of their impact on the Corporation’s activities and development strategy.

on its impact on the Corporation (horizontal axis) and its stakeholders (vertical axis). The highest priority was determined for aspects within the red; they were given priority during preparation of the Report. Also the report partially discloses aspects of the Orange area.

**Step 2.** Analysis of the extent of impact of the listed topics within and outside the Corporation. Selection of topics for further disclosure taking stakeholder engagement into consideration. Furthermore, priority

**Step 3.** In accordance with stakeholders’ opinion and strategic plans of the Corporation, key topics were ranked to determine priorities and develop the Materiality Map. An average score was attributed to each aspect of activity depending

List of topics and Materiality Map



No.	Aspects	No.	Aspects
1.	Economic performance	18.	Training and education
2.	Market presence	19.	Diversity and equal opportunities
3.	Indirect economic impacts	20.	Non-discrimination
4.	Procurement practices	21.	Freedom of association and collective bargaining
5.	Anti-corruption	22.	Child labor
6.	Anti-competitive behavior	23.	Forced or compulsory labor
7.	Materials	24.	Safety practices
8.	Power	25.	Rights of indigenous people and minorities
9.	Water	26.	Respect for human rights
10.	Biodiversity	27.	Local communities
11.	Emissions	28.	Assessment of vendor compliance with social criteria
12.	Effluents and wastes	29.	Public policy
13.	Assessment of vendor compliance with environmental standards	30.	Customer health and safety
14.	Compliance with environmental requirements	31.	Products and services labeling
15.	Employment	32.	Consumer privacy
16.	Relations between employees and management	33.	Violations of social and economic legislation
17.	Occupational health and safety		



# GRI ELEMENT INDEX

GRI STANDARD AND YEAR OF PUBLICATION	INDICATOR	PAGE NUMBER, SECTION	EXCEPTIONS/ COMMENTS
<b>GRI 101: REPORTING PRINCIPLES (2016)</b>			
<b>GRI 102: General information (2016)</b>	<b>Organization profile</b>		
	102-1 Organization name	Section "Business profile", p. 18	
	102-2 Areas of activity	Section "Business profile", p. 18	
	102-3 Head office location	Section "Business model", p. 16	
	102-4 Geography of operations	Section "Contacts", p. 97	
	102-5 Form of ownership	Section "Geography of operations", p. 8	
	102-6 Sales markets	Section "Geography of operations", p. 8 Section "Subsidiaries", p. 20	
	102-7 Company scale	Section "Key performance indicators for 2018", p. 17	
	102-8 Personnel information	Section "Human resources and social policy", p. 62	
	102-9 Supply chain	Section "Business model", p. 16	No changes
	102-10 Significant changes in the Company's operations	Section "Organizational structure", p. 48 Section "Share capital structure", p. 48	
	102-11 Precautionary principles	Section "Environmental protection Measures", p. 72	
	102-12 Support for external initiatives	Section "Environmental impact management", p. 72 Section "Greenhouse gas emissions", p. 72 Section "Environmental management system", p. 75	
	102-13 Association membership	–	The Corporation is a member of the Kazakhstan Electricity Association (KEA)
<b>Strategy</b>			
102-14 Management statement	Section "Letter of Chairman of the Management Board", p. 4 Section "Letter of General Director", p. 6		
<b>Ethics and Integrity</b>			
102-16 Values, principles, standards and rules of conduct	Section "Corporate Governance Code Compliance Report", p. 52		
<b>Corporate governance</b>			
102-18 Management structure	Section "Organizational structure", p. 48 Section "Performance overview of the committees of the Board of Directors", p. 49		
<b>Stakeholder engagement</b>			
102-40 List of stakeholders	Section "Stakeholder engagement", p. 58		
102-41 Collective bargaining agreements	Section "Interaction with trade unions", p. 66		
102-42 Identification and selection of stakeholders	Section "Stakeholder engagement", p. 58		
102-43 Approaches to engagement	Section "Stakeholder engagement", p. 58		
102-44 Key topics and concerns raised	Section "Stakeholder engagement", p. 58		

GRI STANDARD AND YEAR OF PUBLICATION	INDICATOR	PAGE NUMBER, SECTION	EXCEPTIONS/ COMMENTS
<b>GRI 102: General information (2016)</b>	<b>About the report</b>		
	102-45 Consolidation basis	Section "About the Report", p. 82	
	102-46 Determining the content of the report and boundaries	Section "List of topics and Materiality Map", p. 83	
	102-47 List of material topics	Section "List of topics and Materiality Map", p. 83	
	102-48 Recalculation of data from past periods	–	Indicators were not changed and are comparable with the data provided in previous annual reports of the Corporation
	102-49 Changes in the report content	–	No changes
	102-50 Reporting period	Section "About the Report", p. 82	
	102-51 Last publication date	Section "About the Report", p. 82	
	102-52 Reporting cycle	Section "About the Report", p. 82	
	102-53 Contact information for questions about the report content	Section "Contacts", p. 97	
	102-54 GRI compliance level	Section "About the Report", p. 82	
	102-55 GRI content index	Section "GRI Element Index", p. 84	
	102-56 External assurance	Section "About the Report", p. 82	
	<b>SIGNIFICANT TOPICS</b>		
<b>ECONOMICS</b>			
<b>GRI 103: Management approach (2016)</b>	103-1 Materiality and boundaries	Section "List of topics and Materiality Map", p. 83	
	103-2 Management approach	Section "Financial and economic indicators", p. 39	Comprehensive economic policy covers all major topics in this area
	103-3 Management assessment	–	Not conducted
<b>GRI 203: Indirect economic impacts (2016)</b>	203-1 Infrastructure support	Section "Social projects", p. 60	
	203-2 Significant indirect economic impacts	Section "Attracting young specialists", p. 65	
<b>ENVIRONMENT</b>			
<b>GRI 103: Management approach (2016)</b>	103-1 Materiality and boundaries	Section "List of topics and Materiality Map", p. 83	
	103-2 Management approach	Section "Environmental impact management", p. 72	Comprehensive environmental impact management policy covers all major topics in this area
	103-3 Management assessment	–	Not conducted
<b>Materials</b>			
<b>GRI 301: Materials (2016)</b>	301-1 Materials used by weight or volume	Section "Environmental impact management", p. 72	
<b>Water</b>			
<b>GRI 303: Water and discharge (2018)</b>	303-1 Use of water resources	Section "Water management and water resources conservation", p. 74	
	303-3 Water intake	Section "Water management and water resources conservation", p. 74	
	303-4 Water discharge	Section "Water management and water resources conservation", p. 74	



GRI STANDARD AND YEAR OF PUBLICATION	INDICATOR	PAGE NUMBER, SECTION	EXCEPTIONS/ COMMENTS
<b>Emissions</b>			
GRI 305: Emissions (2016)	305-1 Direct greenhouse gas emissions	Section "Greenhouse gas emissions", p. 72	
	305-4 Intensity of greenhouse gas emissions	Section "Greenhouse gas emissions", p. 72	
	305-5 Reduction of greenhouse gas emissions (COR2R)	Section "Greenhouse gas emissions", p. 72	
	305-7 NOx, SOx and other significant harmful emissions	Section "Atmospheric air protection", p. 72	
<b>Waste</b>			
GRI 306: Waste	306-2 Total mass of waste by type and disposal method	Section "Efficient handling and disposal of production wastes", p.74	
<b>Compliance</b>			
GRI 307: Compliance (2016)	307-1 Information on non-compliance with environmental laws and regulations	Section "Greenhouse gas emissions", p. 72	
<b>SOCIAL CATEGORY</b>			
GRI 103: Management approach (2016)	103-1 Materiality and boundaries	Section "List of topics and Materiality Map", p. 83	
	103-2 Management approach	Section "Human resources policy", p. 62	Comprehensive HR policy covers all major topics in this area
	103-3 Management assessment	–	Not conducted
<b>Employment</b>			
GRI 401: Employment (2016)	401-1 Headcount and staff turnover	Section "Staff turnover", p. 63	
<b>Employee/management relations</b>			
GRI 402: Employee/management relations (2016)	402-1 Minimum notice periods regarding significant operational changes	Section "Human resources and social policy", p. 62	
<b>Health and safety</b>			
GRI 403: Health and safety (2016)	403-1 Representation of employees in official joint health and safety committees with the participation of representatives of management and employees	Section "Occupational health and safety councils", p. 77	
	403-2 Types and frequency of workplace injuries, occupational diseases, lost work day rate, absenteeism rate in the workplace, total number of work-related fatalities	Section "Types and incidence of occupational injuries", p.78	
	403-3 Employees with high injury rates and high risk of occupational diseases	Section "Employees of the Corporation exposed to high injury risk", p. 79	
<b>Training</b>			
GRI 404: Training and education (2016)	404-2 Professional development programs	Section "Personnel training and development", p. 64	
<b>Diversity and equal opportunities</b>			
GRI 405: Diversity and equal opportunities (2016)	405-1 Composition of governing bodies	Section "Employees structure by category and sex", p. 63	

GRI STANDARD AND YEAR OF PUBLICATION	INDICATOR	PAGE NUMBER, SECTION	EXCEPTIONS/ COMMENTS
<b>Local communities</b>			
GRI 103: Management approach (2016)	103-1 Materiality and boundaries	Section "List of topics and Materiality Map", p. 83	
	103-2 Management approach	Section "Stakeholder engagement", p. 58	
	103-3 Management assessment	–	Not conducted
GRI 413: Local communities (2016)	413-1 Programs aimed at local community engagement, local community impact assessment and local community development	Section "Stakeholder engagement", p. 58	
<b>Customer health and safety</b>			
GRI 103: Management approach (2016)	103-1 Materiality and boundaries	Section "List of topics and Materiality Map", p. 83	
	103-2 Management approach	Section "Customer safety", p. 79	
	103-3 Management assessment	–	Not conducted
GRI 416: Customer health and safety (2016)	416-1 Evaluation of product safety for the consumer	Section "Customer safety", p. 79	
<b>Additional information</b>			
Power industry protocol GRI G4	G4-EU1 Installed capacity	Section "Business profile", p. 18	
	G4-EU2 Power generation	Section "Key performance indicators for 2018", p. 17	
	G4-EU3 Number of household, industrial, institutional and commercial customer accounts	Section "Geography of operations", p. 8	
	Length of aboveground and underground power transmission and distribution lines by control mode	Section "Main production characteristics", p. 20	
	Allocation of COR2R or equivalent emissions allowances	Section "Greenhouse gas emissions", p. 72	






# FINANCIAL STATEMENTS

## CENTRAL-ASIAN ELECTRIC-POWER CORPORATION JOINT STOCK COMPANY AND ITS SUBSIDIARIES

### CONSOLIDATED STATEMENT OF FINANCIAL POSITION AS AT 31 DECEMBER 2018 (in thousands of Tenge)

	Note	31 December 2018	31 December 2017
<b>ASSETS</b>			
NON-CURRENT ASSETS:			
Property, plant and equipment	8	260,133,112	251,341,851
Goodwill	9	1,687,141	1,687,141
Intangible assets	10	1,979,566	1,997,187
Deferred tax assets	37	1,640,086	1,282,858
Loans receivable	12	4,074,492	-
Other financial assets	13	86,249	5,515
Advances paid	11	4,716,792	3,317,136
Other non-current assets	16	2,397,150	1,816,766
<b>Total non-current assets</b>		<b>276,714,588</b>	<b>261,448,454</b>
CURRENT ASSETS:			
Inventories	14	4,751,626	4,880,435
Trade receivables	15	15,435,390	18,767,608
Advances paid	11	2,197,762	1,518,316
Income tax prepaid		809,345	179,315
Other current assets	16	7,428,544	3,679,690
Loans receivable	12	4,499,930	-
Other financial assets	13	950,152	17,181,418
Cash	17	1,301,811	2,368,075
<b>Total current assets</b>		<b>37,374,560</b>	<b>48,574,857</b>
<b>TOTAL ASSETS</b>		<b>314,089,148</b>	<b>310,023,311</b>
<b>EQUITY AND LIABILITIES</b>			
EQUITY:			
Share capital	18	46,043,272	46,043,272
Additional paid-in capital	19	1,348,105	1,348,105
Revaluation reserve for property, plant and equipment		38,998,854	41,413,587
Retained earnings		58,274,754	60,979,619
<b>Total equity</b>		<b>144,664,985</b>	<b>149,784,583</b>
NON-CURRENT LIABILITIES:			
Bonds issued	20	19,410,835	20,181,710
Loans	21	-	46,448,347
Deferred revenue	24	7,242,625	7,729,309
Finance lease obligations	25	1,717,330	2,118,028
Deferred tax liabilities	37	38,675,054	38,759,445
Ash disposal area restoration liabilities	23	1,745,140	484,877
Employee benefit obligations		116,367	136,805
Other long-term payables		367,414	194,333
<b>Total non-current liabilities</b>		<b>69,274,765</b>	<b>116,052,854</b>
CURRENT LIABILITIES:			
Current portion of bonds issued	20	473,473	578,571
Loans	21	72,461,789	19,270,179
Trade payables	26	17,076,140	17,781,829
Advances received	27	2,524,568	2,222,981
Current portion of ash disposal area restoration liabilities	23	61,665	87,694
Current portion of employee benefit obligations		11,905	11,574
Current portion of finance lease obligations	25	500,583	477,867
Income tax payable		-	68,681
Financial guarantees	22	2,090,875	-
Other liabilities and accrued expenses	28	4,948,400	3,686,498
<b>Total current liabilities</b>		<b>100,149,398</b>	<b>44,185,874</b>
<b>TOTAL EQUITY AND LIABILITIES</b>		<b>314,089,148</b>	<b>310,023,311</b>

Signed on behalf of Group management:

  
**S.V. Kan**  
 President
28 June 2019  
Almaty, the Republic of Kazakhstan
  
**N.V. Buksha**  
 Chief Accountant
28 June 2019  
Almaty, the Republic of Kazakhstan

The notes on pages 14-77 form an integral part of these consolidated financial statements. Independent Auditor's Report is on pages 2-8.



**CENTRAL-ASIAN ELECTRIC-POWER CORPORATION JOINT STOCK COMPANY  
AND ITS SUBSIDIARIES**

**CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME  
FOR THE YEAR ENDED 31 DECEMBER 2018**

(in thousands of Tenge)

	Note	2018	2017
REVENUE	29	143,880,232	131,651,735
COST OF SALES	30	(114,309,584)	(100,295,105)
<b>GROSS PROFIT</b>		<b>29,570,648</b>	<b>31,356,630</b>
General and administrative expenses	31	(10,262,996)	(9,144,534)
Selling expenses	32	(2,404,415)	(2,033,859)
Finance costs	33	(8,268,842)	(6,467,984)
Finance income	34	1,416,338	1,111,927
Impairment of financial assets		(538,029)	-
Foreign exchange gain/(loss), net	35	(5,479,440)	181,079
Impairment loss on goodwill	9	-	(737,278)
Other income/(expenses), net	36	(201,415)	(14,314)
<b>PROFIT BEFORE TAXATION</b>		<b>3,831,849</b>	<b>14,251,667</b>
INCOME TAX EXPENSE	37	(2,231,737)	(3,612,563)
<b>PROFIT FOR THE YEAR</b>		<b>1,600,112</b>	<b>10,639,104</b>
OTHER COMPREHENSIVE INCOME FOR THE YEAR, net of income tax Items that will not be reclassified subsequently to profit or loss:			
Loss on revaluation of property, plant and equipment		(15,750)	-
<b>TOTAL COMPREHENSIVE INCOME FOR THE YEAR</b>		<b>1,584,362</b>	<b>10,639,104</b>
Earnings per share			
<b>Earnings per share for the year, in KZT</b>	41	<b>43.30</b>	<b>287.92</b>

Signed on behalf of Group management:

 **S.V. Kan**  
President

 **N.V. Buksha**  
Chief Accountant

28 June 2019  
Almaty, the Republic of Kazakhstan

28 June 2019  
Almaty, the Republic of Kazakhstan

The notes on pages 14-77 form an integral part of these consolidated financial statements. Independent Auditor's Report is on pages 2-8.



**CENTRAL-ASIAN ELECTRIC-POWER CORPORATION JOINT STOCK COMPANY  
AND ITS SUBSIDIARIES**

**CONSOLIDATED STATEMENT OF CHANGES IN EQUITY  
FOR THE YEAR ENDED 31 DECEMBER 2018**

(in thousands of Tenge)

	Share capital	Additional paid-in capital	Revaluation reserve for property, plant and equipment	Retained earnings	Total equity
<b>At 1 January 2017</b>	<b>46,043,272</b>	<b>1,348,105</b>	<b>44,190,092</b>	<b>49,253,645</b>	<b>140,835,114</b>
Profit for the year	-	-	-	10,639,104	10,639,104
Other comprehensive income for the year	-	-	-	-	-
<b>Total comprehensive loss for the year</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>10,639,104</b>	<b>10,639,104</b>
Amortisation of revaluation reserve on property, plant and equipment	-	-	(2,776,505)	2,776,505	-
Dividends declared	-	-	-	(1,689,635)	(1,689,635)
<b>At 31 December 2017</b>	<b>46,043,272</b>	<b>1,348,105</b>	<b>41,413,587</b>	<b>60,979,619</b>	<b>149,784,583</b>
Adjustment of opening balance IFRS 9 (Note 2)	-	-	-	(2,665,526)	(2,665,526)
<b>Restated balance at 1 January 2018</b>	<b>46,043,272</b>	<b>1,348,105</b>	<b>41,413,587</b>	<b>58,314,093</b>	<b>147,119,057</b>
Profit for the year	-	-	-	1,600,112	1,600,112
Other comprehensive loss for the year	-	-	(15,750)	-	(15,750)
<b>Total comprehensive income for the year</b>	<b>-</b>	<b>-</b>	<b>(15,750)</b>	<b>1,600,112</b>	<b>1,584,362</b>
Amortisation of revaluation reserve on property, plant and equipment	-	-	(2,398,983)	2,398,983	-
Liabilities of finance guarantees	-	-	-	(1,672,700)	(1,672,700)
Shareholder operation	-	-	-	(237,914)	(237,914)
Dividends declared	-	-	-	(2,127,820)	(2,127,820)
<b>At 31 December 2018</b>	<b>46,043,272</b>	<b>1,348,105</b>	<b>38,998,854</b>	<b>58,274,754</b>	<b>144,664,985</b>

Signed on behalf of Group management:

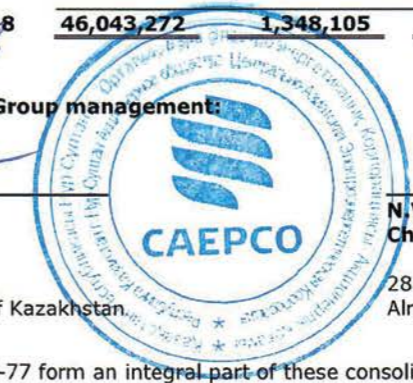
 **S.V. Kan**  
President

 **N.V. Buksha**  
Chief Accountant

28 June 2019  
Almaty, the Republic of Kazakhstan

28 June 2019  
Almaty, the Republic of Kazakhstan

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**CENTRAL-ASIAN ELECTRIC-POWER CORPORATION JOINT STOCK COMPANY  
AND ITS SUBSIDIARIES**
**CONSOLIDATED STATEMENT OF CASH FLOWS  
FOR THE YEAR ENDED 31 DECEMBER 2018**
*(in thousands of Tenge)*

	Note	2018	2017
<b>OPERATING ACTIVITIES:</b>			
Profit before taxation		3,831,849	14,251,667
Adjustments for:			
Depreciation and amortisation	8, 10	11,825,056	11,326,606
Finance costs	33	8,268,842	6,467,984
Impairment of financial assets	39	538,029	684,649
Impairment provision for obsolete and slow-moving inventories	14	83,345	62,836
Loss on disposal of property, plant and equipment	36	830,672	383,065
Loss on impairment of goodwill		-	737,278
Accrual of provision for unused vacations		176,605	76,702
Foreign exchange (gain)/loss, net	35	5,479,440	(181,079)
Finance income	34	(1,416,338)	(1,111,927)
Gain on write-off of accounts payable		(21,718)	(52,881)
Loss on impairment of CIP items		88,251	-
Ash disposal area restoration liabilities		572,007	-
Other		(244,880)	46,277
<b>Operating cash flow before movement in working capital</b>		<b>30,011,160</b>	<b>32,691,177</b>
Changes in inventories		45,464	(68,120)
Changes in trade receivable		1,397,946	694,889
Changes in advances paid		(639,661)	90,015
Changes in other current assets		(201,648)	(139,377)
Changes in other non-current assets		2,295	42,955
Changes in other trade receivables		(2,060,350)	-
Changes in trade payables		585,653	225,118
Changes in deferred revenue		(109,970)	76,869
Changes in advances received		301,587	(247,731)
Changes in other liabilities and accrued expenses		2,295,646	49,099
Changes in ash disposal area restoration liabilities		(270,294)	(192,708)
Changes in employee benefit obligations		(53,362)	(13,886)
<b>Cash from operating activities</b>		<b>31,304,466</b>	<b>33,208,300</b>
Income tax paid		(2,389,522)	(489,868)
Interest paid	20,21	(7,389,567)	(7,170,574)
<b>Net cash from operating activities</b>		<b>21,525,377</b>	<b>25,547,858</b>

**CENTRAL-ASIAN ELECTRIC-POWER CORPORATION JOINT STOCK COMPANY  
AND ITS SUBSIDIARIES**
**CONSOLIDATED STATEMENT OF CASH FLOWS  
FOR THE YEAR ENDED 31 DECEMBER 2018 (CONTINUED)**
*(in thousands of Tenge)*

	Note	2018	2017
<b>INVESTING ACTIVITIES:</b>			
Acquisition of property, plant and equipment		(22,238,457)	(23,261,781)
Acquisition of intangible assets		(274,222)	(347,990)
Placement of deposits		(22,190,081)	(17,201,239)
Cash withdrawn from deposits		38,714,726	11,180,296
Proceeds from interest accrued on placed deposits		367,570	-
Receipt of interest accrued on loans receivable		32,748	-
Proceeds from disposal of property, plant and equipment		31,248	10,742
Cash given to Ecoalternative LLP	16	(3,200,000)	-
Loans given	12, 39	(10,595,609)	-
Repayment of loans issued	12, 39	704,812	-
Acquisition of financial assets		(300,731)	-
Cash returned from guarantee fees		(23,715)	(24,097)
Cash given to shareholders		(894,720)	-
Cash returned from shareholders		800,000	-
<b>Net cash used in investing activities</b>		<b>(18,668,440)</b>	<b>(29,644,069)</b>
<b>FINANCING ACTIVITIES:</b>			
Proceeds from loans	21	30,827,798	28,056,936
Repayment of loans	21	(30,577,328)	(22,398,498)
Proceeds from issuance of bonds	20	1,440,568	5,151,672
Bond redemption	20	(2,732,325)	-
Repayment of bonds	20	-	(8,538,266)
Dividends paid	18	(2,489,124)	(1,292,914)
Proceeds from government grants	24	20,334	3,760,380
Finance lease	25	(424,119)	(268,441)
<b>Net cash from/(used in) financing activities</b>		<b>(4,083,964)</b>	<b>4,470,869</b>
<b>NET DECREASE IN CASH</b>		<b>(1,077,259)</b>	<b>374,658</b>
<b>CASH at the beginning of the year</b>	17	<b>2,368,075</b>	<b>2,022,862</b>
Effect of exchange rate changes on cash balances in foreign currencies	35	93,319	(29,445)
Expected credit losses for cash and cash equivalents		(82,323)	-
<b>CASH at the end of the year</b>	17	<b>1,301,811</b>	<b>2,368,075</b>

Signed on behalf of Group management:


**S.V. Kan**  
 President

 28 June 2019  
 Almaty, the Republic of Kazakhstan


**N.V. Buksha**  
 Chief Accountant

 28 June 2019  
 Almaty, the Republic of Kazakhstan

The notes on pages 14-77 form an integral part of these consolidated financial statements. Independent Auditor's Report is on pages 2-8.



# GLOSSARY, ABBREVIATIONS

Overhead power line	– is an electric line for transmission of electric power through the wires located in the open air and attached by means of insulators and fittings to supports or brackets.
Overhead transmission lines	– are meant for transmission of electric power over a distance by wires.
Gigacalorie	– is a unit of measurement of thermal energy used for assessment in the heat power industry, heating systems and the utilities sector.
Gigacalorie per hour	– is a derived unit used to specify the amount of heat produced or used by some equipment per a unit of time.
Cooling tower	– is a structure shaped like an exhaust tower providing stack effect.
Goodwill	– is the difference between the price of a company and the fair value of all its assets.
Ash	– is an incombustible residue (in the form of dust) which consists of mineral impurities left after combustion of fuel.
Ash dump site	– is a place for collection and disposal of waste ash and slag generated during combustion of solid fuel at combined heat and power plants.
Calorie (cal)	– is an off-system unit for measuring the amount of heat.
Boiler	– is a device for generating pressurized steam or hot water through fuel combustion, use of electric power, heat of exhaust gas or technological process.
Power transmission line (PTL)	– is a structure consisting of wires (cables) and auxiliary devices for transmission of electric power from power plants to consumers.
Megawatt	– is a unit of power measurement in electricity production.
Pavlodar HNs	– Pavlodar heat networks
Substation	– is an electric installation used for conversion and distribution of electric power and consisting of transformers or other power converters, switchgear, control devices and auxiliary facilities.
Available capacity of a unit (plant)	– is installed capacity of a generating unit (plant) minus its capacity limitations.
Combined heat and power plant (CHPP, cogeneration heating plant)	– is a thermal power plant generating not only electric power, but also heat supplied to consumers in the form of steam and hot water.
Transformer (from Latin transformare – to transform, to convert)	– is a device for converting any significant properties of energy (e.g., electric transformer, torque converter) or objects (e.g., photo transformer).
Turbine generator	– is a combination of a steam turbine, electricity generator and exciter united by one shaft train; it converts potential energy of steam into electric power.
Installed capacity	– is an effective value of the turbine generators' rated capacity.
Installed heat capacity of the plant	– is the sum of all rated heating capacities for all the equipment commissioned under the act and designed for supplying heat to external consumers and steam and hot water for internal needs
Installed electrical capacity of the energy system	– is total effective capacity of all turbo and hydropower generators of power plants in the energy system in accordance with their passports or specifications.
Wet scrubber	– is a device for wet ash and dust removal operating in the phase inversion mode.
CTF	– Clean Technology Fund.
EBITDA	– an analytical indicator, which means earnings before interest, taxation, depreciation and amortization.
ESAP	– Environmental and Social Action Plan.

ISO	– International Organization for Standardization.
KEGOC	– Kazakhstan Electricity Grid Operating Company JSC.
OHSAS	– International occupational health and safety management system.
COSO	– Committee of sponsoring organizations of the Treadway Commission
JSC	– Joint-stock company.
AEDC, Akmola EDC	– Akmola Electrical Distribution Company JSC.
ASCAHE	– Automatic system for commercial accounting of heat energy.
ASCAE	– Automatic system for commercial accounting of electricity.
GDP	– Gross domestic product.
OHL	– Overhead lines.
OTL	– Overhead transmission lines.
WPP	– Wind power plant.
Gcal	– Gigacalorie.
Gcal/h	– Gigacalories per hour.
SPAIID	– State Program for Accelerated Industrial and Innovative Development.
GRES	– State district power plant.
GTPP	– Gas turbine power plant.
HEPP	– Hydroelectric power plant.
EBRD	– European Bank for Reconstruction and Development.
FARD	– Fly ash removal device.
kWh	– kilowatt per hour.
SC MNE RK	– Statistic Committee of the Ministry of National Economy of the Republic of Kazakhstan.
MW	– Megawatt.
MNE RK	– Ministry of National Economy of the Republic of Kazakhstan.
NGO	– Non-governmental organization.
EP	– Environment protection.
Pavlodar EDC	– Pavlodar Regional Electric Distribution Company JSC.
PCHP-2	– Petropavlovsk combined heat and power plant No.2.
PE	– PAVLODARENERGO JSC.
RK	– Republic of Kazakhstan.
PGA	– Power grid area.
ICS	– Internal control system.
BoD	– Board of Directors.
ABC	– Aerial bundled conductor.
NK REDC	– North Kazakhstan Regional Electric Distribution Company JSC.
SKE	– SEVKAZENERGO JSC.
MM	– Mass Media.



RMS	– Risk management system.
SPP	– Solar power plant.
INR	– Inventories.
LLP	– Limited liability partnership.
TPP	– thermal power plant.
ECHP	– Ekibastuz CHP.
CHP	– Combined heat and power plant.
CAPEC	– Central-Asian power-energy company JSC.
CAEPCO	– Central-Asian Electric Power Corporation JSC.
PP	– Power plant.

## CONTACTS

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### REGISTRAR

**Integrated Securities Registrar JSC** (state registration certificate

No. 1678–1910–02-AO issued on 11.01.2012 by the Justice Department of Almaty).







