



CAEPCO

Центрально-Азиатская
Электроэнергетическая Корпорация

Corporate report
on Environmental and Social Action Plan
of «Central-Asian Electric
Power Corporation», JSC
for the year 2012

Almaty, 2013

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This report of “Central Asian Electric Power Corporation”, JSC (hereinafter abbreviated as “CAEPCO”, JSC) is prepared according to the requirements of Environmental and Social Action Plan (hereinafter abbreviated as ESAP) and prepared as part of the Investment Program in accordance with the Policy of the European Bank for Reconstruction and Development (EBRD) in respect to the environmental protection of the EBRD-financed projects.

“CAEPCO”, JSC (hereinafter the Company) is a vertically-integrated energy holding represented by the energy enterprises in Pavlodar and North Kazakhstan regions including all the elements of electricity supply: generation, transmission and distribution, and by distribution company in Astana.

The Company consists of:

1. The group of companies of “PAVLODARENERGO”, JSC (hereinafter “PE”, JSC) - “Pavlodar Regional Electric Distribution Company”, JSC (hereinafter “PREDC”, JSC), “Pavlodar District Heating Networks”, LLP (hereinafter “PDHN”, LLP PE), “Pavlodarenergosbyt”, LLP (hereinafter “PEsbyt”, JSC).
2. The group of companies of “SEVKAZENERGO”, JSC (hereinafter “SKE”, JSC) – “North Kazakhstan Regional Electric Distribution Company”, JSC (hereinafter “NKREDC”, JSC), “Petropavlovsk District Heating Networks”, LLP (hereinafter “PDHN”, LLP), “Sevkazenergosbyt”, LLP (hereinafter “SKEsbyt”, LLP).

1. The Environmental policy and concepts of environmental activities of the Company

Environmental protection is one of the most important issues among the priorities of the Programme of strategic development of the Company. Environmental pollution prevention is decisive in all cases of decision-making for electricity and heat production. Environmental pollution is easier to be prevented rather than eliminated. During the introduction of new technologies the level of their environmental impact and the effectiveness of energy and natural resources utilization are assessed.

The Environmental policy of the Company was developed in accordance with the Concept of ecological safety of the Republic of Kazakhstan for 2004-2015, Environmental Code and ISO 14000 standards based on the tasks set by the Environmental and Social Action Plan. The acquaintance with the Environmental policy at the Company's subsidiaries was implemented with the help of acquaintance lists. The Policy is displayed on the information boards in all the departments and is available for the Company personnel.

The Company intends to do everything possible to prevent a negative environmental impact and adopt practices that meet the requirements of ISO 14001 throughout the Company.

The fundamental principles of the Environmental policy are the following:

- recognition of the constitutional human right on healthy environment;
- consideration of priority of environmental security as an integral part of national security;
- guidance by considerations of ecological expediency and environmental principles of the Environmental Management System during the development of economic strategy;
- energy saving and rational use of natural resources and energy at all stages of electricity and heat production;
- the reduction of emissions and wastes from electricity and heat production and their environmentally safe treatment;
- carrying out activities aimed at the reduction and prevention of accidents and reduction of their negative environmental impact;
- improvement of technological processes of electricity and heat production;
- openness and availability of environmental information, immediate notification of all stakeholders about the accidents, their environmental impact, and measures for their elimination;
- openness and availability of the results of environmental monitoring;
- involvement of all personnel of the Company enterprises in their environmental activities through the development and improvement of environmental education of the employees; all the employees are required to follow safety regulations and environmental standards and rules necessary to comply with environmental policies and achieve the effectiveness of environmental performance.

Top management of “CAEPCO”, JSC undertakes the liability for implementation of the stated Environmental policy and maintenance of the environmental management system.

Environmental activities of the Company are performed in the following directions:

1. Organization and implementation of production monitoring in order to achieve environmental quality goals:
 - ambient air monitoring, including:

- monitoring of operating efficiency of gas-and-dust purifying equipment and compliance with established emissions standards;
 - monitoring of the ambient air pollution level on the border with the Company’s sanitary protection zones and ash ponds;
 - monitoring of hazardous substances content in the Company’s emissions;
 - monitoring of the quality of instrument measurements;
 - water resources monitoring, including:
 - monitoring of the underground water pollution level at the industrial sites of the Company and on the border with the sanitary protection zones of the ash ponds;
 - soil, land resources and production wastes monitoring, including:
 - monitoring of soil contamination level in the area of the Company industrial sites and ash ponds;
 - monitoring of generation, utilization and disposal of production and consumption wastes;
 - development and planning of environmental activities;
 - monitoring of implementation of the nature-conservative measures;
 - estimation of the impact level on the environmental components.
 - minimizing the impact of production processes of the enterprises on the environmental components and human health;
 - formation of a higher level of environmental awareness and responsibility of the Company’s management and employees;
 - increasing production and environmental efficiency of the environmental protection management system;
 - implementation of the ISO 14001 requirements.
2. Registration of environmental emissions, industrial monitoring data analysis, compliance with environmental requirements, and provision of industrial ecological control data.
 3. Organization of internal inspections. Implementation of preventive and corrective measures aimed at the elimination of violations of environmental legislation of the Republic of Kazakhstan.
 4. Implementation of analysis of the Company’s environmental protection activity and ecological efficiency of the Company’s environmental management system.

2. Standards of environmental and social activities of the Company

“PAVLODARENERGO”, JSC

The certification body (“TÜV Rheinland InterCert”) issued to “PAVLODARENERGO”, JSC the compliance certificate confirming that the organization adopts the system that correspond to the requirements of OHSAS 18001-2007 standard.

“PAVLODARENERGO”, JSC successfully passed the recertification audits to confirm the compliance with the requirements of ISO 9001:2008 and ISO 14001:2004 standards. According to results of audits it was confirmed that the systems are adopted in a proper way and correspond to the field of implementation and all the requirements of standards. Also the first supervisory audit to confirm the compliance with the requirements of OHSAS 18001:2007 standard was successfully passed.

At the end of the audits “PAVLODARENERGO”, JSC received the certificates ISO 9001:2008 and ISO 14001:2004, and also an official confirmation of validity of certificate OHSAS 18001:

- certificate on the Quality Management System ISO 9001, registration #75 100 70327, valid from 10.02.2013 to 02.10.2015;
- certificate on the Environmental Management System ISO 14001, registration #75 110 0406, valid from 06.03.2013 to 05.03.2016; and
- certificate on the Occupational, Health and Safety Management System OHSAS 18001, registration #OC-4870-0020 valid from 23.01.2012 to 22.01.2015.

“Pavlodar Regional Electric Distribution Company”, JSC received the certificates of compliance with the international standards:

- certificate on the Quality Management System ISO 9001, registration #75 110 70492, valid from 29.06.2012 to 28.06.2015;
- certificate on the Environmental Management System ISO 14001, registration #75 110 0556, valid from 29.06.2012 to 28.06.2015; and
- certificate on the Occupational, Health and Safety Management System OHSAS 18001, registration #OC-4870-0024, valid from 10.07.2012 to 09.07.2015.

“Pavlodar District Heating Networks”, LLP successfully passed two stages of the certification audit. The company received three certificates confirming the compliance with the international standards:

- certificate on the Quality Management System ISO 9001, registration #75 100 70461, valid from 09.08.2012 to 08.08.2015;
- certificate on the Environmental Management System ISO 14001, registration #OC-4870-0043, valid from 19.12.2012 to 18.12.2015; and
- certificate on the Occupational, Health and Safety Management System OHSAS 18001, registration #OC-4870-0028, valid from 28.06.2012 to 27.06.2015.

“SEVKAZENERGO”, JSC

The certification body (“TÜV Rheinland InterCert”) conducted the first certification audit of the Integrated Management System for compliance with ISO 9001:2008, ISO 14001:2004 and OHSAS 18001-2007 international standards. Certification was successfully passed, and the following certificates were received:

- certificate on the Quality Management System ISO 9001, registration #75 100 70429, valid from 01.08.2011 to 31.07.2014;
- certificate on the Environmental Management System ISO 14001, registration #75 110 0505, valid from 07.09.2011 to 06.09.2014;
- certificate on the Occupational, Health and Safety Management System OHSAS 18001, registration #OC-4870-0010, valid from 30.07.2011 to 29.07.2014.

“North-Kazakhstan Regional Electric Distribution Company”, JSC

"National Center of expertise and certification", JSC, conducted a recertification audit of the Integrated Management System for compliance with ISO 9001:2008, ISO 14001:2004, and OHSAS 18001: 2007. Based on the results of the certification audit the Integrated Management System was recognized as compliant with the requirements of international standards, and the following certificates of conformity were received:

- certificate on the Quality Management System ISO 9001, registration # KZ2710318.07.03.09113, valid from 11.05.2012 to 11.05.2015;
- certificate on the Environmental Management System ISO 14001, registration # KZ2710318.07.03.09114, valid from 11.05.2012 to 11.05.2015; and
- certificate on the Occupational, Health and Safety Management System OHSAS 18001, registration # KZ2710318.07.03.09115, valid from 11.05.2012 to 11.05.2012.

“Petropavlovsk District Heating Networks”, LLP

The certification body (TÜV Rheinland InterCert) conducted the first supervisory audit for the compliance with the requirements of ISO 9001:2008 international standard; the certification for the compliance with the requirements of ISO 14001:2004 and OHSAS 18001-2007 international standards was conducted, and the following certificates were received:

- certificate on the Environmental Management System ISO 14001, registration #75 110 0558, valid from 08.10.2012 to 07.10.2015;
- certificate on the Occupational, Health and Safety Management System OHSAS 18001, registration #OC-4870-0037, valid from 16.07.2012 to 15.07.2015.

During the year, in accordance with the approved Program, an internal audit in all “CAEPCO”, JSC subsidiaries were conducted. At the beginning of the year an analysis of the achievement of the quality, environmental and occupational safety goals was performed, and on its basis the objectives for the year were developed. The analysis of the implementation of the Quality Management, Environmental Management, and Occupational, Health and Safety Management programs was performed. The general analysis of the functioning of the Integrated Management System (IMS) was conducted, and decisions on its development were made. Based on the goals in the field of Quality, Environment, and Occupational, Health and Safety the relevant programs were developed for the year to achieve these goals.

3. Key environmental indicators of the Company for 2012

Environmental protection is a part of daily work of the Company’s enterprises. The Company’s enterprises keep records of the air pollutant emissions and wastes generated during the production activity.

3.1. Hazardous emissions into the atmosphere

Reported data on emissions of the Company for 2012 in the group of companies “PAVLODARENERGO”, JSC and “SEVKAZENERGO”, JSC (tons)

Air pollutant emissions	“PE”, JSC (total for 3 CHPs)		“SKE”, JSC (PCHP-2)		“CAEPCO”, JSC	
	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	67,908	48,807	39,743	31,488	107,651	80,295
Coal ash (nonorganic dust 70-20% silica)	12,435	10,859	10,028	6,174	40,451	17,033
Nitrogen dioxide	17,611	9,086	5,317	4,730	22,928	13,816
Nitric Oxide	2,859	1,475	864	769	3,723	2,244
Sulfur dioxide	32,100	25,421	19,498	16,593	51,598	42,014
Carbon monoxide	2,791	1,854	3,714	3,213	6,505	5,067
Other	111	111	322	9	433	120

Reported data of “PAVLODARENERGO”, JSC CHP for 2012 (tons)

Emissions of air pollutants	CHP-2		CHP-3		Ekibastuz CHP		“PE”, JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	11,533	9,049	45,065	30,555	11,309	9,204	67,908	48,807
Coal ash	1,422	1,410	6,904	6,164	4,108	3,285	12,435	10,859
Nitrogen dioxide	2,949	1,897	13,039	5,886	1,623	1,303	17,611	9,086
Nitric Oxide (NOx)	479	308	2,117	955	263	213	2,859	1,475
Sulfur dioxide (SO2)	6,294	5,076	21,002	16,347	4,804	3,998	32,100	25,421
Carbon monoxide (CO)	369	338	1,958	1,157	464	359	2,791	1,854
Other	19	19	45	45	47	47	111	111

Note: The air emissions volume permitted by the Ministry of Environmental Protection is indicated in the table above as Limit, and the actual volume of emissions is indicated as Actual.

Reported data on concentration of emissions of “PAVLODARENERGO”, JSC for 2012 (mg/Nm³)

Concentration of emissions	Contents, mg/Nm ³ for $\alpha = 1,4$							
	CHP-2 PE		CHP-3 PE		Ekibastuz CHP PE			
	MPE	Actual	MPE	Actual	Pipe # 1		Pipe # 2	
					MPE	Actual	MPE	Actual
Coal ash	700- 900	634	1,175	351	1,927	796	700- 900	634

Nitric Oxide (NO _x)	680	492	850	517	516	482	680	492
Sulfur dioxide (SO ₂)	2,000	1,170	2,000	1,194	1,264	766	2,000	1,170
Carbon monoxide (CO)	85	86	97	79	100	100	85	86

Reported data on concentration of emissions of “SEVKAZENERGO”, JSC for 2012 (mg/Nm³)

Concentration of emissions	Contents, mg/Nm ³ for α = 1,4	
	MPE	Actual
Coal ash	840	500
Nitric Oxide (NO _x)	929	699
Sulfur dioxide (SO ₂)	1,923	1,680
Carbon monoxide (CO)	300	192

Reported data of Electric Distribution Companies of “CAEPCO”, JSC for 2012 (tons)

Emissions of air pollutants	“PREDC”, JSC		“NKREDC”, JSC		“CAEPCO”, JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Total	6.38	1.95	14.74	8.37	21.12	10.32
Mineral Oil	0.37	0.37			0.37	0.37
Nitrogen dioxide	0.16	0.04	0.14	0.08	0.30	0.12
Nonorganic dust 70-20% silica	0.38	0.31	5.53	2.99	5.91	3.30
Sulfur dioxide	0.11	0.06	0.04	0.01	0.15	0.07
Carbon monoxide	3.61	0.23	0.38	0.22	3.99	0.45
Other	1.73	0.95	8.65	5.07	10.38	6.02

The Company’s Enterprises did not exceed the maximum permissible emissions in 2012.

Reported data of “Pavlodar District Heating Networks”, LLP for 2012 (tons)

Emissions of air pollutants	Pavlodar District Heating Networks		Ekibastuz Heat Distribution Company		Total, Pavlodar and Ekibastuz	
	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	1.366	1.366	1.942	1.942	3.308	3.308
Fluorochemical	0.016	0.016	0.005	0.005	0.021	0.021
Nitrogen dioxide	0.120	0.120	0.159	0.159	0.279	0.279
Iron II oxide	0.629	0.629	0.238	0.238	0.867	0.867
Manganese and its compounds	0.050	0.050	0.014	0.014	0.064	0.064
Carbon monoxide	0.385	0.385	1.297	1.297	1.682	1.682
Other	0.166	0.166	0.229	0.229	0.395	0.395

Reported data of “Petropavlovsk District Heating Networks”, LLP for 2012 (tons)

Emissions of air pollutants	Petropavlovsk District Heating Networks	
	Limit	Actual
Total, including	4.706	1.279
Fluorochemical	0.002	0.001
Nitrogen dioxide	0.123	0.114
Iron II oxide	0.345	0.204
Manganese and its compounds	0.019	0.017
Carbon monoxide	0.369	0.289
Other	3.847	0.655

3.2. Carbondioxide (CO2) emissions

After entering into force of Kyoto Protocol in the Republic of Kazakhstan on 17 September 2009, The Company organized work on preparation of an inventory of greenhouse gas emissions and consumption of ozone-depleting substances. "PAVLODARENERGO", JSC and "SEVKAZENERGO", JSC are included in the National Allocation Plan of the Republic of Kazakhstan to receive the certificate confirming quotas for CHP-2, CHP-3, Ekibastuz CHP and Petropavlovsk CHP.

In 2012 “PAVLODARENERGO”, JSC produced 3,162 million kW-hr of electric energy and 4.536 million Gcal of heat energy. 3,443 thousand tons of Ekibastuz coal and 4.869 thousand tons of mazut were used for energy production.

In 2012 “SEVKAZENERGO”, JSC produced 2,410 million kW-hr of electric energy and 1.918 million Gcal of heat energy. 2,380 thousand tons of Ekibastuz coal and 2.548 thousand tons of mazut were used for energy production.

Overall the Company produced 5,572 million kW-hr of electric energy and 6,454 million GCal of heat energy in 2012. 5,823 thousand tons of Ekibastuz coal and 7.417 thousand tons of mazut were used for production of the energy.

Emissions of greenhouse gases for 2012

	CO2	CH4	N2O	C2H2F4	SF6	Total
	Amount of GHGs in the equivalent of CO2, tons					
“PAVLODARENERGO”, JSC total, including:	5,376,065	855	24.908	0.014	6.214	5,401,833
CHP-2	1,080,453	175	5.117	-	-	1,085,745
CHP-3	3,422,721	540	15.765	0.012	6.214	3,439,032
Ekibastuz CHP	872,891	140	4.025	0.002	-	877,056
“SEVKAZENERGO”, JSC PCHP-2	3,897,725	857	18.851	-	-	3,917,433
Total “CAEPCO”, JSC	9,273,790	1,712	43,759	0.014	6.214	9,319,266

3.3. Placement of ash slag emissions

Reported data on the volume of ash slags generation, permitted and actual, for the group of companies “PAVLODARENERGO”, JSC and “SEVKAZENERGO”, JSC for 2012, (tons)

Wastes	“PAVLODARENERGO”, JSC		“SEVKAZENERGO”, JSC		“CAEPCO”, JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Ash slags	1,540,681	1,411,735	1,127,274	994,774	2,667,955	2,406,509

Including CHPs of “PAVLODARENERGO”, JSC (tons)

Wastes	CHP-2		CHP-3		Ekibastuz CHP	
	Limit	Actual	Limit	Actual	Limit	Actual
Ash slags	287,519	279,603	1,030,813	909,845	222,349	222,287

The Company Enterprises did not exceed the maximum permissible ash slags emissions in 2012.

4. Compliance with environmental requirements

To meet the requirements of the Technical Regulations and minimize the impact of production processes of the enterprise on the environment and human health, subsidiaries of “PAVLODARENERGO”, JSC and “SEVKAZENERGO”, JSC developed environmental protection activities for the maximum possible reduction of environmental emissions. Copies of the Programs are attached to the report.

The Company developed and implements an improved system of flue gas purification – replacement of the existing ash catchers, i.e. wet scrubbers with superposed Venturi pipes with ash collecting efficiency equal to 97%, with battery emulsifiers of the second generation for each boiler with the efficiency of 99,5%.

Modernization of the ash catchers will allow decreasing coal ash output concentration down to 250-300 mg/m³ and reducing sulfur oxides by 5-15% without any additives.

To minimize the impact of production processes of the enterprise on the environment and human health, environmental protection activities were developed and approved by the Environmental Protection Agency.

“PAVLODARENERGO”, JSC (CHP-2, CHP-3, and Ekibastuz CHP)

The company developed environmental actions programmes and had them approved by the Ministry of Environmental Protection of the Republic of Kazakhstan for the period of 2012-2014 to the amount of KZT 2,249,525 thousand, including actions for 2012 to the amount of KZT 726,942 thousand. The actions to the amount of KZT 1,148,767 thousand were performed in 2012.

The main actions include:

- reconstruction of the dust extraction plant on boiler unit #3 at CHP-2 with installation of battery emulsifiers of the II generation; the cost of works made KZT 334,133 thousand;
- reconstruction of the dust extraction plant on boiler unit #2 at CHP-3 with installation of battery emulsifiers of the II generation; the cost of works made KZT 446,368 thousand;
- reconstruction of the dust extraction plant on boiler unit #5 at Ekibastuz CHP with installation of battery emulsifiers of the II generation; the cost of works made KZT 43,875 thousand;
- construction of a new cooling tower; the cost of works made KZT 214,280 thousand.

“Pavlodar Regional Electric Distribution Company”, JSC

In the context of its economic activity, “PREDC” JSC complies with the requirements of current legislation in the field of environmental protection regulated by Ecological Code and other regulatory legal acts of the Republic of Kazakhstan.

To minimize the impact of production processes of the enterprise “PREDC” JSC on the environment and human health, environmental protection activities were developed and agreed with the environmental authorities for the period 2013-2017 to the amount of KZT 333,543 thousand. 16 actions were planned for implementation in 2012; out of them, 15 were fully implemented and amounted to KZT 14,625 thousand.

“Pavlodar District Heating Networks”, LLP

The Company developed the Environmental Protection Action Plan for 2012, which was approved by State Institution “Department of Natural resources and Environmental Management Regulation in Pavlodar region” to the amount of KZT 521 thousand. In 2012, 9 actions out of 10 planned actions were fully implemented to the amount of KZT 1,317 thousand.

The main actions include:

- cleaning of walls of ventilation systems of stationary welding stations from suspended matters and sediments – KZT 12 thousand;
- repair of the aspiration system of the woodwork area – KZT 37 thousand;
- Cleaning of water supply wells and sewage manholes – KZT 58 thousand;
- repair of the water recycling circulation system used for cooling of district heat pump bearings of pumping station #2 – KZT 163 thousand;
- sanitary cleaning of territories of Central Heat Point, transmission and distribution networks (territories the company is responsible for) from the garbage; the costs made KZT 889 thousand.

The main actions include:

- planting of greenery (trees and bushes), planting of new lawns and flowerbeds; the costs made KZT 47 thousand;
- collection of waste with its further removal from the plant’s territory to authorized landfills; the costs made KZT 1,667 thousand;
- delivery of utilized mercury-containing lamps for demercurization; the costs made KZT 27 thousand;
- acquisition of shrink sleeves; the costs made KZT 12,492 thousand.

“SEVKAZENERGO”, JSC

In 2012, in order to achieve a higher level of environmental awareness and responsibility of managers and employees of “SEVKAZENERGO”, JSC, the first compliance audit was successfully conducted by inspectors from “TÜV International RUS” LLC for compliance with the requirements of the Integrated Management System, which consists of the Quality Management System, Environmental Management System and Occupational, Health and Safety Management System to confirm the company’s compliance with the international standards ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007.

“SEVKAZENERGO”, JSC developed environmental activities for 2011-2012 to the amount of KZT 1,126,123 thousand and had them approved by the Ministry of Environmental Protection . In 2012, 11 environmental activities were planned to the amount of KZT 280,236 thousand. All the activities were carried out in full scope to the amount of KZT 310,707 thousand.

The main actions include:

- installation of battery titanium emulsifiers of the II generation on boilers #7 and #12 in order to reduce pollutant emissions, the cost of works made KZT 219,270 thousand;
- repair of worn components of dust extraction plants in order to maintain efficiency of dust extraction plants at the required level; the cost of works made KZT 21,618 thousand;

- installation of meters for monitoring nitrogen oxides, sulfur oxides, carbon dioxide, and fly ash in order to control air emissions; the cost of works made KZT 8,066 thousand;
- revegetation of treated ash ponds in order to restore soil fertility; the cost of works made KZT 15,357 thousand;
- repair of ash pond dykes to prevent migration of contaminants; the cost of works made KZT 6,481 thousand;
- construction of the third section of ash pond #2 to organize ash waste storage area; the costs made KZT 12,440 thousand.
- The works were implemented in full scope. In December 2012 the state committee signed an act, which permits commissioning of this section.

“North-Kazakhstan Regional Electric Distribution Company”, JSC

The company developed environmental protection activities and had them approved with State Institution “Esil Environmental Department” for the period 2012-2016 to the amount of KZT 1,266 thousand.

In 2012, it was planned to spend KZT 190 thousand for environmental protection. All activities were carried out in full scope to the amount of KZT 551,8 thousand.

The main actions include:

- dust collecting equipment repair and removal of dust; the costs amounted to KZT 10,2 thousand;
- subscription to environmental publications, which cost KZT 10,3 thousand;
- gardening and landscaping; the costs made KZT 531,2 thousand.

“Petrovsk District Heating Networks”, LLP

To meet the requirements of the Technical Regulations and minimize the impact of production processes on the environment and human health "PDHN", LLP has developed environmental activities for maximum possible reduction of environmental emissions. The Environmental activities for 2010-2014 to the amount of KZT 95,8 thousand were developed and agreed with State Institution "Environmental Department of the North-Kazakhstan Region of the Environmental and Control Committee of the Ministry of Environmental Protection of the Republic of Kazakhstan".

In 2012 the environmental actions were planned to the amount of KZT 14,2 thousand; actually all actions were fully implemented to the amount of KZT 15,9 thousand.

The main actions include:

- repair of dust cleaning equipment and removal of dust, which was done using the companies' own resources;
- subscription to newspaper "Ecolog-NS", which cost KZT 15,9 thousand.

5. Implementation of environmental investment activities

The Company improves environmental standards through the construction of new ash ponds, installation of emulsifiers, modernization of flue gases purification systems, and conducting a variety of activities to reduce the negative environmental impact. The Investment Program of the Company is directed to the replacement of obsolete equipment with a new one with better ecological parameters.

“PAVLODARENERGO”, JSC

Construction of ash ponds (CHP-3, CHP-2, and Ekibastuz CHP)

Since 2009, the Company started implementation (the projects for CHP-2 and CHP-3 are realized; design work for EkiCHP is currently executed) of one of the major investment projects, i.e. construction of new ash ponds for CHP-3 and CHP-2. The scheduled time of completion of the construction works is 2012 for CHP-3 and 2014 for CHP-2. As for Ekibastuz CHP, the works start in 2013 and are finished in 2014.

Ash ponds of CHP-2 and CHP-3 constitute a single industrial unit, the western part of which is represented by CHP-3 ash pond, and the eastern part – by CHP-2 ash pond. Ash ponds will be constructed on the site within the bounds of «PAVLODARENERGO», JSC CHP-3 ground area. The CHP-3 ash pond construction site borders upon the currently used ash pond of CHP-3 within the existing allotment of land of 55 ha. Ash pond of CHP-2 will be constructed on the site within the bounds of «PAVLODARENERGO», JSC CHP-2 ground area. The construction site is a section that borders upon the currently used ash pond of CHP-2 within the existing allotment of land of 63.7382 ha.

In 2012, the Company received the conclusion of the State ecological expertise on project materials: “Construction of the 2nd stage of CHP-3 ash pond of “PAVLODARENERGO” JSC” (conclusion #3-2-12/464 dated 03.02.2012).

The estimated cost of works on CHP-3 ash pond and CHP-2 ash pond is KZT 2.497 billion and KZT 2.853 billion, respectively; the estimated cost of works on Ekibastuz CHP ash pond will be defined after the project realization.

The activities planned and implemented in 2012:

- construction of ash pond at CHP-3 (project was implemented and passed the state expertise; permission for construction and assembling works was received; the assembly of sluice-discharge pipelines and drainage is executed);
- repair of separating dykes of the ash pond (filling of dykes up to a design reference mark was implemented within the scope of the project of enlarging dykes of the existing CHP-3 ash pond).

Reconstruction of dust extraction plants including the installation of battery emulsifiers of the II generation.

Starting from 2009, a stage-by-stage installation of boiler emulsifiers on CHP-2, CHP-3, and Ekibastuz CHP is carried out.

During the implementation of this activity, ash emissions in flue gases are decreased by 4 to 5 times, and sulfur emissions – by a factor of 1.2 for each boiler. By 2015 all boilers will be equipped with such emulsifiers.

Emulsifiers are installed on all boilers at CHP-3, on boilers #2, #3, #4, and #5 at CHP-2, and on boilers #5, #7, #8, and #9 at Ekibastuz CHP. The battery titanium emulsifiers of the II generation are purchased from a manufacturing company, “SVERDLOVENERGOREMONT”, OJSC (the energy and electrification company).

The activities planned and implemented in 2012:

- installation of emulsifiers of the II generation on 3 boilers (boiler unit #5 Ekibastuz CHP, boiler unit #2 CHP-3, and boiler unit #3 CHP-2);
- repair of worn-out elements of dust extraction plants;
- reconstruction of boilers to decrease hazardous emissions into the atmosphere (boiler unit #6 at Ekibastuz CHP).

Modernization of the flue gases purification system

The existing system of flue gas purification consists of scrubbers with preconnected Venturi pipes of CHP-2 and CHP-3 boilers and has the ash collecting efficiency of 97%; the system at Ekibastuz CHP has the ash collecting efficiency of 98%. The battery emulsifiers being installed have the efficiency of 99.5%, which allows decreasing ash emissions and will result in paying less for environmental emissions. During the installation of battery emulsifiers, the construction works include the dismantling of a Venturi pipe with the change in the design of a flue duct scrubber inlet. An emulsifier swirler and a ring-type drop catcher are installed into the existing scrubber or the scrubber being installed (depending on the project) in the direction of gas flows. To prevent a low temperature corrosion of a flue gas path, a hot air feeding to an assembly box above the scrubber is provided after the emulsifiers.

Modernization of dust extraction plants will make it possible to reduce the output concentration of coal ash down to 250-300mg/m³, as well as to suppress sulfur oxides without any additives by 5-15%.

Measures to reduce the negative environmental impact

- modernization of boiler units in order to change a combustion mode and decrease NO_x emissions (started in 2009);
- transfer to basalt-containing insulation materials. The lifetime of new materials is 45 years longer; such materials possess better thermal insulation characteristics. It is planned to decrease heat radiation losses in pipelines by a factor of 1.6, which will allow decreasing heat flow losses by 2.1% and heat losses in the engineering process by 6 thousand Gcal;
- installation of stationary gas analyzers for monitoring of pollutant emissions, which measure SO_x, NO_x, CO₂, and dust emissions in flue gases during their continuous operation;
- installation of nitrogen oxide, sulphur oxide, carbon dioxide and ash metering devices (An automated control device was installed on boiler unit #2 at CHP-3. (the device is being repaired)). An automated control device on boiler unit #4 CHP-2 is being adjusted. An automated control device is installed on boiler unit #2 CHP-2. An automated control device for boiler unit #6 Ekibastuz CHP is at the stage of purchasing);
- implementation of industrial environmental control;
- informing the public about the environmental impact of the Company's activity.

Modernization of the main equipment and addition of new capacities

- installation of boiler unit of BKZ-420 type (#1 CHP-3); the boiler was commissioned in December 2012;
- assembling of turbo unit of PT-65/75 type (#1 CHP-3); the boiler was commissioned in December 2012;
- the construction of three section block-modular fan cooling tower #2 at the existing pool of the dismantled chimney-type cooling tower of CHP-2.

Measures to reduce fuel consumption by reducing the specific consumption rates and commercial losses

Turbo units being installed are equipped with new ancillary equipment, including electric motors of a more advanced design, by means of which the decrease in cost of electricity and heat used for auxiliaries will be achieved, which, in its turn, will increase the CHP energy efficiency. The company is constantly working to reduce fuel consumption for energy production.

“Pavlodar Regional Electric Distribution Company”, JSC

During 2012 electric extra losses of “PREDC” JSC decreased by 11.096 million kW-hr. In 2012 “PREDC” JSC implemented the Energy-Saving Program for electric networks to the amount of KZT 136.5 million, which includes replacement of naked wires by self-bearing covered wires, replacement of induction-type meters by electronic meters with distant reading (“Yabeda”), and transfer of registration units of individual houses to the fronts of the houses.

“Pavlodar District Heating Networks”, LLP

Reduction of heat losses in the pipes in 2012 was not achieved due to the low temperatures in December 2012. In December 2011 the average monthly temperature was -14.2°C , in December 2012 the average monthly temperature was -23.4°C .

“SEVKAZENERGO”, JSC

Construction of the ash ponds

In September 2008 the largest investment project was initiated, i.e. construction of the section number 3 ash pond #2. In 2011, construction was completed. The total construction period is 37 months. The design capacity of the ash pond is 8.74 million cubic meters, and its service lifetime is 12 years. The project provides for raising dykes and increasing the lifetime of the ash pond up to 25 years. The useful area of the ash pond is 202 ha. The total length of the dyke is 5 km. The estimated cost of works is KZT 3.5 billion. In December 2012 the State Commission Act for acceptance of this section into service was signed. Commissioning of the facility will ensure the continuity of the technological cycle of the station and storage of waste ash in the next 25 years.

Reconstruction of dust extraction plants with installation of battery emulsifiers of the II generation

During the implementation of this activity the degree of flue gases purification from harmful substances reaches 99.5%; ash emissions in flue gases are reduced by 6 times; sulfur emissions are reduced by 1.2 times for each boiler.

The installation of titanium battery emulsifiers of the II generation is planned on a yearly basis for 2 boilers. Battery titanium emulsifiers of the II generation are purchased from the manufacturer, “Energy and Electrification” SVERDLOVENERGO”, OJSC. This year emulsifiers have been installed on boilers #7 and #12 out of all eleven boilers.

Measures to reduce the negative environmental impact

- modernization of boiler units in order to change a combustion mode and decrease NO_x emissions (started in 2009);
- increasing pressure on existing Venturi pipes (the dust extraction plant) from 5.2 atm up to 6.5 to 7 atm. Due to this, the efficiency of the dust extraction plant increases from 96.8% up to 97.2%; the annual amount of emissions is reduced by 3,215 tons;
- elimination of asbestos use and step-by-step transfer to basalt-containing insulation materials. It is planned to decrease heat radiation losses in pipelines by a factor of 1.6,

which will allow decreasing heat flow losses by 2.1% and heat losses in the engineering process by 8 thousand Gcal;

- installation of stationary gas analyzers for monitoring of pollutant emissions, which measure SO_x, NO_x, CO₂, and dust emissions in flue gases during their continuous operation.

Reconstruction and modernization of main equipment and addition of new facilities

- works on installation of new boiler unit #8 (E-270-100 type) with the generating capacity of 270 tons per hour were executed. The carcass, the drum and the heating surfaces of the boiler were assembled;

- modernization of turbines # 4 and #3 (P-33-90/1,2 type) followed by replacement for a turbine of T-50/60-90 type was executed;
- reconstruction of boiler # 6 with the increase in its steam capacity up to 270 tons per hour was completed;
- reconstruction of boiler # 7 the increase in its steam capacity up to 270 tons per hour was completed
- replacement of switchgear sections - 6 kV. Section 7 was replaced;
- modernization of a transporter crane;
- automated System of commercial electric energy metering (ASKUE) is in operation for 35, 110, and 220 kV;
- replacement of obsolete equipment, C&I, and the automatic control system was executed.

Activities on Energy efficiency system, reduction of fuel consumption by means of decreasing specific consumption rates and commercial losses

Turbo units being installed are equipped with new ancillary equipment, including electric motors of a more advanced design, by means of which the decrease in cost of electricity and heat used for auxiliaries will be achieved, which, in its turn, will increase the CHP energy efficiency.

Reduction of specific consumption rates will be equal to 317 kcal per 1 kW, and the total heat consumption for electricity and heat production will be equal to 84 thousand Gcal. The fuel consumption for energy production is being reduced permanently.

In heat networks Variable Frequency Drives (VFD) are being introduced on circulating, dredging, and make-up pumps and pulverized-coal feeders. Even the installation of VFDs on the group of dredging pumps only will result in energy savings over 1.5 million kW-hr per year.

The Energy-Saving Program is closely connected with the objectives of environmental management of CHP-2.

As a result of the above mentioned activities, “SEVKAZENERGO”, JSC saves up to 9,000 tons of fuel annually. Implementation of the above mentioned activities will allow reduction of air emissions by 37,000 tons.

6. Regulations of the Company’s environmental activities for 2012

In the context of its economic activity the Company complies with the requirements of current legislation in the field of environmental protection regulated by Ecological Code and other regulatory legal acts of the Republic of Kazakhstan.

Established environmental regulations of the Company’s enterprises

“PAVLODARENERGO”, JSC (CHP-2, CHP-3, and Ekibastuz CHP)

- updating of Draft regulations for maximum permissible emissions for CHP-2 of “PAVLODARENERGO”, JSC approved by Irtysh Environmental Department in 2011 (conclusion #3-2-13/3145 dated 16.08.2011);
- updating of Draft regulations for maximum permissible emissions for CHP-3 of “PAVLODARENERGO”, JSC approved by the Environmental Regulation and Control Committee in 2011 (conclusion #10-02-16/2787 dated 31.08.2011);
- draft regulations for maximum permissible emissions for Ekibastuz CHP of “PAVLODARENERGO”, JSC approved by Irtysh Environmental Department in 2011 (conclusion #3-2-13/4090 dated 19.10.2011);
- draft regulations for waste disposal, approved 23.02.2010 by Irtysh Environmental Department. Conclusion of State ecological expertise on the project “Standards for wastes disposal of Ekibastuz CHP of “PAVLODARENERGO”, JSC #3-2-12/922 dated 23.02.2010;
- draft regulations for production and consumption waste disposal for CHP-2 and CHP-3 of “PAVLODARENERGO”, JSC approved 15.06.2010 by the Environmental Regulation and Control Committee of the Ministry of Environmental Protection of the Republic of Kazakhstan. Conclusion of the State ecological expertise on the project “Standards for production and consumption waste disposal of CHP-2 and CHP-3 of “PAVLODARENERGO”, JSC” #06-03-01-18/236-1 dated 15.06.2010;
- Environmental Impact Assessment of Ekibastuz CHP of “PAVLODARENERGO”, JSC for 2012. Conclusion of the State ecological expertise #3-2-12/338 dated 26.01.2012;
- Environmental Impact Assessment of CHP-2 of “PAVLODARENERGO”, JSC for 2012. Conclusion of the State ecological expertise #3-2-12/337 dated 26.01.2012;
- Environmental Impact Assessment of CHP-3 of “PAVLODARENERGO”, JSC for 2012. Conclusion of State ecological expertise #3-2-12/339 dated 26.01.2012;
- insurance policy of OӘC#0000014 series dated 10.03.2012. The insurance policy is valid up to 09.03.2013;
- permit #0056609 dated 29.11.2011 for emissions into the environment for 2012-2014, giving the right to “PAVLODARENERGO” JSC to emit pollutants in the amount of 67,907.745 tones in 2012, and to dispose the production and consumption wastes in the amount of 1,540,681 tones in 2012.
- environmental protection plan of “PAVLODARENERGO”, JSC for 2012-2014;
- the Industrial Ecological Control Program of “PAVLODARENERGO”, JSC for 2012-2014;
- conclusion of State ecological expertise on project materials:
 - “Reconstruction of the dust extraction plant of boiler #9 of BKZ-75-39FB type at Ekibastuz CHP of “PAVLODARENERGO”, JSC including installation of a

battery emulsifier of the II generation” (conclusion #3-2-12/573 dated 17.02.2012);

- “Construction of the 2nd stage of CHP-2 ash pond of “PAVLODARENERGO” JSC” (conclusion #3-2-12/464 dated 03.02.2012);
- “The construction of three-section block-modular fan cooling tower at the existing pool of CHP-2 of “PAVLODARENERGO” JSC (conclusion #3-2-12/3495 dated 07.12.2012);
- “Reconstruction of the dust extraction plant of boiler #3 of BKZ-160-100 F(M) type CHP-2 of «PAVLODARENERGO», JSC including installation of battery emulsifiers of the II generation (conclusion #3-2-12/3332 dated 26.11.2012);
- “Reconstruction of the dust extraction plant of boiler #2 of BKZ-420-240 type CHP-3 of «PAVLODARENERGO», JSC including installation of battery emulsifiers of the II generation (conclusion #3-2-12/3330 dated 26.11.2012).

“Pavlodar Regional Electric Distribution Company”, JSC

- the Draft regulations for maximum permissible emissions into environment of the unit “PREDC” JSC – COEN 2012. Conclusion of the State ecological expertise on compliance with environmental standards and requirements #12/1-15-/ЮЛ-Б-724 dated 22.10.2012;
- the Draft regulations for maximum permissible emissions into environment of the subdivision “PREDC” JSC – West Organization for Electricity Networks to produce emissions in 2012. Conclusion of the State ecological expertise on compliance with environmental standards and requirements #12/1-15-/ЮЛ-Б-669 dated 05.10.2012.;
- permit #0001771 dated 14.12.2012 for emissions into the environment for 2013-2017, giving the right to “PREDC” JSC West Organization for Electricity Networks to produce emissions;
- permit #0001835 dated 26.12.2012 for emissions into the environment for 2013-2017, giving the right to “PREDC” JSC City Organization for Electricity Networks to produce emissions;
- environmental Impact Assessment of the structural unit “PavlodarEnergService”, JSC City Organization for Electricity Networks in 2008. Conclusion of the State ecological expertise on compliance with environmental standards and requirements #7-12-1/1039 dated 23.04.2008. In connection with renaming of the company into “PREDC” JSC in March 2009 the company received Conclusion of State ecological expertise #3-2-12/2030 dated 17.07.2009;
- environmental Impact Assessment of the structural unit “PavlodarEnergService”, JSC West Organization for Electricity Networks to produce emissions in 2008. Conclusion of the State ecological expertise on compliance with environmental standards and requirements #7-12-1/1039 dated 23.04.2008. In connection with renaming of the company into “PREDC” JSC in March 2009 the company received Conclusion of State ecological expertise #3-2-12/2030 dated 17.07.2009;
- permit #0000381 dated 01.04.2010 for emissions into the environment for 2010-2012, giving the right to “PREDC” JSC West Organization for Electricity Networks to produce emissions;
- permit #0000382 dated 01.04.2010 for emissions into the environment for 2010-2012, giving the right to “PREDC” JSC City Organization for Electricity Networks to produce emissions;
- permit #0000383 dated 01.04.2010 for emissions into the environment for 2010-2013 giving the right to “PREDC” JSC District Electricity Distribution Networks to produce emissions;

- permit #0000479 dated 30.07.2010 for emissions into the environment for 2010-2014 giving the right to “PREDC” JSC production plant in Suvorov st., 79 Pavlodar to produce emissions.

“Pavlodar District Heating Networks”, LLP

- draft regulations for maximum permissible emissions (MPE) for “Pavlodar District Heating Networks”, LLP. Conclusion of the State ecological expertise #1-14/IOP-687 dated 28.07.2011;
- environmental Impact Assessment of Production complex “Ekibastuz Heat Distribution Company” of “Pavlodar District Heating Networks”, LLP. Conclusion of the State ecological expertise #1-14/IOP-885 dated 25.10.2011;
- draft regulations for wastes disposal for “Pavlodar District Heating Networks”, LLP (including Pavlodar and Ekibastuz heating networks). Conclusion of the State ecological expertise #1-12/IOP dated 02.06.2011 on the project of Draft standards for wastes disposal;
- permit for emissions into the environment #0001470 issued by State Institution “Department on Natural resources and Environmental Management Regulation in Pavlodar region” for 2012-2015, giving the right to “Pavlodar District Heating Networks” LLP to emit pollutants in the following amounts: 1.3657226 tones in 2012, 1.3657226 tones in 2013, 1.3657226 tones in 2014, and 1.3657226 tones in 2015;
- permit for emissions into the environment #0001469 issued by State Institution “Department on Natural resources and Environmental Management Regulation in Pavlodar region” for 2012-2015, giving the right to Production complex “Ekibastuz Heat Distribution Company” of “Pavlodar District Heating Networks” LLP to emit pollutants in the following amounts: 1.94156278 tons in 2012; 1.94156278 tons in 2013; 1.94156278 tons in 2014; and 1.94156278 tons in 2015.

“SEVKAZENERGO”, JSC

- draft regulations for maximum permissible discharge (MPD) for “SEVKAZENERGO”, JSC for 2011-2015. The conclusion of the State ecological expertise for the Draft MPD for “SEVKAZENERGO”, JSC # 10-02-15/5675 dated 15.12.2010;
- draft regulations for maximum permissible discharge (MPD) for “SEVKAZENERGO”, JSC for 2010-2014. The conclusion of the State ecological expertise for the Draft MPD for “SEVKAZENERGO Petropavlovsk”, LLP # 06-03-01-18/7079 dated 27.08.2009;
- draft regulations for maximum permissible emissions (MPE) of pollutants for “SEVKAZENERGO”, JSC for 2011-2015. The conclusion of the State ecological expertise for the Draft MPE for “SEVKAZENERGO”, JSC #10-02-15/5676 dated 15.12.2010;
- draft regulations for wastes disposal for “SEVKAZENERGO Petropavlovsk”, LLP for 2008-2012. Conclusion of the State environmental expertise #04-13/2601 dated 17.06.2008 for the “SEVKAZENERGO Petropavlovsk”, LLP on the project of Draft standards for wastes disposal;
- permit for emissions into the environment #0056432 dated 30.12.2010 for 2011-2012, giving the right to “SEVKAZENERGO”, JSC to emit pollutants in the amount of 39,742.983356 tones, discharge wastewaters in the amount of 11,204.902 tones, and generate production and consumption wastes in the amount of 1,127,274.174 tons in 2012;
- permit for emissions into the environment #0000040 dated 24.12.2012 for 2013-2014, giving the right to “SEVKAZENERGO”, JSC to emit pollutants in the amount of 42,

- 185.801 tones, discharge wastewaters in the amount of 11,204.663 tones, and generate production and consumption wastes in the amount of 1,150,619.317 tons in 2013;
- permit for environmental emissions for “SEVKAZENERGO”, JSC for 2013 (reconstruction of boiler #6) #0038057 dated 28.12.2012 providing the right to produce emissions in the amount of 3.6598915 tons in 2013;
 - permit for special water use in the Republic of Kazakhstan #04-0015-II Series Ishim dated 18.04.2011 for the industrial water supply of the company;
 - permit for special water use in the Republic of Kazakhstan #04-0003-II Series Ishim dated 09.02.2010 for the discharge of partially clean water;
 - conclusion of the State ecological expertise on project materials:
 - Conclusion of the State ecological expertise #03-05/1116 dated 02.06.2011 based on the materials of Environmental Impact Assessment (III stage) to the project "Construction of the section # 3 of ash pond # 2 (adjustment) of “SEVKAZENERGO”, JSC;
 - Environmental Impact Assessment for the “SEVKAZENERGO Petropavlovsk”, LLP for 2009-2013. Conclusion of the State ecological expertise # 06-03-01-18/7078 dated 27.08.2009 on the Draft EIA for “SEVKAZENERGO Petropavlovsk” LLP;
 - Conclusion of the State ecological expertise # 05-10/2546 dated 04.08.2010 based on the materials of Preliminary EIA of the Feasibility study “The reconstruction of Petropavlovsk CHP-2 with the replacement of turbo unit #4 and boiler unit # 8”;
 - Conclusion of the State ecological expertise # 05-10/2691 dated 12.08.2010 on Section “Environmental Protection” of the project "The high-concentration dust-transmission system with the reconstruction of burners for boilers of BVK-220-100-4 and TP-46A types of “SEVKAZENERGO”, JSC;
 - Conclusion of the State ecological expertise #5-4 -03/553 dated 12.10.2012 based on the materials of Environmental Impact Assessment (Section "Environmental Protection" of the working draft "Steam Boiler #6 (BKZ 220-100-4 type) of Petropavlovsk CHP-2 (reconstruction)»;
 - Conclusion of the State ecological expertise #05-4 -03/890 dated 23.11.2012 based on the materials of Environmental Impact Assessment (Section "Environmental Protection" of the working draft "Steam Boiler #7 (BKZ 220-100-4 type) of Petropavlovsk CHP-2 (reconstruction)»;
 - Conclusion of the State ecological expertise on the section "Environmental Protection" to the working draft "Construction of the main equipment repair and modernization preparation shop on the company’s own land lot at the following address: 28 Ya.Gashek street, the city of Petropavlovsk”.

“North-Kazakhstan Regional Electric Distribution Company”, JSC

- draft regulations for maximum permissible emissions for “North-Kazakhstan Regional Electric Distribution Company”, JSC for the period of 2012-2016. Conclusion of the State ecological expertise #03.10-03/3128 dated 21.12.2011 on the draft MPE for “North-Kazakhstan Regional Electric Distribution Company”, JSC;
- permit for environmental emissions for 2012-2016 #0001915 Series T- 13 dated 22.02.2012 for “North-Kazakhstan Regional Electric Distribution Company”, JSC, giving the right to emit pollutants in the amount of 14.738070391 tons per year;
- conclusion of the State ecological expertise #0002101 dated 25.05.2012 on the working draft "Reconstruction of the oil facilities building";
- The Industrial Environmental Control Program for 2012-2016 for “North-Kazakhstan regional Electric Distribution Company”, JSC;

- environmental Protection Plan for 2012-2016 for “North-Kazakhstan Regional Electric Distribution Company”, JSC;
- hazardous Waste Certificates drawn up in 2008, 2009, and 2011.

“Petropavlovsk District Heating Networks”, LLP

- draft regulations for maximum permissible emissions for “Petropavlovsk District Heating Networks”, LLP approved by State Institution “Department of Natural Resources and Environmental Management Regulation in North-Kazakhstan region” in 2009;
- conclusion of the State ecological expertise #03-3115 dated 31.12.2009 on the Draft regulations for maximum permissible emissions for “Petropavlovsk District Heating Networks”, LLP;
- environmental Impact Assessment of “Petropavlovsk District Heating Networks”, LLP;
- conclusion of the State ecological expertise #03.10-03/436 dated 02.03.2010;
- hazardous Waste Certificates for 13 types of hazardous wastes dated 2009 and approved by North-Kazakhstan branch of Esil Environmental Department;
- hazardous Waste Certificates for 3 types of hazardous wastes dated 2012 and approved by North-Kazakhstan branch of Esil Environmental Department;
- permit for environmental emissions of Series T – 13 #0000734 dated 15.04.2010 issued by State Institution “Department of Natural Resources and Environmental Management Regulation in North-Kazakhstan region” for 2010-2014, giving the right to “Petropavlovsk District Heating Networks”, LLP to emit pollutants in the following amounts: 3.3332643 tons in 2010; 4.7057849 tons in 2011; 4.7057849 tons in 2012; 4.7057849 tons in 2013; and 4.7057849 tons in 2014;
- pollutant emissions inventory for the "Petropavlovsk District Heating Networks", LLP.

7. State Environmental Control

Governmental inspections on environmental issues

In 2012 the following state authorities carried out the series of check-ups at the Company's enterprises:

“PAVLODARENERGO”, JSC (CHP-2, CHP-3 and Ekibastuz CHP)

- Environmental Department of Pavlodar Region of the Environmental Regulation and Control Committee of the Ministry of Environmental Protection of the Republic of Kazakhstan - a scheduled inspection of “PAVLODARENERGO” JSC;
- Administration of the State Sanitary and Epidemiological Committee in the city of Pavlodar – a scheduled inspection of CHP-2 and CHP-3;
- Administration of the State Sanitary and Epidemiological Committee in the city of Ekibastuz – a scheduled inspection of Ekibastuz CHP;
- Fire Control Administration of the Emergency Department of Pavlodar Region – a scheduled inspection of CHP-2, CHP-3 and Ekibastuz CHP.

“Pavlodar Regional Electric Distribution Company” JSC

In 2012 there were no inspections carried out at “PREDC” JSC.

“Pavlodar District Heating Networks” LLP

- Irtysh Environmental Department of the Environmental Regulation and Control Committee of the Ministry of Environmental Protection of the Republic of Kazakhstan – a scheduled inspection of “PDHN”, LLP PE.

“SEVKAZENERGO”, JSC

- State Institution “Esil Environmental Department of North-Kazakhstan Region of the Environmental Regulation and Control Committee of the Ministry of Environmental Defense of the Republic of Kazakhstan” – an unscheduled thematical inspection of the compliance with the environmental legislation of the Republic of Kazakhstan.

“North-Kazakhstan Regional Electric Distribution Company”, JSC

- Esil Environmental Department of North-Kazakhstan Region of the Environmental Regulation and Control Committee of the Ministry of Environmental Defense of the Republic of Kazakhstan – an unscheduled inspection to reveal the events of exceeding emission limit values;
- State Institution "Environmental Department of North-Kazakhstan Region of the Environmental Regulation and Control Committee of the Ministry of Environmental Defense of the Republic of Kazakhstan" - a scheduled inspection of the compliance with the environmental legislation of the Republic of Kazakhstan.

“Petrodavlovsk District Heating Networks”, LLP

In 2012 there were no inspections carried out at “PDHN”, LLP.

Information on the reports on Environmental Matters

# i/o	Type of information	The organization or the official the information is to be furnished to	The deadline
1.	Form #2-TII air (semiannual, annual) abridgement	Department for Statistics of Pavlodar Region(Pavlodar)	Prior to the 25 th of July, Prior to the 25 th of January
2.	Form #4-OC on current expenses for environmental protection (annual)	Department for Statistics of Pavlodar Region(Pavlodar)	Prior to the 23 rd of February
3.	Form #2-TII utility water (annual)	State Administration “Irtysk Inspection for Water Basin Resource Management and Conservation of the Committee for Water Resources of the Ministry of Agriculture of the Republic of Kazakhstan” (Pavlodar) Ishim basin inspection (Petrodavlovsk)	Prior to the 10 th of January
4.	Form #1BK (water supply and sewer system)	Department for Statistics of Pavlodar Region (Pavlodar)	Prior to the 22 nd of February
5.	The form "Report on hazardous wastes for the year ended" (annual) with a breakdown	Environmental Department of Pavlodar Region(Pavlodar) Esil Environmental Department (Petrodavlovsk)	Prior to the 1 st of March
6.	Environment protection measures	Environmental Department of Pavlodar Region (Pavlodar) Esil Environmental Department (Petrodavlovsk)	Prior to 10 th of January
7.	Report on implementation of environment protection measures	Environmental Department of Pavlodar Region (Pavlodar) Esil Environmental Department (Petrodavlovsk)	Quarterly, Half-yearly, Once a 9-months period; Annually
8.	The report on the Industrial Environmental Control Program of “PAVLODARENERGO”, JSC	Environmental Department of Pavlodar Region, the Ministry of Environmental Protection of the Republic of Kazakhstan	Quarterly, Half-yearly, Once a 9-months period; Annually
9.	The report on the Industrial Environmental Control Program of “SEVKAZENERGO”, JSC	Environmental Department of Environment of North-Kazakhstan Region (Petrodavlovsk)	Quarterly
10.	Inventory of greenhouse gases	Environmental Department of North-Kazakhstan Region (Petrodavlovsk)	Prior to 31 th of March

There are no claims on the reports provided. All reports were submitted in due time.

8. Compliance with the safety and health issues

Social and labour relationships

The main purpose of the Company in social sphere is to enhance social protection of the Company's employees, their family members, non-working pensioners, people retired from the company, and disabled people. Discounts, compensations, and guarantees policies were developed by the company in this regard.

Workers are provided with protection clothes and shoes, sanitizers, personal protective equipment, milk or other equivalent product, and soap, in accordance with current Kazakhstan legislations. Lump sum payments are done at birth of a child, and for the funeral of close relatives.

Summer camps are organized for children of the workers of the company; in Petropavlovsk, parents pay 20% of the cost of the pass. In Pavlodar, the company organized a children's health camp “Electronic”, using the facilities of the holiday center “Energetic”.

Special attention is paid to the programs of diagnostics and medical treatment of the employees, especially operational personnel. Medical examinations are organized annually at the expense of the employer; every day the operational staff undergo obligatory pre-shift medical examination in order to analyze the state of health of employees. Each enterprise of the Company has equipped medical rooms at its disposal; professional medics provide such services as physiotherapy, electrotherapy, and heliotherapy, laser therapy, massage, and the treatment by highly-specialized doctors. In Pavlodar sanatorium-preventorium “Energetic” successfully operates and helps to improve the health of the energy system employees.

In order to socially support workers of the enterprises which have large families, or families of workers with disabled children, the company management provide its workers with financial assistance at the beginning of a school year for each child of a school age. Children of the company's employees receive Christmas presents before the holiday.

The company management pays great attention to the training of its managers, specialists and workers. To improve the educational level of its personnel, the company has an incentive pay scheme, which covers payments for educational leave to the amount of 100% of an average salary/wage, and compensates travel expenses in both directions, if the institution is located outside regional centres. In addition, workers have the opportunity to obtain an interest-free loan to pay for the training.

“SEVKAZENERGO”, JSC issues a newspaper named “Energetic of North Kazakhstan”, and “PAVLODARENERGO”, JSC issues one named “Energetic”, in order to increase the level of corporative culture, sustain the image of the profession, and inform the public about news of the company and the whole industry.

Department of Labor conducts a systematic motion study of the personnel on the plant in order to identify labor productivity reserves, improve equipment utilization, and record working time consumption. Such work helps to identify shortcomings in the organization and sanitary conditions of labor and production, which cause losses or inefficient use of working time. Based on the analysis of motion study results, measures on improvement of the work organization are developed, deadlines and responsible executors are identified and approved by the Company's orders.

Requirements of the Labor Code of the Republic of Kazakhstan regarding public health and labor safety are being fulfilled:

- training of executives and workers responsible for the safe work implementation on occupational health and safety and industrial safety issues, improvement of professional

- skills, and acquisition of adjacent specialties was organized in the company’s training centre;
- certification of workplaces was performed;
 - workers were provided with protection clothes and shoes, sanitizers, and personal protective equipment, in accordance with current standards;
 - contracts on obligatory insurance of the Employer’s Civil Liability in case of employees’ life and health hazard arising out of their employment, and contracts on obligatory insurance of civil liability of owners of the objects, the operation of which is connected with danger of health hazard in respect of the third parties;
 - constant monitoring of working conditions is carried out;
 - preliminary and periodic medical examination of workers is organized;
 - workers’ health improvement is arranged in the sanatorium-preventorium.

Reports on occupational health and safety

#	Type of information (reports) to be furnished	Furnished to	Frequency of reporting
1	Report on traumatism 7-TPZ (traumatism and professional diseases) (annually)	Regional Departments for Statistics	before the 25 th of February
2	Report on traumatism (monthly, quarterly)	“SEVKAZENERGO”, JSC: Administration of Energy Supervision and Control in North-Kazakhstan region; City Administration “Department of Control and Social Protection in North-Kazakhstan region”	before the 10 th day of each month
3	Monitoring of safety and labour protection.	City Administration “Department of Control and Social Protection in Pavlodar Region of the Ministry of Labor and Social Protection” City Administration “Department of Control and Social Protection in North-Kazakhstan region”	As of the 1 st of July, as of the 1 st of January

9. Environmental regulatory and legal framework in Republic of Kazakhstan

In the context of economic activity the Company complies with the requirements of current legislation in the field of environmental protection, regulated environmental By Ecological Code and other regulatory legal acts of the Republic of Kazakhstan.

The list of regulatory and legal acts that are used in the activity of the Ecological Departments

Type of document	Name of document	Number	Effective date	Revised
Constitution	The Constitution	-	30/08/1995	02/02/2011
Code	Labour Code	252-III	15/05/2007	
Law	On Obligatory Environmental Insurance	93-III	13/12/2005	As of 05/07/2012
Law	On Subsoil and Subsoil Use	291-IV	24/06/2010	26/12/2012
Code	Environmental Code of the Republic of Kazakhstan	212-III	09/01/2007	24/12/2012
Code	Water Code of the Republic of Kazakhstan	481-II	09/07/2003	24/12/2012
Code	Land Code of the Republic of Kazakhstan	442-II	20/06/2003	08/01/2013
Code	On Taxes and other Obligatory Payments to the Budget of the Republic of Kazakhstan	99-IV	10/12/2008	06/03/2013
Government Regulation of the Republic of Kazakhstan	On approval of Rules of state accounting for GHG emissions and use of ozone-depleting substances	714	31/05/2012	
Government Regulation of the Republic of Kazakhstan	On approval of Rules of development and approval of standards for maximum permissible GHG emissions and use of ozone-depleting substances	350-II	13/12/2007	10/05/2012
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Wastes Classifier	169-п	31/05/2007	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of a Hazardous Waste Certificate Form	128-п	30/04/2007	

Order of Acting Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules of inclusion of nature management conditions into environmental emissions permits	112-П	16/04/2007	23/07/2009
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of document forms of environmental emissions permits and the Rules of form completion	94-П	30/03/2007	19/03/2012
Standard of the Republic of Kazakhstan	ISO	14001	2006	
Standard of the Republic of Kazakhstan	ISO	19011	2002	
International Standard	ISO	14001	2004	
International Standard	ISO	19011	2011	
Guiding Normative Document	The Guidance on assessment of environmental pollution level with toxic production and consumption wastes	ПНД 03.3.0. 4.01-96	29/08/1997	
Guiding Normative Document	The Order of rationing of generation and allocation of waste products	03.1.0. 3.01-96	29/08/1997	
Building Performance Requirements	Internal water supply and sewerage system of the buildings	4.01- 41-06	2006	2008
Sanitary Rules and Regulations	Sanitary Standards of working with mercury, its compounds and mercury-filled devices	1.10.08 3-94	1994	
State Standard (GOST)	Secondary ferrous metals. General technical requirements	2787- 75	1975	1988
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules of public hearings	135-П	07/05/2007	02/04/2012
Order of Minister of Environmental Protection of the Republic of	On approval of Rules of coordination of Industrial Ecological Control Programs and reporting requirements of	123-П	24/04/2007	25/08/2010

Kazakhstan	the results of industrial ecological control			
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Standard Environmental Activities List	119-п	24/04/2007	
Government Regulation of the Republic of Kazakhstan	On approval of Rules of the organization of liquidation landfill funds	591	10/07/2007	
Government Regulation of the Republic of Kazakhstan	On approval of Technical Regulations “Air Emissions Requirements during the Process of Combustion of Various Types of Fuels in Boilers of CHPs”	1232	14/12/2007	21/07/2010
State Standard (GOST)	Labor Safety Standards. Manufacturing equipment. General safety requirements	12.2.00 3-91	1991	
State Standard (GOST)	Labor Safety Standards. Harmful Substances. Classification and General Safety Requirements	12.1.00 7-76	1976	1990
State Standard (GOST)	Labor Safety Standards. Manufacturing equipment. General ergonomic requirements	12.2.04 9-80	1980	
Law	On Industrial Safety at Dangerous Production Facilities”	314-II	03/04/2002	10/07/2012
Law	On Safety of Chemical Production	302-III	21/07/2007	10/07/2011
Rules	Rules on freight railway transportation	429-I	23/11/2004	
Law	On Rail Transportation	266-II	08/12/2001	24/02/2012
Order of the Agency of the Republic of Kazakhstan on statistics	Instructions on completion of the census report Form #2-TII (air) (annual), “Report on Environmental Protection”	143	20/06/2012	
Order of the Agency of the Republic of	Instructions on completion of Form 2-TII (utility water)	2-Г	24/01/2005	

Kazakhstan on statistics				
Order of the Agency of the Republic of Kazakhstan on statistics	Instructions on completion of the census report Form 4-OC (annual) “Report on current costs of environmental protection, environmental payments, and payments for natural resources”	228	15/08/2011	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the report form on hazardous wastes	164-ө	21/05/2012	
Government Regulation of the Republic of Kazakhstan	On approval of the Rules of use of water supply system and drainage system in community settlements	832	05/06/2009	
Order of the Minister on Emergency Situations of the Republic of Kazakhstan	On approval of normative acts in the field of industrial safety	189	29/10/2008	16/07/2012
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules of GHG and ozone-destructive substance emissions inventorization	348-II	13/12/2007	10/05/2012
Standard of the Republic of Kazakhstan	Environmental Management Systems General Guidelines on principles, systems and means of their functioning	14004	2000	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the Instructions on implementation of the Environmental Impact Assessment of the planned business and other activities when developing preplanning, planning, preproject, and project documentation	240-II	28/06/2007	12/03/2012
Government Regulation of the Republic of Kazakhstan	On approval of Sanitary Rules “Sanitary and epidemiological requirements to water sources and water supply points used for domestic water consumption	104	18/01/2012	

	and drinking, household water supply, places of community water supply, and safety of water bodies”			
Government Regulation of the Republic of Kazakhstan	On approval of Rules for wastewater acceptance into wastewater discharge systems of residential areas	141	28/05/2009	
Government Regulation of the Republic of Kazakhstan	On approval of Rules of waste management program development	403	30/03/2012	
Order of Acting Minister of Environmental Protection of the Republic of Kazakhstan	On approval of limits (allowances) of usage of ozone-depleting substances	131-п	04/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of methods and criteria of preparation of GHG inventarization reports	149-п	10/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of methods of monitoring plans development by entities at the stage of GHG emissions allowance distribution	143-п	10/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules of keeping the State Register of carbon units	147-п	10/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the reporting form for GHG inventarization	145-п	10/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules of monitoring, accounting, and reporting on carbon units of GHG emissions for trading purposes	157-п	14/05/2012	
Government Regulation of the Republic of Kazakhstan	On approval of Rules of granting GHG emissions allowances	584	07/05/2012	

Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules for conversion of units of design mechanisms into allowance units in the field of emissions regulation and GHG absorption	148-П	10/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules for mutual acknowledgement of allowance units and other carbon units based on the international agreements of the Republic of Kazakhstan	153-П	11/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules for preparation, consideration and approval, accounting, reporting and monitoring of internal projects on GHG reduction	150-П	11/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules for development internal projects on GHG emissions reduction and the List of fields and economic sectors to which they can be applied	156-П	14/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules for GHG emissions trading and carbon units trading	151-П	11/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules for standardization of measurements and accounting of GHG emissions	144-П	10/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the Installation Descriptor Form	146-П	10/05/2012	
Order of Minister of Environmental Protection of the Republic of Kazakhstan	The Rules of handling resistant organic pollutants and wastes containing resistant organic pollutants	40-П	24/02/2012	

President of “CAEPCO”, JSC



E.A. Amirkhanov

Vice-President on Productions –

Technical Director of “CAEPCO”, JSC

O.V. Perfilov

Environmental and Social Action Plan of “Central-Asian Electric Power Corporation”, JSC for the year 2012

ESAP – corporate/ main CHPs and distribution companies								
#	Action	Environmental Risks / Liability / Benefit	Legislative Requirement / Best Practice	Investment Needs / Resources (Euros ,000s)	Timetable To be completed by the End of Year	Target and Evaluation Criteria for Successful Completion	Comment	Report
1	<p>Publish a corporate EHS report and make it publicly available (including on the internet). The report to be in compliance with the EBRD's annual reporting requirement, and to include the following information:</p> <ul style="list-style-type: none"> - Key environmental performance indicators (KPIs) - Environmental performance - Greenhouse gas emissions (CO₂) for each plant and Company - Legislative issues, including compliance and fines/penalties - Health and safety performance including information on statistics - social and labor issues 	<p>Ensure that best practice is adopted across the organization and that there is transparency in environmental performance. Reporting of environmental performance to stakeholders</p>	<p>Best Practice and EBRD requirement</p>	<p>Internal resources</p>	<p>2009 - then annually</p>	<p>Publication of the report</p>	<p>EHS report should take into account the problem of future investment plans necessary for good quality of energy and heat delivery to the communities. The report should inform the community on the new procedures for client contacts, community interaction in accordance with the Stakeholder Engagement Plan</p>	<p>The Corporate Report is prepared in accordance with approved sections and published on “PAVLODARENERGO”, JSC, website: http://pavlodarenergo.kz/about/documents/reports/ and “Central Asian Electric Power Corporation”, JSC website: http://www.caepco.kz/page.php?page_id=38&lang=1</p>
	<p>Retrenchment. Develop a retrenchment programme, whenever more than 100 people are to be laid off any subsidiary in one go</p>	<p>Need to ensure appropriate systems are in place when dealing with any staff reductions, and that any reductions are made in a transparent manner to minimize social impacts and provide as much support to staff as possible (including retaining if needed)</p>	<p>EBRD and best practice</p>	<p>Internal</p>	<p>2009</p>	<p>Programme in place</p>	<p>Any major retrenchment needs to be communicated to the Bank at the time of decision making, as well as summarized in the Annual report</p>	<p>The Company developed regulatory documents and adopted the process connected with the termination of the employment contracts, which is based on the possible planned staff reduction. At the moment, within the bounds of adoption of the Integrated Management System (IMS), the business process is being revised, and the process provides for the following:</p> <ol style="list-style-type: none"> 1. Obligatory notification of regional state social protection authorities 2 months prior to reduction. 2. Notification of the employees 1 month prior to the planned reduction. 3. The offer of other vacancies to the redundant, both in the present company and other enterprises of the Group. 4. Possibility of re-skilling to fill vacancies. 5. Creation of temporary work places (for the period of repair works, etc.) and transfer of the redundant to those places. 6. Payment of remuneration in the amount provided for in Labour Code of the Republic of Kazakhstan.

<p>Stakeholder Engagement Programme (SEP). Develop an SEP to address both worker and public stakeholder engagement programmes at the individual sites as well as corporate. Draft prepared by Atkins in January 2009 – to be updated annually by the Company and audited min every 5 years externally</p>	<p>SEP is required for both corporate as well as individual sites, This needs to include a grievance plan (complaints procedures) to allow staff and external stakeholders (public, etc) to voice concerns, opinions etc. Good stakeholder engagement reduce risk of civil unrest and public concern</p>	<p>EBRD</p>	<p>Internal and external</p>	<p>2009</p>	<p>SEP in place updated on a annual basis with summary provided to the Bank in Annual Report</p>	<p>SEP will allow for good public communications program.</p>	<p>The Company has corporate sites: http://www.caepco.kz, http://www.sevkazenergo.kz, http://www.pavlodarenergo.kz, http://www.astanaenergobyt.kz). The following columns can be found on the sites: “Public relations”, “To consumers”, “News” “Questions and answers”, which contain information about tariffs, the order of execution and issue of technical specifications, formation of contracts, and other reference information. Consumers can address their questions, remarks and suggestions. The information is updated every 2-3 days. Within the frameworks of the integrated management system, the Company developed the following:</p> <ol style="list-style-type: none"> 1. The Regulations on informing the public and the Company’s employees; 2. The order of office work procedures; 3. Management of inappropriate products; <p>The above mentioned documents provide all stakeholders with the information and describe actions in case of any external requests (questionnaires KII-7-01(QMS) “Consumer feedback”). In accordance with Law of the Republic of Kazakhstan #272-1 “On natural monopolies...” dated 9 July, 1998, public hearings are held twice a year, with the participation of the council of experts, the consumer rights protection society, cooperatives for apartment owners, mass media, and all stakeholders. Additionally, “PE”, JSC developed the following Documentary Procedures on environmental issues:</p> <ol style="list-style-type: none"> 1. “The order of public engagement, social organizations and mass media interaction concerning environmental issues” DP-10-04-11 (EMS). Trust line telephone numbers are published in mass media, which can be used by the stakeholders to inform on cases of environmental security violation; from time to time the environmental inquiries are carried out. 2. “The order of internal and external communication on environmental issues” DP-10-08-11 (EMS). The information concerning the environmental security violation received from organizations and the public is worked out.
<p>Management systems – ISO, OHSAS, EMAS</p> <p>CHP units (Petropavlovsk and Pavlodar Energo, Ekibastuz CHP) - Develop and implement OHSAS 18001 Health and Safety Management System (EMS). Maintain ISO 14001 certification.</p> <p>Distribution companies: propose the exact timeline for the implementation of</p>	<p>Ensure that best practice is adopted across the organization. External certification to ISO14001 and OHSAS 18801 provides third party assurance of performance and a commitment to continual improvement</p>	<p>Best Practice and EBRD requirement</p>	<p>Internal resources</p>	<p>PTETS - 2010/12 PAVLODAREN ERGO CHP – 2009/2010</p> <p>Distribution companies: 2009 – selection of the contractor for ISO training and preliminary training 2011- implementation</p>	<p>Certification to ISO14001 and OHSAS 18001 both at</p>	<p>PTETS - ISO 14001 certification attained in 2007. The international certification body (company) will be changed every 5 years.</p> <p>PavlodarEnergo CHP: EMS implementation planned by the end of 2008.</p> <p>Distribution companies: EMS implementation needs the uniform group</p>	<p>All subsidiaries of "CAEPCO", JSC received the following certificates:</p> <ul style="list-style-type: none"> - certificate on the Quality Management System ISO 9001:2008; - certificate on the Environmental Management System ISO 14001:2004; - certificate of Occupational, Health and Safety Management System OHSAS 18001:2007. <p>Additionally, “PAVLODARENERGO”, JSC successfully passed recertification audits of ISO 14001:2004 , ISO9001:2008, and OHSAS 18001.</p>

	ISO 14001 Environmental Management System (EMS)				CAEPCO (holding Company) to be certified by 2012		approach, as a result the real deadline for implementation should be in 2011 with the first selection of consultants in 2009	
2	<p>Prepare a formal ESIA (Environmental and Social Impact Assessment) for all future development projects that fall under Annex 1 of EU EIA Directive and National legislation (ie new HV lines above 110 Kv 10 km, any new Boiler plant above 300 MW thermal, any new ash pond above 25 ha)</p> <p>In all distribution companies ESIA will cover projects above the initial limit – proposed limit: more than 15 km of 220 kV lines (or higher voltage), more than 50 km of 110 kV lines or new connectivity contracts of more than 10,000 Gcal/year or new areas supplied with 30 MW, or new lines for more than 3000 new clients covered by Investment Program</p>	<p>To ensure that the proposed projects minimize environmental impacts. The ESIA will ensure that full consultation takes place and that any project will use European BAT standards as well as ensure appropriate stakeholder consultations are undertaken and projects meet Kazakhstan legislation.</p> <p>Distribution companies - current European standards set the initial limit of 15 km of 220 kV power lines for Environmental Impact Assessment. However due to significant social importance of energy and heat distribution, and necessity of assessment of possible consequences Consultant recommend few more precise limits</p>	Best Practice and EBRD requirement	Internal resources	<p>CHPs: 2009 onwards</p> <p>Distribution lines:</p> <p>2009 – for all new 220 kV and new 110 kV lines,</p> <p>2010 – for other investments</p>	<p>Completion of ESIA report and publication of a None Technical Summary (NTS) on the company web site. Provision of a copy of a None Technical Summary to Bank and publishing an NTS on the Company web site</p>	<p>The ESIA will need to include public consultation, an assessment of cumulative environmental impacts from the investments and existing operations, as well as social issues. The ESIA will also need to compare the project with Kazakhstan and EU environmental standards and this information included in the publicly available documentation. The Bank will provide guidance and training on the procedures which should be implemented into the corporate EMS. The Bank as an investor will need to be consulted on the ESIA process prior to public consultation. The NTS will be a short (circa 10 pages) in none technical language summary of the project and how it meets Kazakh and international best practice standards</p>	<p>On the website of the Company non-technical summaries of the investment projects of “PAVLODARENERGO”, JSC (http://www.pavlodarenergo.kz/about/documents/reports/) and “SEVKAZENERGO”, JSC (http://www.sevkazenergo.kz/company/documentation/otcheti/) are published.</p> <p>During the development of investment projects, realization of which may have a direct impact on the environment and public health, the Company develops the “Environmental Impact Assessment” section (EIA). In 2012, conclusions of the State environmental expertise were developed and received on the following documentation:</p> <p>“PAVLODARENERGO”, JSC</p> <ul style="list-style-type: none"> - working draft “Construction of a three-section block-modular fan cooling tower at the existing pool ” of CHP-2 “PAVLODARENERGO” JSC”; - working draft “Construction of the 2nd stage of CHP-2 ash pond of «PAVLODARENERGO” JSC”; - working draft “Reconstruction of the dust extraction plant” of boiler #3 of BKZ160-100F(M) type at CHP-2 «PAVLODARENERGO”, JSC with installation of a battery emulsifier of the II generation”; - working draft “Reconstruction of the dust extraction plant of boiler #2 of BKZ420-120 type at CHP-3 of «PAVLODARENERGO”, JSC with installation of a battery emulsifier of the II generation”; - working draft “Reconstruction of the dust extraction plant of boiler #9 of BKZ-75-39FB type at Ekibastuz CHP of «PAVLODARENERGO”, JSC with installation of a battery emulsifier of the II generation”. <p>“SEVKAZENERGO”, JSC</p> <ul style="list-style-type: none"> - EIA to the Feasibility study for “Reconstruction of Petropavlovsk CHP-2 with the replacement of turbo unit #4 and boiler unit #8”; - working draft “Steam boiler 220-100 #6 (BKZ 220-100-4) (reconstruction)”; - working draft “Steam boiler 220-100 #7 (BKZ 220-100-4) (reconstruction)”; - EIA section to the working draft “Construction of the main equipment repair and modernization preparation shop on the company’s own land lot at the following address: 28 Ya.Gashek street, the city of Petropavlovsk”; - “The high-concentration dust-transmission system with

								<p>the reconstruction of burners for boilers of BVK-220-100-4 and TP-46A types”.</p> <p>All the projects comply with the requirements of Kazakhstani environmental standards; the Company received affirmative conclusions of the State ecological expertise to all of them.</p> <ul style="list-style-type: none"> - After implementation of the above mentioned projects, standards and characteristics of the equipment comply with requirements of the legislation of the Republic of Kazakhstan; particularly, nitrogen oxides were reduced at boilers # 6 and #7 at Petropavlovsk CHP due to the introduction of the three-stage fuel combustion. The boiler units are equipped with stationary gas analyzers for monitoring of pollutant emissions, which measure SO_x, NO_x, CO₂, and dust emissions in flue gases during their continuous operation.
3	<p>Ensure that all new projects, extensions, plant and associated infrastructure are to be designed to meet both Kazak and EU environmental standards.</p> <p>In PTETS, unit no 8 will be reconstructed to meet Kazak standards and will include continuous monitoring systems installed prior to commissioning</p>	<p>To ensure that future projects minimize environmental impacts. The assessment at design stage will ensure that any project will comply as far as practical with European BAT, stakeholder requirements and Kazakhstan legislation</p>	<p>Best Practice and EBRD requirement</p>	<p>Will vary by project.</p>	<p>CHPs: On-going</p> <p>Distribution companies: from 2011 all new heat transmission pipelines should meet EU energy efficiency standards (pre-isolated tubes, proper quality of laying, geotechnical review etc.)</p>	<p>In PTETS: This will include an overview of unit no 8. Unit no 8 will be designed to meet Kazak standards for rehabilitated units in place from 2013 (Decree of the Government of Republic of Kazakhstan from December 14, 2007, # 1232 – Appendix 3 of the Ordinance).</p> <p>All new boilers for which a building permit is to be attained post 1st January 2009, will attain EU Large Combustion Plant Directive standards for existing plants (dust 50 mg/Nm³, Sox 800-400 mg/Nm³ depending on size of boiler)</p>	<p>In accordance with international standard ISO 14001:2004, “PAVLODARENERGO”, JSC implements new projects with characteristics that correspond to the requirements of the “Technical Regulations” approved by the Government Regulation of the Republic of Kazakhstan # 1232 dated 14 December, 2007. The continuous monitoring gas analysis system was implemented on the following boiler units:</p> <ul style="list-style-type: none"> - on boiler units # 2, #5, and #6 at CHP-3; - on boiler units #2, #3, #4, and #5 at CHP-2; - on boiler units # 7, and #9 at Ekibastuz CHP. <p>In 2012 the following work was performed at “Pavlodar District Heating Networks”, LLP:</p> <p>In 2012 according to the Investment Program “PHDN”, LLP constructed 6.3 km of pipeline with the use of foamed polyurethane Insulation.</p> <p>Boiler #8 of “SEVKAZENERGO”, JSC is designed in accordance with Kazakhstani Technical Regulations for installations which enters into force starting from 2013. On the boiler unit the gas analysis system for continuous monitoring of flue gas pollutants will be installed. The reconstruction of boiler units #1 and #9 was executed. In 2012, boilers #6 and #7 were reconstructed. Boilers #1 to #4, #5, and #11 were equipped with variable frequency drives (VFD). Boilers # 1 to #5, 10, and 11 were equipped with environmental emission metering and control devices.</p> <p>In 2012 according to the Investment Program “PHDN”, LLP constructed 2.4 km of pipeline with the use of foamed polyurethane Insulation.</p>	
4	<p>Improve the physical condition of the mazout storage areas</p>	<p>Risks are presented to land, ground and surface waters from chemical storage</p>	<p>Best Practice and EBRD requirement</p>	<p>PTETS: 300 k site investigations</p>	<p>2012</p>	<p>Presentation of management</p>	<p>Plans for each of “PAVLODARENERGO”, JSC stations were developed and are being implemented. “Pavlodar Regional Electric Distribution Company”, JSC has 30 reservoirs for oil</p>	

		<p>areas at both sites, in particular mazout storage. Improved storage of this material will minimize risks. Undertake site assessment by 2012 and base don this develop clean up plant</p> <p>There are 325 tanks in Pavlodar distribution company and app 100 tanks in Petropavlovsk distribution company</p>		<p>PAVLODAR ENERGO HP: 200</p> <p>Pavlodar and Petropavlovsk Distribution plants: 500</p>		<p>plan to EBRD and shareholders and agree action plan to clean up site</p>		<p>storage on its books.</p> <p>At “SEVKAZENERGO” JSC mazut was taken out from some of underground storage areas and transferred to above-ground storage areas. An inventory of all present mazut storage areas available in the territory of the station was carried out, including those taken out of service. The result of the inventory showed that the reservoirs and containers are suitable for further use. There are no leaks and contamination in the territory.</p>
5	<p>Undertake a BAT (Best Available Techniques) Assessment in all CHP units and develop a programme to evaluate the scope for reduction of NOx and sulphur dioxide (SO₂) emissions levels comparable with the Large Combustion Plant Directive (as far as possible) and compliance with Kazak legislation, notably more stringent dust emission from 2013 (phase 1) and SOx emission (phase 2)</p>	<p>The EBRD requires that all new generating assets achieve new plant standards as described by EU Large Combustion Plant Directive. Existing plants should as minimum comply with Kazak standards and a plan be put in place to comply with existing plant standards as described within the EU LCPD Note. Current emissions exceed EU standards in all cases as well as Kazak requirements for new plants</p>	<p>Best Practice and EBRD requirement</p>	<p>Internal resources</p>	<p>PTETS: Develop plan 2012 and submit to shareholders and EBRD. Implement 1st stage by 2013-2016 and 2nd stage by 2020</p> <p>PAVLODAREN ERGO CHP - 2010</p>	<p>Presentation of the report to EBRD representative s, later publication of the summary of the report</p>	<p>A BAT Assessment will set out the scope of any improvement works and the program for implementation. This will include the retro-fitting equipment</p>	<p>“PAVLODAREN ERGO”, JSC completed the installation of battery emulsifiers on all boiler units of CHP-3 and EkiCHP, and on boiler unit #1 of CHP-2 the battery emulsifiers will be installed in 2013. The installation of emulsifiers made it possible to reach the level of emissions of NOx and SO2 required by the Technical Regulations. Actual annual average data for 2012 on ash emissions are equal to 594mg/m³, NOx emissions – 597 mg/m³ and SO2 emissions – 1,043 mg/m³ .</p> <p>“SEVKAZENERGO” JSC completed the installation of battery emulsifiers on all boiler units. Actual annual average data for 2012 on ash emissions are equal to 500mg/m³, NOx emissions – 699 mg/m³ and SO2 emissions – 1,680 mg/m³ .</p> <p>“SEVKAZENERGO” JSC is participating in the project “Cooperation in carbon emissions elimination” together with Hasselt University, University of Leeds, Royal Belgian Intitute of Natural Sciences, and Coordination Center for Climate Change. In November 2012, a draft agreement with Firm “SOFINEX” (Belgium) and Firm “ECOREM” (Belgium) were prepared in order to estimate in 2013 technical, ecological, and economical possibilities to adopt the Best Available Techniques of combustion and burning at the existing coal-fired power plants with the aim to enhance the efficiency of facilities and reduce adverse impact on ambient air quality.</p>
6	<p>In allCHPs: As part of the BAT Assessment develop a plan to limit dust emissions, through combination of new investments and upgrade of existing assets. The plan will set out a road map to attain at first a under 300 mg/Nm³ for the plant (Kazak national standards from</p>	<p>Current emissions exceed EU standards in all cases and given the fuel parameters and local technology EU standards will not be met in the medium to long term. International standards is 50 mg/Nm³, BAT would be in the 20-30 mg/Nm³</p>	<p>Best Practice and EBRD requirement</p>	<p>Internal resources CAPEX tbc</p> <p>Approx. 15-20 mln Euro</p>	<p>Plan by 2012 2010-2012 undertake a BAT Assessment to consider how to attain best international practice emission standards such as EU LCP Directive</p>	<p>Provision of plant and then BAT Study to the lenders. Publication of information on planned investments Achieving emission</p>	<p>Dust emissions are highly visible and all plant worldwide uses dust abatement technology. Dust also can cause respiratory health problems. The Company must address dust emission as a priority, even if neighbouring plants are</p>	<p>For 2015, the Investment Program provides for the installation of titanium emulsifiers of the II generation, which will allow reaching the efficiency of up to 99.4% - 99.6%; further works will be implemented in accordance with the Regulations which will be valid after 2015.</p> <p>At “PAVLODAREN ERGO”, JSC emulsifiers were installed on 13 boiler units out of 22: boilers #2, #3, #4, and #5 at CHP-2; boilers #1, #2, #3, #4, #5, and #6 at CHP-3; boilers #7, #8, and #9 Ekibastuz CHP.</p>

	<p>2013) and then for each stack 100 mg/Nm³ between 2016-2020 (EU Standards under LCP – IPPC benchmarks are for below 50) .</p> <p>The BAT Assessment will review the performance of the new type emulgators vs. ESPs and confirm whether new emulgators or ESP should be installed on all boilers post 2010 at the plant to attain national and EU environmental standards</p>	<p>range.</p> <p>The Company will upgrade the air abatement equipment, however current technology and fuel will not allow EU standards to be met. The plant will need to undertake a Best Available Techniques (BAT) to look at the available technologies that could be applied to the plant.</p> <p>The plan needs to consider replacing the emulgators with ESP (electrostatic precipitators) that have been successfully used at other power station</p> <p>PAVLODARENERGO: Data for CHP-2 gives dust levels in the range 1,014 – 1,712 mg/Nm³. Data for CHP-3 gives dust levels in the range 1,552 – 1,695 mg/Nm³</p>			<p>requirements – i.e. 50-100 mg/Nm³. ToR for this study to be agreed with the lenders.</p> <p>Attain below 300 mg/Nm³ average emissions from CHP by 2013 that will be operational post 2015</p> <p>As a long term aim tend to approach 50-100 mg/Nm³ average on the stack or min 99.8 % efficiency of dust removal</p>	<p>levels</p>	<p>significant sources of pollution.</p> <p>The use of emulgators (wet scrubbers) can be viewed as BAT in terms of availability and reliability as well as effectiveness. The new units should attain below 270 mg/nm³ emission level. . The BAT study will review the performance of the ESPs and confirm whether they meet the BAT definitions</p>	<p>At “SEVKAZENERGO”, JSC the emulsifiers were installed on all eleven boiler units.</p> <p>At “CAEPCO”, JSC the emulsifiers were installed at 24 boiler units out of 33.</p> <p>By the year 2013, taking into account activities undertaken, a new emissions reduction plan will be prepared.</p>
7	<p>In all CHPs:</p> <p>Implementation of continuous emission monitoring systems (CEMS) for all stack emissions.</p> <p>CEMS will be installed on each boiler retrofitted with a new emulgator or ESP starting from 2009</p>	<p>Although legal compliance is generally demonstrable, the current monitoring programmes and techniques do not allow ready comparison with EU standards or other published data. There is no continuous monitoring in place, only periodic monitoring for some key parameters. CEMS will allow active control of emissions rather than reactive</p>	<p>Best Practice and EBRD requirement</p>	<p>PTETS: 200</p> <p>PAVLODAR ENERGO: CAPEX</p>	<p>By 2013 on all boilers at CHPs. Program to be developed as part of BAT Assessment</p>	<p>Commissioning of CEMS at all appropriate sources</p>	<p>All new boiler plant should be installed with CEMS to ensure it meets the reliability, confidence limits and reporting requirements of the LCPD.</p> <p>Existing boiler plant should be fitted with CEMS no later than 2013 to verify that national dust emission levels are met.</p> <p>Whilst this is not a regulatory issue, this is a high priority in order to provide operation data for future design.</p> <p>Specifically this must include SO₂, NO_x, CO and particulates. Water vapour, temperature, oxygen concentration, pressure should be recorded if the sample is</p>	<p>“PAVLODARENERGO”, JSC carried out works on installation and adjustment of automated emission control devices on boiler units # 2, #5, and #6 at CHP-3, boiler units #2, # 3, #4, and #5 at CHP-2;, and boiler units #7 and #9 at Ekibastyz CHP.</p> <p>“SEVKAZENERGO” JSC carried out works on installation and adjustment of automated emission control devices on boiler units #1-6 and # 9-12 at Petropavlovsk CHP-2.</p>

8	<p>In all CHPs: Develop an asbestos management plan aimed at cessation of asbestos usage, removal and disposal. The plan will identify high, medium and low risk asbestos use areas. Stop purchase of asbestos containing products from end of 2009</p>	<p>Improved management of environmental and health and safety issues. Asbestos is present at the CHP. An asbestos review at the sites is therefore recommended, together with the development of asbestos management plans. The plans will include how risks are to be managed as well as a removal strategy</p>	<p>Best Practice and EBRD requirement</p>	<p>Consultancy cots / internal</p>	<p>Assess presence of Asbestos by 2010 Develop a plan by 2010 implement for high risk areas systematically between 2012-20</p>		<p>not dried. Installation and on-going usage of asbestos should cease by 2008. A plan for the removal and disposal of asbestos should be developed by 2010 High risk asbestos use area shall be removed by 2020</p>	<p>Plans for each stations of “PAVLODARENERGO”, JSC were developed and are being implemented. In accordance with approved plans, every year asbestos-containing materials are replaced by basalt-containing materials (basalt mats МБИЭ, thermal insulation wire ШИТЭ-150-Р, vermiterm (thermal insulation fine staff), and mullite-siliceous rolled materials МКРР-130). “SEVKAZENERGO”, JSC developed a step-by-step schedule of decreasing asbestos consumption for the period up to 2020. The Regulations on accounting the time of the employees’s work with asbestos; staff work time logging is organized.</p>
9	<p>In all CHPs: Determine through analysis whether transformer oils contain PCBs</p>	<p>Continued use of PCB-containing transformer oil until the end of its useful life is acceptable. However, long term plans for its phase out should be developed</p>	<p>Best Practice and EBRD requirement</p>	<p>Consultancy</p>	<p>2015</p>	<p>Results of analysis</p>		<p>At purchasing oils the Company necessarily requires a certificate from suppliers which confirms the absence of polychlorinated biphenyls (PCBs) in oils. “PAVLODARENERGO”, JSC In 2012 developed the Plan of equipment inventory in order to determine the presence of PCBs. The equipment was inspected, and technical documentation was reviewed, in order to identify PCB-containing equipment. In accordance with the legislation of Republic of Kazakhstan, the analysis for the PCB presence will be executed by an independent accredited laboratory by December 2014. According to the results of the analysis the transformer oils used by the Company do not contain polychlorinated biphenyls. “SEVKAZENERGO” JSC. The Company’s employees underwent the training dedicated to “Inventarization and safe handling of PCB-containing equipment” under the supervision of the Group RPOON/GEF. The laboratory sampling of existing oils was carried out by the controlling and test center Municipal Utility Service “Oskemen Vodokanal”. According to the results of the analysis the Company received confirmation that there are no PCBs in oils. In 2012 the 1st stage of inventory of the oil-containing equipment was conducted. The following works were fulfilled: 1) the inventory committee was established; 2) the employees occupied in inventory process underwent the training procedure; 3) information on types and quantity of the equipment was prepared; 4) power equipment was checked, identified, and marked; 5) equipment certificates for each item of the equipment were drawn up in accordance with the equipment identification form; 6) after equipment identification numbers allocation the labels with ID numbers were placed on the visible front side of the equipment; 7) The Primary Register containing records on the presence of PCBs in PCB-containing equipment was submitted to the Environmental Department of North-Kazakhstan Region of the Environmental Regulation and Control Committee of the Ministry of Environmental Protection of the Republic of Kazakhstan.</p>

ESAP specific for particular companies								
#	Action	Environmental Risks / Liability / Benefit	Legislative Requirement / Best Practice	Investment Needs / Resources (Euros, 000s)	Timetable To be completed by the End of Year	Target and Evaluation Criteria for Successful Completion	Comment	Report
PETROPAVLOVSK PTETS								
1	Install dust abatement on units in accordance to agreed schedule, namely, on tow boilers each year	Planned implementation of investment program to allow the plant to attain Kazak emissions limits by 2013 and longer term aim to attain international standards for dust emissions	Kazak national requirements and best practice	CAPEX	Timetable of 2 units upgraded per annum.	Attain Kazak national standards for dust) by 2013		For the purpose of implementation of the Action Plan on maximum reduction of environmental emissions, and according to the requirements of the Technical Regulations “The Requirements to environmental emissions resulted from combustion of different types of fuels in boiler units of power plants”, the Company developed the plan on installation of titanium emulsifiers of the II generation on all the boiler units by 2013. The Plan is being fulfilled according to the schedule. As of the 1 st January 2013, the emulsifiers were installed on all eleven boiler units.
2	Reduce the risk of the contamination of the Beloe Lake with oily water	Develop procedure for sampling and install preventative measure (oil traps) to reduce the risk of accidental oil spillage reaching the Beloe Lake	Best practice	Own resources	2012			Analysis of water in Beloe lake is performed twice a month. The absence of oil in the tailrace channel is monitored continuously. Oil catchers are applied on the tailrace channel.
PAVLODARENERGO CHP								
1	Undertake a review at CHP-2 and CHP-3 of the costs of retrofit abatement solutions (plant and other improvement measures) compared with the complete replacement of primary generation and utilities equipment, as the most cost-effective long term strategy to meet both Kazakhstani and EU environmental standards	To develop a strategy to meet both Kazakhstan and EU environmental standards in the most cost effective manner	Best Practice	Internal resources	2010	Publication of report.		“INSTITUTE KazNIPIEnergoprom”, JSC performed report “Concept of CHP-2 reconstruction at “PAVLODARENERGO”, JSC, Almaty, 2011. The following conclusions are based on the results of a comparative analysis: 1) the cost of construction of a new CHP is 15.5% higher than the reconstruction of the existing one; 2) full-scale reconstruction of the main building is practically impossible, taking into consideration the current requirements of technical and environmental safety; 3) it is reasonable to build a new high-technology automated CHP (with the lifetime of at least 30 years) by means of displacement power commissioning and the construction of a main building within the area of the existing site, with gradual withdrawal of obsolete equipment with a glance on the terms of commissioning of the new equipment, taking into account actual increase in consumer’s loads in the area covered by CHP-2. To make a final decision it is necessary to develop a feasibility study, taking into consideration a financial model and competitive energy tariffs of a new CHP.
2	Evaluate further energy efficiency improvement measures. This can be undertaken as part of the BAT assessment and within the BAT assessment budget	Energy efficiency and lower fuel use per MWh will result in a decrease CO ₂ emissions	Best Practice and EBRD requirement	Internal resources	2010	Publication of GHG reduction plan	The current 12 point investment program is aimed at improving generating efficiency at CHP-3 and thereby reducing specific CO ₂ emissions.	Performance of arrangements of the Investment Program for 2007-2013 will lead to the expected decrease of fuel rate for electric and heat energy production by 0.027 kg/KWh and 3 kg/Gcal, respectively.

**Pavlodar Electricity Distribution Company. Petropavlovsk Electricity Distribution Company
 Pavlodar and Ekibastuz Heat Distribution Company. Petropavlovsk Heat Distribution Company**

1	Prepare a detailed energy efficiency improvement program. This should include 15 years program for pre-isolated pipelines installation, program for installation of appropriate heat meters and the program for thermo-vision photos of the main assets for identification of heat losses. This can be undertaken as a part of the investment program approved by anti-monopoly office	Energy efficiency and lower fuel use per a square meter will result in this program. Currently each company has above 40,000 GCal/year extraordinary losses along transmission pipelines. Moreover large heat losses are in consumers properties due to poor thermal insulation of houses – the problem lays in financing of such a way of energy saving	Best Practice and EBRD requirement	Internal resources	2010 – initial actions, preparation of the program, application for acceptance of the program and new rates by local authorities	Publication of energy efficiency program.	Heat-transmitting companies developed the Investment Programms “Development, reconstruction and retrofitting” to reduce extra losses during the period 2010-2016. One of the points of these programms reads as: Reconstruction of transmission (mains) and distribution heat networks with the use of pre-insulated pipelines. This includes a scheduled replacement of heat insulation of mineral wool mats with foamed polyurethane insulation in incombustible covering during restoration of heat insulation of the heating networks transmission pipelines.
2	Implementation of environmental training for all employees with less than 3 years of experience in the company	Due to frequent rotation of the staff it is necessary to provide additional trainings for all employees in scope of their responsibilities in terms of environmental protection, energy efficiency and costumers treatment during energy supply breakdown	Best Practice and EBRD requirement	150	2009/2011 - See comment	Contract of such trainings, reports from participants and evaluation documentation	<p>“Pavlodar Regional Electric Distribution Company”, JSC established the Integrated Management System Department, the staff includes the head of the Department, a leading engineer, an environmental engineer, a quality engineer, and a risk manager.</p> <p>The company developed: the Environmental policy and the company’s aims in the field of environmental protection; list of hazards and risks; tasks and activities were determined to reduce adverse environmental impact. In 2012 “PREDC” JSC was granted certificate confirming the compliance with the international standards ISO 9001, ISO 14001, and OHSAS 18001, issued by the company “TÜV International RUS LLC, Entrepreneurial Group TUV Rheinland / Berlin-Brandenburg” LLC.</p> <p>At “North Kazakhstan Regional Electric Distribution Company”, JSC a responsible employee is appointed, who deals with the environmental issues, i.e. environmental engineer who underwent training and was granted certificates in the following fields:</p> <ol style="list-style-type: none"> 1. Introduction to Quality Management, Environmental Management, and Occupational Management (ISO 9001, ISO 14001, and ISO 18001); 2. Training of internal auditors of the Intergrated Management System (ISO 9001, ISO 14001, and ISO 18001); 3. Quality Management System on the basis of international standards; 4. Meeting the requirements of Ecological Code of the Republic of Kazakhstan in the activity of industrial enterprises. <p>Each Company subdivision has a person responsible for compliance for environmental legislation and production environmental control.</p> <p>In order to improve environmental awareness of the Company’s employees the technical trainings are conducted, which include issues on compliance with the requirements of environmental legislation; the Company took out a subscription for publications on environmental issues, such as “Ecolog NS” and “Ecologicheskij kurier”. Within the frameworks of Environmental Management System the Company has developed the Environmental policy and objectives, the list if environmental issues, the list of hazards and risks, and the emergency plan; the Company determined its tasks and activities to achieve reduction of adverse environmental impact.</p>
3	Prepare the detailed inventory of the area with only one side supply,	Due to severe climatic conditions the Companies have to	Best Practice	40.000 Euro per	May 2010 – the report should be	Publication of the report for the local	The risk concerning electric energy supply is minimal; the consumers’ energy supply is carried out depending on the category of objects, according to the Rules of arrangement of electricity generating plants of the Republic of Kazakhstan. There are three categories of objects: I category includes consumers,

	perform the risk assessment for this areas	secure power supply. Some areas have only one-sided supply and in some cases through very old power lines (over 20 and 30 years old). Any serious breakdown along such a line may cause significant social harm if it happens during a winter		company	presented as an annex to the 2009 financial report for the whole company	authorities plus regulatory office. Discussion of the results within management and supervisory board		in respect of which the interruption of the energy supply may cause hazard to people’s life; it is necessary to supply such consumers with energy from 2 independent reserve sources. II category includes consumers, in respect of which the interruption of the energy supply may lead to mass undersupply of energy; it is recommended to supply such consumers from 2 power sources. The rest of consumers refer to III category, for which one power source is necessary. The Company keeps record of consumers of I and II categories. All the consumers of I category conform to norms; consumers of II category which do not conform to norms are registered, and the company takes measures to create power reserves. Heat transmission companies in their activities follow The Rules of technical exploitation of electric power plants and networks and International Building Code (IBC 4.02-02-2004 “Heat Networks”). There are three categories of consumers: I – objects in respect of which the interruption of the energy supply is intolerable; II – objects in respect of which the temperature reduction is allowable but not more than 54h of breakdown elimination. III – all other objects. There is a scheme of temporary heat energy supply from operating CHPs available in case of breakdown. All the consumers which do not conform to the Technical Regulations are registered. If a feed network is available, temporary transfer is employed. The Company take measures to properly supply consumers with heat energy and minimize their risks.
4	Verification of the contractors for old transformers and equipment utilization. Develop the certification of the utilization technologies	Improved management of environmental and H&S issues in the region. Old electric devices require special procedures for utilization and the audited Companies are the largest producers of such wastes in the region. In accordance with Best Practice the way of utilization of these devices should be controlled. The audited plans shall include how risks are to be managed as well as a waste removal strategy	Best Practice	30	See comment		<p><u>Electric energy distribution companies</u> carry out repairs of out-of-service transformers using their own resources at the repair facilities of the industrial overhaul plant; after that repaired transformers are repeatedly used in operation. Utilization of unfit equipment is not carried out, as soon as metal scrap is used for repair purposes.</p> <p><u>Heat-transmitting companies.</u> In accordance with a requirement of ecological code of the Republic of Kazakhstan, the company developed a business process for utilization of mercury-containing lamps. Within the framework of the business process: the movements of mercury-containing lamps are registered (appointment of persons responsible for replacement and storage of new and used mercury-containing lamps); storage conditions of mercury-containing lamps are provided in accordance with current normative documents; the company concluded a contract “On acceptance and demercurization of used mercury-containing lamps”. Under that contract, acceptance and demercurization of used mercury-containing lamps is carried out by special organizations providing services on acceptance and disposal of solid domestic and industrial wastes. The company submits annual reports:</p> <ul style="list-style-type: none"> - to Environmental Department of the Ministry of Environmental Protection of the Republic of Kazakhstan on hazardous wastes; - on ambient air protection in Form 2-TII air; - on the Industrial Environmental Control Program; - to Regional Statistics Departments “On technical costs of environmental protection” – report in form 2-TII air. <p>Every quarter the company submits a report on fulfillment of the Environmental Action Plan to regional Departments of the Ministry of Environmental Protection of the Republic of Kazakhstan.</p>	
5	Stakeholder Engagement Programme (SEP). Develop an SEP to address both worker and public stakeholder engagement programmes at the individual sites as well as corporate. Draft prepared by Atkins in January 2009 – to be updated annually by the	SEP is required for both corporate as well as individual sites, This needs to include a grievance plan (complaints procedures) to allow staff and external stakeholders (public, etc) to voice concerns, opinions etc.	EBRD	Internal and external	2009	SEP in place updated on a annual basis with summary provided to the Bank in Annual Report	SEP will allow for good public communications program	<p>The Company has corporate sites: http://www.caepco.kz, http://www.sevkazenergo.kz, http://www.pavlodarenergo.kz, http://www.astanaenergobyt.kz. The following columns can be found on the sites: “Public relations”, “To consumers”, “News” “Questions and answers”, which contain information about tariffs, the order of execution and issue of technical specifications, formation of contracts and other reference information. Consumers can address their questions, remarks and suggestions. The information is updated every 2-3 days.</p> <p>Within the frameworks of the integrated management system, the Company developed the following:</p> <ul style="list-style-type: none"> - The Regulations on informing the public and the company’s employees; - The order of office work procedures; - Management of inappropriate products;

Company and audited min every 5 years externally	Good stakeholder engagement reduce risk of civil unrest and public concern					The above mentioned documents provide all stakeholders with the information and describe actions in case of any external requests (questionnaires KPI-7-01(QMS) “Consumer feedback”). In accordance with Law of the Republic of Kazakhstan #272-I “On natural monopolies...” dated 09.07.1998, public hearings are held twice a year, with the participation of the council of experts, the consumer rights protection society, cooperatives for apartment owners, mass media, and all stakeholders.
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President of “CAEPCO”, JSC

E.A. Amirkhanov

Vice-President on Productions – Technical Director of “CAEPCO”, JSC

O.V. Perfilov