



Corporate report
on Environmental and Social Action Plan
of «Central-Asian Electric
Power Corporation», JSC
for 2013

Almaty, 2014

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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 united Policy on quality, environment, professional and labor safety was developed and approved in “PAVLODARENERGO” JSC (10.06.2013) and in “SEVKAZENERGO” JSC (17.06.2013). The Policy 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.

Acquaintance with the environment policy was implemented at the enterprises of the Company 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 fundamental principles of the Environmental policy are the following:

- recognition of the constitutional human right on healthy environment;
- 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;
- 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;
- compliance with the requirements of legislative base of the Republic of Kazakhstan, international standards ISO 9001, ISO 14001, OHSAS 18001, ISO 17025 and ISO 5001;
- openness and availability of information on the activities and achieved results in the sphere of management systems, including this policy, for all interested parties;
- providing the fullness and completeness of the management systems within the planning and implementation of amendments in the management system;
- promulgation of the documentation, issued within the frames of ESAP to the personnel, permanent training of the Company’s personnel with the aim of its activity, set Policy and procedures.

Top management of the Company 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”) conducted the first supervisory audit of the quality and environment management systems to confirm the compliance with requirements of ISO 9001:2008 and ISO 14001:2004 international standards, and the second supervisory audit of professional and labor safety to confirm the compliance with the requirements of OHSAS 18001-2007 international standard.

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 18001:2007:

- 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

The certification body (“TÜV Rheinland InterCert”) conducted the first supervisory audit of the quality and environment management systems to confirm the compliance with requirements of ISO 9001:2008 and ISO 14001:2004 and OHSAS 18001-2007 international standards.

At the end of the audits “Pavlodar Regional Electric Distribution Company”, JSC received the certificates ISO 9001:2008 and ISO 14001:2004, and OHSAS 18001:2007:

- certificate on the Quality Management System ISO 9001, registration #75 100 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 18001:2007, registration #OC-4870-0024, valid from 10.07.2012 to 09.07.2015.

“Pavlodar District Heating Networks”, LLP

The certification body (“TÜV Rheinland InterCert”) conducted the first stage of supervisory audit of the quality and environment management systems to confirm the compliance with requirements of ISO 9001:2008 and ISO 14001:2004 and OHSAS 18001-2007 international standards.

At the end of the audits “Pavlodar District Heating Networks”, LLP received the certificates ISO 9001:2008 and ISO 14001:2004, and OHSAS 18001:2007:

- certificate on the Quality Management System ISO 9001:2008, registration #75 100 70461, valid from 09.08.2012 to 08.08.2015;
- certificate on the Environmental Management System ISO 14001:2004, registration #OC-4870-0043, valid from 19.12.2012 to 18.12.2015; and
- certificate on the Occupational, Health and Safety Management System OHSAS 18001:2007, registration #OC-4870-0028, valid from 28.06.2012 to 27.06.2015.

“SEVKAZENERGO”, JSC

The certification body (“TÜV Rheinland InterCert”) conducted the second supervisory audit of the quality and environment management systems to confirm the compliance with requirements of ISO 9001:2008 and ISO 14001:2004 and OHSAS 18001-2007 international standards.

At the end of the audits “SEVKAZENERGO”, JSC confirmed the certificates:

- certificate on the Quality Management System ISO 9001:2008, registration #75 100 70429 Moscow, valid from 01.08.2011 to 31.07.2014;
- certificate on the Environmental Management System ISO 14001:2004, registration #75 110 0505 Brussels, valid from 07.09.2011 to 06.09.2014;
- certificate on the Occupational, Health and Safety Management System OHSAS 18001-2007, registration #OC-4870-0010 Moscow, valid from 30.07.2011 to 29.07.2014.

“North-Kazakhstan Regional Electric Distribution Company”, JSC

The certification body (“National Center of expertise and certification”, JSC) conducted a certification audit of the Integrated Management System for compliance with ISO 9001:2008, ISO 14001:2004, and OHSAS 18001: 2007.

At the end of the audits “North-Kazakhstan Regional Electric Distribution Company”, JSC received the certificates:

- certificate on the Quality Management System ISO 9001:2008, registration # KZ2710318.07.03.09113, valid from 11.05.2012 to 11.05.2015;
- certificate on the Environmental Management System ISO 14001:2004, 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 18001:2007, 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 14001:2004 and OHSAS 18001-2007 international standards and the second supervisory audit for the compliance with the requirements of ISO 9001:2008 international standard.

At the end of the audits “SEVKAZENERGO”, JSC confirmed the certificates:

- certificate on the Quality Management System ISO 9001:2008, registration # 75 100 70437, valid from 20.06.2011 to 19.06.2014;
- certificate on the Environmental Management System ISO 14001:2004, registration #75 110 0558, valid from 08.10.2012 to 07.10.2015;
- certificate on the Occupational, Health and Safety Management System OHSAS 18001-2007, 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 was conducted in all “CAEPCO”, JSC subsidiaries for compliance with the requirements of ISO and OHSAS international standards. The general analysis of the implementation and functioning of the Quality Management, Environmental Management, and Occupational, Health and Safety Management programs was performed. Based on the results of conducted analysis the decisions on the development of the integrated management system at the enterprises are made.

3. Key environmental indicators of the Company for 2013

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 2013 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	67,930	49,297	42,186	31,551	110,116	80,848
Coal ash (nonorganic dust 70-20% silica)	12,435	9,308	5,752	4,916	18,187	14,225
Nitrogen dioxide	17,611	9,892	5,076	5,046	22,688	14,938
Nitric Oxide	2,859	1,629	825	820	3,684	2,449
Sulfur dioxide	32,100	26,238	26,711	17,448	58,812	43,686
Carbon monoxide	2,790	2,109	3,810	3,318	6,601	5,427
Other	133	120	11	4	145	124

Reported data of “PAVLODARENERGO”, JSC CHP for 2013 (tons)

Emissions of air pollutants	CHP-2		CHP-3		Ekibastuz CHP		“PE”, JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	11,543	8,029	45,077	33,478	11,309	7,790	67,930	49,297
Coal ash	1,422	1,407	6,904	5,483	4,108	2,419	12,435	9,308
Nitrogen dioxide	2,950	1,547	13,039	7,246	1,623	1,100	17,611	9,892
Nitric Oxide (NOx)	479	251	2,117	1,177	263	200	2,859	1,628
Sulfur dioxide (SO2)	6,294	4,482	21,002	18,065	4,804	3,690	32,100	26,238
Carbon monoxide (CO)	369	315	1,958	1,459	464	335	2,790	2,110
Other	30	27	57	47	47	46	134	120

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 2013 (mg/Nm3)

Concentration of emissions	Contents, mg/Nm3 for $\alpha = 1,4$					
	CHP-2 PE		CHP-3 PE		Ekibastuz CHP PE	
					MPE	Actual
Coal ash	670-870	408	400	324	1,055	553

Nitric Oxide (NO _x)	570	547	650	544	553	485
Sulfur dioxide (SO ₂)	2,000	1,087	2,000	1,100	1,264	926
Carbon monoxide (CO)	85	81	97	86	310	196

Reported data on concentration of emissions of “SEVKAZENERGO”, JSC for 2013 (mg/Nm³)

Concentration of emissions	Contents, mg/Nm ³ for $\alpha = 1,4$	
	MPE	Actual
Coal ash	458	290
Nitric Oxide (NO _x)	616	428
Sulfur dioxide (SO ₂)	2,677	1,904
Carbon monoxide (CO)	388	216

Reported data of Electric Distribution Companies of “CAEPCO”, JSC for 2013 (tons)

Emissions of air pollutants	“PREDC”, JSC		“NKREDC”, JSC		“CAEPCO”, JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Total	22.33	5.198	14.74	12.53	37.07	17.728
Mineral Oil	0.372	0.371	0.00	0.00	0.372	0.371
Nitrogen dioxide	0.402	0.087	0.14	0.08	0.542	0.167
Nonorganic dust 70-20% silica	3.576	1.117	5.53	5.53	9.066	6.607
Sulfur dioxide	1.163	0.263	0.04	0.04	1.203	0.273
Carbon monoxide	8.635	1.362	0.38	0.38	9.015	1.592
Other	8.182	1.998	8.65	8.65	16.832	8.718

The Company’s Enterprises did not exceed the maximum permissible emissions in 2013.

Reported data of “Pavlodar District Heating Networks”, LLP for 2013 (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	0.016	0.016	0.032	0.032
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	0.218	0.218	0.385	0.385

Reported data of “Petrovsk District Heating Networks”, LLP for 2013 (tons)

Emissions of air pollutants	Petrovsk District Heating Networks	
	Limit	Actual
Total, including	4.706	4.174
Fluorochemical	0.001	0.001
Nitrogen dioxide	0.123	0.116
Iron II oxide	0.3452	0.283
Manganese and its compounds	0.020	0.018
Carbon monoxide	0.369	0.328
Other	3.847	3.428

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.

For monitoring of greenhouse gases there is an accounting method used, which provides the accounting of emissions from the normal (regular) production activity, special practice (pre-commissioning activities, process break-offs, repair and technical service) and emergency situations. The accounting of greenhouse emissions was conducted in accordance with administrative regulatory documents – Methodological guidelines for the accounting of GHG emissions from CHPs and boiler houses, Methodological guidelines for accounting of GHG emissions from enterprises of vehicle enterprises, approved by the Order of the Ministry of Environmental Protection of the Republic of Kazakhstan dated 05.11.2010 # 280-P. The assessment of emissions from coal and mazut combustion is conducted applying the methods of level 3.

“PAVLODARENERGO” JSC

In 2013 “PAVLODARENERGO”, JSC produced 3,534 million kW-hr of electric energy and 4.3 million Gcal of heat energy. 3,553 thousand tons of Ekibastuz coal and 6.9 thousand tons of mazut were used for energy production. 5,294,838 tons of CO₂ was produced from coal and mazut combustion for 2013.

“SEVKAZENERGO” JSC

In 2013 “SEVKAZENERGO”, JSC produced 2,603 million kW-hr of electric energy and 1.8 million Gcal of heat energy. 2,463,155 thousand tons of Ekibastuz coal and 2.6 thousand tons of mazut were used for energy production. 3,722,838 tons of CO₂ was produced from coal and mazut combustion for 2013. The amount of produced CO₂ for 2013 (taking into account vehicles and emissions, produced from propane-butane compound) is 3,723,659.884 tonnes.

Emissions of greenhouse gases for 2013

	CO ₂	CH ₄	N ₂ O	Perfluoro carbons	Total

“PAVLODARENERGO”, JSC total, including:	5,294,839	888,6	25.776	4.9	5,321,503
CHP-2	958,034	158,8	4.613	-	962,806
CHP-3	3,597,773	597,0	17.418	-	3,615,788
Ekibastuz CHP	739,032	132,7	3.745	4.9	742,910
“SEVKAZENERGO”, JSC PCHP-2	3,723,660	854,8	8.786	-	3,733,301
Total “CAEPCO”, JSC	9,018,499	1,743.4	34,562	4.9	9,054,809

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 2013, (tons)

Wastes	“PAVLODARENERGO”, JSC		“SEVKAZENERGO”, JSC		“CAEPCO”, JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Ash slags	1,542,560	1,497,890	1,150,619	1,024,094	2,693,179	2,521,984

Including CHPs of “PAVLODARENERGO”, JSC (tons)

Wastes	CHP-2		CHP-3		Ekibastuz CHP	
	Limit	Actual	Limit	Actual	Limit	Actual
Ash slags	288,075	256,040	1,032,136	1,019,711	222,349	222,139

The Company Enterprises did not exceed the maximum permissible ash slags emissions in 2013.

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 for CHP-2, CHP-3 and ECHP to the amount of KZT 2,249,525 thousand, including actions for 2013 to the amount of KZT 803,610 thousand. The actions to the amount of KZT 1,325,841.8 thousand were performed in 2013.

The main actions include:

- Construction of new ash dump at CHP-2; the cost of work made KZT 379,990 thousand;
- reconstruction of the dust extraction plant on boiler unit #1 at CHP-2 with installation of battery emulsifiers of the II generation; the cost of works made KZT 131,178 thousand;
- reconstruction of boiler unit BKZ # 6 at ECHP with erection of emulsifiers of the II generation; the cost of work made KZT 100,588 thousand;
- installation of automatic devices for control of composition of fire gases at boilers of CHP-2, CHP-3; the cost of work made KZT 78,840 thousand;
- construction of the second stage of ash dump at ECHP – the cost of work made KZT 23,500 thousand; obtaining quotas for emissions of GHG for CHP-2, CHP-3, ECHP – the cost of work made KZT 15,462 thousand; repair of sluice-discharge pipeline at CHP-3 – the cost of work made KZT 12,419 thousand;
- construction of new ash dump at CHP-3; the cost of work made 5,994 thousand.

“Pavlodar Regional Electric Distribution Company”, JSC

To minimize the impact of production processes of the enterprises “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. 15 actions were planned for implementation in 2013; out of them, 10 were fully implemented and amounted to KZT 89,953 thousand.

The main actions include:

- substitution of oil-switches with sulphur hexafluoride switch; the cost of work made KZT 84,018 thousand;
- collection of waste with its further removal from the plant's territory to authorized landfills; the costs made KZT 3,454 thousand;
- delivery of utilized mercury-containing lamps for demercurization; the costs made KZT 40 thousand;
- planting of greenery (trees and bushes), planting of new lawns and flowerbeds; the costs made KZT 20 thousand.

“Pavlodar District Heating Networks”, LLP

The Company developed the environment protection actions for 2013, which were approved by authorized body of Environment Protection to the amount of KZT 366 thousand. In 2013 all planned actions were fully implemented to the amount of KZT 2,018 thousand.

The main actions include:

- planting of greenery (the payment of compensational cost was made for the trees, wrecked during the ground works); the cost of work made KZT 1,693 thousand;
- sanitary cleaning of territories of Central Heat Point, transmission and distribution networks (territories the company is responsible for) from the garbage; the costs of work made KZT 109 thousand.
- rehabilitation of of disturbed urban land after conducting of current and capital repairs at CHPs; the cost of work made KZT 73 thousand;
- cleaning of water conduit and sewage wells; the cost of work made KZT 67 thousand;
- current repair of dust-exhaust system; the cost of work made KZ 21 thousand;
- cleaning of walls of ventilation systems of stationary welding stations from suspended matters and sediments – KZT 11 thousand.

“SEVKAZENERGO”, JSC

“SEVKAZENERGO”, JSC developed environmental activities for 2013-2014 to the amount of KZT 6,497,404 thousand and had them approved by the Ministry of Environmental Protection and Water Resources. In 2013, 13 environmental activities were planned to the amount of KZT 3,247,743 thousand. All the activities were carried out in full scope to the amount of KZT 3,283,243 thousand.

The main actions include:

- acquisition of modern equipment, substitution and reconstruction of the main equipment, which provide effective cleaning, utilization, neutralization, suppression and processing of polluting substances in gases, produced at the resources of emissions – KZT 2,999,895 thousand;
- implementation of activities for minimizing the emissions of GHG – KZT 221,259 thousand;
- planned repairs: ash-pump house, central pump house, ash pumping system, cleaning facilities – KZT 22,303 thousand;
- development of environment projects, verification and validation of reports – KZT 12,787 thousand;
- repair of worn components of dust extraction plants – KZT 21,618 thousand;

- repair of ash pond dykes – KZT 6,481 thousand; recultivation of exhausted ash dumps – KZT 5,775 thousand;
- certification of power saving management system – KZT 3,189 thousand;
- conducting the productive environment control – KZT 2,970 thousand;
- conducting the supervisory audit on ISO 14001 – KZT 2,445 thousand;
- control of CO₃ (PCBs) presence at the territory, and if necessary, neutralization and liquidation – KZT 2,443 thousand;
- planting of greenery at the territory of enterprise – KZT 224 thousand;
- informing the public about the impact of enterprise activities to the environment – KZT 30 thousand.

“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 2013, it was planned to spend KZT 269 thousand for environmental protection. All activities were carried out in full scope to the amount of KZT 207 thousand.

The main actions include:

- gardening and landscaping; the costs made KZT 190 thousand;
- subscription to environmental publications, which cost KZT 10 thousand;
- dust collecting equipment repair and removal of dust; the costs amounted to KZT 7 thousand;

“Petropavlovsk District Heating Networks”, LLP

The Environmental activities for 2010-2014 to the amount of KZT 96 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 2013 all planned actions were fully implemented to the amount of KZT 15,9 thousand (subscription to the newspaper “Ekolog-NS”).

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 2014 for CHP-2 and CHP-3. 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. The estimated cost of works on CHP-3 ash pond – KZT 2,5 billion, CHP-2 ash pond – KZT 2,8 billion, and Ekibastuz CHP ash pond – KZT 0,3 billion (will be specified after project implementation).

Measures to reduce the negative environmental impact

- All boilers are equipped by battery emulsifiers of the II generation with performance coefficient 99,5% at CHP-2, CHP-3 and ECHP of “PAVLODARENERGO” JSC. The efficiency of cleaning according to the reporting data for 2013 related to CHP-2 made in average 99,53%. Execution of this activity for the last 5 years let to reduce the total volume of emissions of polluting substances from 65,9 thousand tons to 49,3 thousand tons; the annual volume of dust from 29,9 thousand tons to 9,3 thousand tons; the concentration of dust in fire gases from 1978 mg/nm³ to 371 mg/nm³, as well as to reduce the ultimate emission volumes totally;
- modernization of boiler units in order to change a combustion mode and decrease NO_x emissions (started in 2009);
- reconstruction of boiler unit St. # 4 of CHP-3 with substitution of air heater cube with the aim of prevention of environment pollution;
- 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 at all boiler units of CHP-3, CHP-2.

“SEVKAZENERGO”, JSC

Measures to reduce the negative environmental impact

- completion of the installation of titanium emulsifiers of the II generation at all 11 boiler units by Y.A. Panarin construction. The actual coefficient of fire gases cleaning after emulsifiers installation, reached 99,5% instead of 96,8%. Execution of this activity for the last 5 years let to reduce the total volume of emissions of polluting substances from 42,5 thousand tons to 31,5 thousand tons; the annual volume of dust from 20,7 thousand tons to 4,9 thousand tons; the concentration of dust in fire gases from 1284 mg/nm³ to 290 mg/nm³, as well as to reduce the ultimate emission volumes totally;
- modernization of boiler units with tertiary air blast in order to change a combustion mode and decrease NO_x emissions. In 2013 the mode of tertiary air blast is set at boilers # 6,7,9-11, which provided reduction of NO_x emissions to 430 mg/nm³, in comparison with data of 2012 – more than 600 mg/nm³;
- application of clarified water, which has basic reaction, and repeatedly given from the ash dumps to emulsifiers of boilers chemically compounds SO_x into insoluble compounds and reduces the emissions of these oxides by 10-15%;
- all boiler units are equipped by the devices for accounting of NO_x, SO_x, CO₂, ash with the aim of control of emissions to the environment;
- substitution of drainage pumps # 1,2 was executed; repair of ash-pump house;
- substitution of four big and nine small oil-coolers of turbine generator buildings;
- installation of booms at wasteway of B.Beloe lake.

Regional Electric Distribution Companies (“PREDC” JSC and “NKREDC” JSC)

The main activities for energy saving, implemented in financing volume in amount of KZT 302 million as for NKREDC and KZT 275,905 million as for PREDC:

- substitution of open wire with self-supporting insulated wire within the city and region extending 33,2 km (to the amount of KZT 99 million) as for NKREDC and 14,6 km (to the amount of KZT 38,215 million) as for PREDC;
- implementation of Automatic System for Commercial Accounting of Power Consumption (ASKUE) within the wholesale market at 15 spots of accounting (to the amount of KZT 66 million) as for NKREDC, and at 86 spots of accounting (to the amount of KZT 130 million) as for PREDC;
- implementation of ASKUE within the retail market (household consumer) at 2,177 spots of accounting of the city (to the amount of KZT 138 million) as for NKREDC, and at 840 spots of accounting of the city (to the amount of KZT 44,2 million) as for PREDC;
- execution of reconstruction of mineral oil facilities of NKREDC to the amount of KZT 20 million, which let to reduce the negative impact to the environment (incl., to soil), and to prevent the accidental release of oil.

As the result of these activities of investment program, the principal economic impact was achieved – reduction of normative technical losses as for NKREDC by 28,4 million kWh or by 2,3%, the actual interest of losses made 11,2% instead of approved 13,5%. As for PREDC reduction of normative technical losses made 8,7 million kWh, the actual interest of losses made 9,24% instead of approved 9,46%.

District Heating Companies (“Pavlodar DHN” LLP and “Petropavlovsk DHN” LLP)

The following activities were executed:

- reconstruction of transit pipelines using isolated pipeline. Economic impact of this project is the reduction of heat losses at the sites being reconstructed, sales gain of heat power, as well as absence of necessity to substitute heat-insulating constructions during the whole period of pipeline operation. Within the frames of this project in 2013 3,6 km of pipeline was substituted (to the amount of KZT 462 million) as for Petropavlovsk DHN and 0,8 km of pipeline (to the amount of KZT 347 million) as for Pavlodar and Ekibastuz DHN;
- rehabilitation of heat-insulating constructions of transit pipeline using urethane foam insulation (PU foam). Efficiency of this type of heat insulation is reflected by the reduction of background heat losses at the pipeline sites being reconstructed, as well as by significant increase of the termination of operation of heat-insulating construction. Within the frames of this project in 2013 1,3 km of pipeline was substituted (to the amount of KZT 15,4 million) as for Petropavlovsk DHN and 2,9 km of pipeline (to the amount of KZT 52,8 million) as for Pavlodar and Ekibastuz DHN.

As for the results of 2013, actual losses in Petropavlovsk city made 28,56%, which is for 2,48% less than level of 2012; as for Pavlodar and Ekibastuz in average the losses made 31,7%, which is for 3,3% less than in 2012 (incl. reduction of above-standard losses for Pavlodar from 8,1% to 2,1%).

6. Regulations of the Company’s environmental activities for 2013

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 26.04.2013 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” #5-19/1166-1 dated 26.04.2013;
- 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#4000411 series dated 03.03.2014. The insurance policy is valid up to 09.03.2015;
- 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 2013, and to dispose the production and consumption wastes in the amount of 1,542,685 tones in 2013;
- permit #S-12-7 #0000017 dated 10.06.2013 for emissions into the environment for 2013, giving the right to “PAVLODARENERGO” JSC to emit pollutants in 2013 during the construction of cooling tower of CHP-2 – 0,0151 tons;
- permit #S-12-7 #0000019 dated 01.07.2013 for emissions into the environment for 2013, giving the right to “PAVLODARENERGO” JSC to emit pollutants in 2013 during the construction of plantwide collector DU 1000 #2 at CHP-3 – 1,56 tons;

- permit #S-12-7 #0002152 dated 15.07.2013 for emissions into the environment for 2013, giving the right to “PAVLODARENERGO” JSC to emit pollutants in 2013 during the development of clay materials at the sites “Kuat” and “Zhili su” – 20,5 tons;
- 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);
 - Passport of installation of ECHP of “PAVLODARENERGO” JSC #S-80-2013 dated 26.08.2013;
 - Passport of installation of CHP-2 of “PAVLODARENERGO” JSC #S-86-2013 dated 09.09.2013;
 - Passport of installation of CHP-3 of “PAVLODARENERGO” JSC #S-87-2013 dated 09.09.2013;
 - Passport of installation of CHP-3 of “PAVLODARENERGO” JSC #S-80-2013 dated 26.08.2013 (boiler unit # 1 BKZ-420-140);
 - Certificate for emissions of GHG for ECHP of “PAVLODARENERGO” JSC series CC # 000080 dated 26.08.2013;
 - Certificate for emissions of GHG for CHP-2 of “PAVLODARENERGO” JSC series CC # 000086 dated 10.09.2013;
 - Certificate for emissions of GHG for CHP-3 of “PAVLODARENERGO” JSC series CC # 000150 dated 09.12.2013;
 - “Reconstruction of dust extraction plant of boiler #1 BKZ-160-100(M) at CHP-2 with installation of battery emulsifiers of the II generation” (conclusion # KZ KZ12VCY00002196 dated 23.12.2013);
 - “Draft of industrial development of clay materials at the sites Kuat and Zhili Su, located in the North industrial zone of Pavlodar for the purposes of “PAVLODARENERGO” JSC” (conclusion # 12/1-15/IOJI-II-320 dated 04.06.2013);
 - “Pavlodar CHP-3. Expansion of booster station” (conclusion # KZ78VCY00001590 dated 27.11.2013);
 - “Pavlodar CHP-3. Warming center in gerade yard neck of shop # 13” (conclusion # KZ46VCY00001584 dated 27.11.2013);
 - “Pavlodar CHP-3. Annex to the building of stockpile” (conclusion # №KZ240VCY00001595 dated 27.11.2013);
 - “Plantwide collector DU 1000 #2 with construction of CSBM for CHP-3 of “PAVLODARENERGO” JSC (conclusion # 5-16/129 ot 11.01.2013).

“Pavlodar Regional Electric Distribution Company”, JSC

- 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;
- 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;
- 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 disposal of production wastes and consumption of “PREDC” JSC, approved on 28.08.2013 by the Department of Environmental protection of Pavlodar district. Conclusion of the state environmental expertise on the project “Regulations for disposal of production wastes and consumption of “PREDC” JSC #12/1-15/ЮЛ-Б-439 dated 28.08.13;
- conclusion of state ecological expertise on the project “Reconstruction of PS “Promyshlennaya” construction of ORU 220 kV” №12/1-15/ЮЛ-Б-244 dated 20.05.2013;
- conclusion of state ecological expertise on the project “Reconstruction of substation 110/10-10 “Zapadnaya-Gorodskaya” Pavlodar” №12/1-15/ЮЛ-Б-355 dated 18.06.2013;
- conclusion of state ecological expertise on the project “Reconstruction of relay protection LEP-110 kV # 105, 106 CHP-2” №12/1-15/ЮЛ-Б-395 dated 15.07.2013;
- conclusion of state ecological expertise on the project “Reconstruction of substation 110/10-10kV “Leninskaya” № 12/1-15/ЮЛ-Б-414 dated 24.07.2013;
- conclusion of state ecological expertise on the project “Reconstruction of VL 35 kV #74 PS “Kovalevka” – PS “Bogatir” 110/10-10kV “Leninskaya” № KZ44VDC00001801 dated 14.11.2013.

“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 tons in 2012, 1.3657226 tons in 2013, 1.3657226 tons in 2014, and 1.3657226 tons 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

- environmental Impact Assessment of “SEVKAZENERGO Petropavlovsk” LLP for 2009-2013. Conclusion of the State ecological expertise on the project of EIA for “SEVKAZENERGO Petropavlovsk” LLP № 06-03-01-18/7078 dated 27.08.2009;
- 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;
- certificate for emissions of GHG dated 25.11.2013 # 000144;
- 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 tons, discharge wastewaters in the amount of 11,204.663 tons, 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 environmental emissions for “SEVKAZENERGO”, JSC for 2013 (construction of production unit, preparation for repair and modernization of the main equipment at own land area for 2013) #0003836 dated 03.04.2013 providing the right to produce emissions in the amount of 3.516874 tons in 2013;
- permit for environmental emissions for “SEVKAZENERGO” JSC, for the period of reconstruction of boiler unit St. # 8 for 2013-2014, # 0000027 dated 25.09.2013, providing the right to produce emissions in the amount of 0,655 tons in 2013;
- permit for environmental emissions for “SEVKAZENERGO” JSC, for the period of reconstruction of boiler unit St. # 6 for 2013, # 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 #04-0007-II Series Ishim dated 24.01.2013 for the effluent treated water disposal of the company;
- permit for special water use in the Republic of Kazakhstan #04/3-0022-II Series Ishim dated 09.12.2013 for the industrial water supply of the company;
- permit for special water use in the Republic of Kazakhstan #04/3-0008-II Series Ishim dated 24.09.2013 for usage of surface water from Beloye lake;
- environmental action plan of “SEVKAZENERGO” JSC for 2013-2014;
- hazardous Waste Certificates, developed in 2013;
- insurance policy # 0001645 dated 21.09.12 to the agreement with “SK “Kazkommerz-

Police” dated 04.09.2012 # 28.12/14-01/857. The expiration date of the insurance police is 23.09.13;

- insurance police series EK # 0003847 dated 24.09.13. The expiration validity of the insurance police from 24.09.2013 till 23.09.2014;
- registry certificates of the participants of pollution of “SEVKAZENERGO” JSC, updated in 2013;
- GHG inventarisation report for 2013.

“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;
- insurance police series OES # 0004020 dated 03.07.2013. the expiration date of the insurance police is 03.07.2014.

“Petropavlovsk District Heating Networks”, LLP

- insurance police series # 000456 dated 04.01.2013. the expiration date of the insurance police is 03.01.2014;
- 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, 2012, 2013 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;
- production and consumption wastes inventory for 2013;
- regulation of Akimat of Petropavlovsk of North-Kazakhstan region # 1074 dated 12.06.2013, # 1099 and 1101 dated 19.06.2013, on setting the borders of sanitary-protection zone for land sites

7. State Environmental Control

Governmental inspections on environmental issues

In 2013 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)

- State Institution “Territorial land inspection of the Agency of the Republic of Kazakhstan of land resources management of Pavlodar region” – scheduled inspection of “PAVLODARENERGO” JSC;
- Administration of the State Sanitary and Epidemiological Committee in the city of Pavlodar, Administration of the State Sanitary and Epidemiological Committee in the city of Ekibastuz, Fire Control Administration of the Emergency Department of Pavlodar Region – scheduled inspections of CHP-2, CHP-3 and ECHP were registered and proceed to 2014.

There were no acts and improvement notices received from the state authorities in 2013.

“Pavlodar Regional Electric Distribution Company” JSC

- Pavlodar region Environmental Department of the Environmental Regulation and Control Committee of the Ministry of Environmental Protection of the Republic of Kazakhstan – a scheduled inspection of “PREDC”, JSC. Inspection report was received, there were no improvement notices.

“Pavlodar District Heating Networks” LLP

- State Institution “Environmental Department of the Environmental Regulation and Control Committee of the Ministry of Environmental Protection of the Republic of Kazakhstan”, including: the subject inspection of heating networks in Ekibastuz and scheduled inspection for compliance with the requirements of environmental legislation of the Republic of Kazakhstan.

There were 2 acts and 1 improvement notice received, all problems were eliminated in full and in time.

“SEVKAZENERGO”, JSC

- Ishim basin inspection on usage and water resources protection of the Ministry of agriculture of the Republic of Kazakhstan of the committee of water resources;
- State Institution “North-Kazakhstan Region of the Environmental Regulation and Control Committee of the Ministry of Environmental Defense of the Republic of Kazakhstan”.

There were 5 acts, 4 improvement notices received, all problems were eliminated in full and in time.

In 2013 there were no inspections carried out at “NKREDC” LLP and “NKDHN” 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	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	Prior to the 23 rd of February
3.	Form #2-TII utility water (annual)	State Administration “Irtysh Inspection for Water Basin Resource Management and Conservation of the Committee for Water Resources of the Ministry of Agriculture of the Republic of Kazakhstan” Ishim basin inspection (North-Kazakhstan region)	Prior to the 10 th of January
4.	Form #1BK (water supply and sewer system)	Department for Statistics of Pavlodar Region	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 Esil Environmental Department (North-Kazakhstan region)	Prior to the 1 st of March
6.	Environment protection measures	Environmental Department of Pavlodar Region Esil Environmental Department (North-Kazakhstan region)	Prior to 10 th of January
7.	Report on implementation of environment protection measures	Environmental Department of Pavlodar Region Esil Environmental Department (North-Kazakhstan region)	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	Quarterly, Annually
9.	The report on the Industrial Environmental Control Program of “SEVKAZENERGO”, JSC	Environmental Department of Environment of North-Kazakhstan Region (Petropavlovsk)	Quarterly
10.	Inventory of greenhouse gases	Environmental Department of North- Kazakhstan Region (Petropavlovsk) Environmental Department of Pavlodar region	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.

In the Company safety and labor protection during production process is one of the key points mentioned in the Occupational Health and Safety Assessment System (OHSAS), operating at the enterprise. It includes carrying out the three-stage control consisting of check up of performance of safety requirements of work on each workplace within the department, including weekly carrying out Days of safety and labor protection in departments with participation of the management, leading experts, public safety inspectors.

For improvement of working conditions at the enterprises of the Company nomenclature actions are additionally developed for improvement of working conditions of enterprise departments, including actions for injury prevention and accident rate, the incidence prevention.

For the purpose of increase of level of safety and labor protection within the execution of activity, the enterprises of the Company are licensed on the requirements of the Occupational Health and Safety Assessment System (OHSAS) 18001:2007.

Within the frames of OHSAS at the enterprises of the Company there are quarterly meetings on labor safety and protection, directed towards the improvement of the level of labor safety and protection, as well as strengthening of the responsibility of all level management related to the condition of labor safety and protection within the departments together with further conducting of the Analysis by the management, and if necessary, development of additional actions for working conditions improvement.

For compliance with the requirements of fire safety at the enterprises of the Company:

- annually relevant employees undertake the fire-technical minimum in the fire-technical centre of Pavlodar, as well as in specialized organizations;
- developed and acting instructions on fire safety measures;

- the commissioning researches are held with the participation of the management and leading specialists of the enterprise during the spring-autumn period;
- responsible people are appointed for fire safety, their functional responsibilities are identified;
- relevant employees undertake training and check up of the knowledge on antifire safety, instructions, antifire trainings and so on.

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

There are weekly Days of safety technics, which consist of visits to workplaces, workshops, rest rooms, locker rooms, shower rooms, department territories, storages and other buildings by the commission representatives for compliance with the normative requirements of the program of conducting the Day of safety technics, convaying and detalizing the check up of the approved directions.

Visits to structural departments by public inspectors regarding observance of entry system, i.e. completeness of the specified and executed security measures and actions for preparation of workplaces at works (turn off/turn on of the equipment with posting of signs of safety, the device of special protections, additional lamps, ventilation, etc.), existence of tested and reliable tools of individual protection, electro - the pneumo tool, the woods, ladders, the qualification certificate with record about examination, special works and the medical commission, and also the document regulating technology of repair are daily carried out.

Daily engineer technical officers of subordinated department, bypass the territory regarding performance of works by the personnel according to rules, production and duty regulations, maintenance of the equipment installed in operating mode; compliance by the personnel of an order of reception-delivery of relay, maintaining operational documentation, production and labor discipline; timeliness of identification by the personnel of available defects and malfunctions in equipment and taking measures for their elimination; correctness of use of entry system when performing repair and special works; maintenance by the occupational health personnel on workplaces; existence and accuracy of devices and tools according to safety measures and fire safety measures.

Security and Safety Service regularly bypass workplaces for labor safety condition, execution of safety requirements, fire safety, and violation of sanitary norms during 2013.

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 (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 of the Republic of Kazakhstan	-	30/08/1995	02/02/2011
Code	Labour Code of the Republic of Kazakhstan	252-III	15/05/2007	15/05/07
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
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
Law	On State Control and Supervision of the Republic of Kazakhstan	377-IV	06/01/11	11/04/14
Law	On obligatory environmental insurance	93-III	13/12/05	As of 05/07/13
Law	On subsurface and subsurface use	291-IV	24/06/10	26/12/12
Law	On Rail Transportation	266-II	08/12/2001	24/02/2012
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	31/05/12
Government Regulation of the Republic of Kazakhstan	On approval of Rules of inventory of GHG emissions and ozone-depleting substances	348-II	13/12/07	25/05/12

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
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
Government Regulation of the Republic of Kazakhstan	On approval of Rules of usage of water supply system and water disposal of the residential areas	832	05/06/09	-
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 and drinking, household water supply, places of community water supply, and safety of water bodies”	104	18/01/2012	29.03.13
Government Regulation of the Republic of Kazakhstan	On approval of Rules of licensing and qualification requirements, placed towards the activity of gathering (preparation), storage, processing and realization of scrap and wastes of colored and black metals by legal entities	80	31/01/08	30/07/12
Government Regulation of the Republic of Kazakhstan	On approval of Rules of granting GHG emissions allowances	584	07/05/2012	7/05/2012
Government Regulation of the Republic of Kazakhstan	On approval of Rules of state accounting of sources of GHG emissions to the atmosphere and consumption of ozone-depleting substances	124	08/02/08	-
Government Regulation of the	On approval of Rules for wastewater acceptance into	141	28/05/2009	28/05/2009

Republic of Kazakhstan	wastewater discharge systems of residential areas			
Government Regulation of the Republic of Kazakhstan	On approval of Rules of waste management program development	403	30/03/2012	30/03/2012
Government Regulation of the Republic of Kazakhstan	On approval of Rules of the organization of liquidation landfill funds	591	10/07/2007	10/07/2007
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	-
Government Regulation of the Republic of Kazakhstan	On approval of Rules of limitation, stop or reduction of GHG emissions to the atmosphere	128	11/02/08	11/02/08
Government Regulation of the Republic of Kazakhstan	On approval of Rules of licensing and qualification requirements, placed towards the activity of gathering (preparation), storage, processing and realization of scrap and wastes of colored and ferrous metals by legal entities	80	31/01/08	30/07/12
Government Regulation of the Republic of Kazakhstan	On approval of Rules of state accounting of sources of GHG emissions to the atmosphere and consumption of ozone-depleting substances	124	08/02/08	22/10/13
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules of public hearings	135-II	07/05/2007	02/04/2012
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules of coordination of Industrial Ecological Control Programs and reporting requirements of the results of industrial ecological control	123-II	24/04/2007	25/08/2010
Order of Minister of Environmental Protection of the	On approval of Standard Environmental Activities List	119-II	24/04/2007	-

Republic of Kazakhstan				
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Wastes Classifier	169-П	31/05/2007	31/05/07
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of a Hazardous Waste Certificate Form	128-П	30/04/2007	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
Order of the Agency of the Republic of Kazakhstan on statistics	Instructions on completion of the census report Form #2-ТП (air) (annual), “Report on Environmental Protection”	143	20/06/2012	-
Order of the Agency of the Republic of Kazakhstan on statistics	Instructions on completion of Form 2-ТП (utility water)	2-Г	24/01/2005	-
Order of the Agency of the Republic of Kazakhstan on statistics	Instructions on completion of statistic form 4-ОС (annual) «Report on current expenses for environment safety, environmental payments and payment for nature resources»	180	15/08/11	-
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	-
Order of the Minister on Emergency	On approval of normative acts in the field of industrial safety	189	29/10/2008	16/07/2012

Situations of the Republic of Kazakhstan				
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of instructions of conducting impact assessment of target economic or other activity to the environment within the development of pre-planned, planned, pre-project and project documentation	204-П	28/06/07	24/09/13
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	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	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	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	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	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	14/05/2012
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	10/05/2012

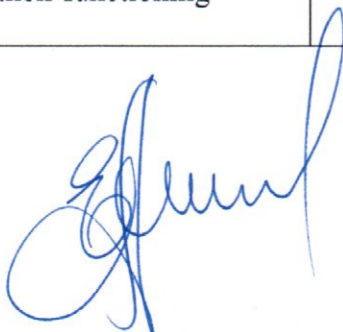
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Rules for mutual acknowledgement of allowance units and other carbon units based on the international agreements of the Republic of Kazakhstan	153-П	11/05/2012	11/05/2012
Order of Minister of Environmental Protection 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	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	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	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	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	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	24/02/2012
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of Standard Environmental Activities List	119-П	24/04/2007	24/04/2007
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the Methodology of identifying the norms of emissions to the environment	158-П	21/05/07	11/12/13

Joint Order Minister of Environmental Protection of the Republic of Kazakhstan and Minister of economic development and trade of the Republic of Kazakhstan	On approval of the form of check-up list of check up of sub- soil users	232-П 293	23/02/10 25/02/10	31/10/12
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the form of report on inventory of GHG emissions	123-П	15/05/13	15/05/13
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the form of installation certificate	122-П	15/05/13	15/05/13
Order of Minister of Environmental Protection of the Republic of Kazakhstan	On approval of the application form for obtaining the certificate for GHG emissions	124-П	15/03/13	15/03/13
Order of Minister of Environmental Protection of the Republic of Kazakhstan	Methodological instructions for accounting of GHG emissions from thermal electric power stations and boiler stations	280-П.	05/11/10	05/11/10
Regulation of Akim	Rules of operation of sewage system of Pavlodar	1255/2 1	11/10/07	-
Regulation of Akim	Rules of operation of sewage system of Ekibastuz	540/11	18/10/04	-
Rules	Rules on freight railway transportation	429-I	23/11/2004	-
Construction standards and regulations	Internal water pipeline and sewage system of the buildings	4.01- 41-06	2006	2008
Sanitary regulations and standards	Sanitary rules during work with mercury, its compounds and tools with mercury filling	1.10.08 3-94	1994	-
Instruction	Operative actions in case of adverse weather conditions	1	05/01/09	31/12/13

Instruction	Instruction on organization and execution of works at the territory of “PAVLODARENERGO” JSC by subcontractors	2	19/01/09	19/01/12
State Standard (GOST)	Ferrous metals secondary. General technical conditions	2787-75	1975	-
State Standard (GOST)	Scrap and colored and wastes of colored metals and alloys	1639-93	1993	-
State Standard (GOST)	“Hazardous goods. Classification and labeling”	19433-88	1988	-
State Standard (GOST)	Ferrous metals secondary. General technical conditions	2787-75	1975	-
State Standard (GOST)	Ferrous metals secondary. General technical conditions	2787-75	1975	1988
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	-
Management directive	Rules of technical operation of electric stations and networks of the Republic of Kazakhstan	34 PK.20.5 01-02	2002	-
Regulatory document	Methodological instructions for identifying the level of environment pollution components by toxic substances of production wastes and consumption	PHД 03.3.0. 4.01-96	29.08.97	-
Regulatory document	Order of regulatory actions on volumes of production and allocation of production wastes	03.1.0. 3.01-96	29.08.97	-
International standard	ISO	14001	2004	2004

International standard	ISO	19011	2011	2011
Standard of the Republic of Kazakhstan	ИСО	14001	2006	2006
Standard of the Republic of Kazakhstan	ИСО	19011	2002	2006
Standard of the Republic of Kazakhstan	ИСО	14001	2006	2006
Standard of the Republic of Kazakhstan	ИСО	19011	2002	2006
Standard of the Republic of Kazakhstan	ИСО	14001	2006	2006
Standard of the Republic of Kazakhstan	Environmental Management Systems General Guidelines on principles, systems and means of their functioning	14004	2000	-

President of “CAEPCO”, JSC



E.A. Amirkhanov

Vice-President on Production of “CAEPCO”, JSC



O.V. Perfilov

Environmental and Social Action Plan of “Central-Asian Electric Power Corporation”, JSC for the 2013

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
0	<p>Undertake and independent audit, inclusive of BAT Assessment in 2015 to verify the implementation of the current and past ESAP, as well as identify opportunities for further upgrade of environmental abatement and efficiencies..</p> <p>Based on the audit a new action plant will be developed to upgrade existing plants by 2023 to align them to National, IFC and EU environmental standards</p>	Need for a long term investment program and review of operations	EBRD	50-75 K EUR		<p>Report to Bank in 2015</p> <p>New action plan in 2016</p>	<p>As part of the 2015 BAT Assessment, develop plan to limit dust emissions, Sox and NOx by 2023.</p> <p>The plan will set out road map to attain step-by-step reduction of emissions as per EU Standards under LCP and IED benchmarks are below 50 mg/Nm3.</p> <p>BAT Assessment will review performance of new-type equipment and will show what BAT should be selected for future upgrade at the CHPs. The selected BAT should be always supported by the commercial realities in the Kazakh electricity market and at the same time aimed to reduce emissions as per EU standards. The BAT Study will be used as necessary to justify the increase of the tariff to market levels (if applicable) and EBRD will support the Company in such discussions with regulators, as required</p>	
1	Publish a corporate EHS report and make it publicly available (including on the internet).	Ensure that best practice is adopted across the organization and that there is transparency in environmental	Best Practice and EBRD requirement	Internal resources	Within 90 days from the end of each Financial Year	<p>Publication of report</p> <p>2015 CSR report in</p>	Corporate reports have been prepared each year and published at the CAEPCo and PAVLODARENERGO websites. The reports	The Corporate Report is prepared in accordance with approved sections and published on “Central Asian Electric Power Corporation”, JSC website:

	In 2015 develop a CSR (Corporate Social Responsibility) report in accordance to Global Reporting Initiative (GRI) standards,	performance. Reporting of environmental performance to stakeholders. Publish a CSR report, inclusive of Key Performance Indicators (KPIs) such as energy and carbon intensity from plants.				accordance to GRI	contain information required by ESAP 2009, however they should be supplemented with information on planned new investments, last year data on security of supply of heat and electricity and major topics related to the community interaction in accordance with the Stakeholder Engagement Plan.	http://caepco.kz/ru/aboutus/documents.html “PAVLODARENERGO”, JSC website: http://www.pavlodarenergo.kz/ru/ekologiya/otchetnost.html “SEVKAZENERGO” JSC website: http://www.sevkazenergo.kz/ru/ekologiya/otchetnost.html
2	Upgrade of the existing Stakeholder Engagement Program (SEP) procedures and policy. SEP should be updated annually by the Company and audited min every 5 years externally	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 reduces the risk of civil unrest and public concern.	EBRD	Internal and external	Q3 2013 – then each 12 months	SEP in place to be updated on a annual basis with summary provided to the Bank in Annual Report	Companies implemented number of new procedures and informing methods to communicate the public about their activities. However, there is no structured data base, which contains such information like level of SEP implementation (type, number and time of: applied procedures, complaints, considerations, conducted environmental and information procedures). This kind of data is only in written form and gathered in particular companies. This issue needs to be systematized. Furthermore SEP was not updated on the yearly basis.	Stakeholder Engagement Program (SEP) of subsidiaries of «CAEPCO» JSC are systematized, updated and published on corporate websites of the Company: «CAEPCO» JSC website: http://caepco.kz/ru/aboutus/documents.html «PAVLODARENERGO» JSC: http://www.pavlodarenergo.kz/ru/ekologiya/otchetnost.html «SEVKAZENERGO» JSC: http://www.sevkazenergo.kz/ru/ekologiya/otchetnost.html «AstanaEnergoSbyt» JSC: http://www.astanaenergosbyt.kz/shareholders_and_investors
3	Maintain and improve a Grievance Mechanism for both internal (workers, subsidiaries) as well as external (local community, contractors) stakeholders. Setting up of local community contacts for construction and operational stages	People can express their opinions and the complaints are effectively processed and result in proper mitigation measures. Tasks and responsibilities are clearly identified	Good practice, Bank guidelines	Internal resources	2013 As soon as possible, continuous	Grievance procedures put in place and publicized. Provide information in annual report	Current grievance mechanism does not fully meet EBRD requirements. Information on possibilities for submitting grievance is not very clear, the Company does not keep register of submitted complaints and requests.	Within the subsidiaries of the Company, working directly with consumers and public, there is recording of claims and complaints being conducted by the following ways: -by “trust line”; -recording of claims of persons and corporate entities in the register; -audio recordings of all consumer claims are saved for 30 days, written responses are being sent, and the measures are taken; -for the purpose of improvement of claim consideration mechanisms, there are headings organized: “Headquarters for work with consumers”, “Anticorruption efforts”, “Request-Response”, where the claims of external interested persons, published in mass media, management web logs, city and region Akims, received as the result of monitoring of informational realm of the Company in

								<p>external environment; -daily from consumers related to insufficient heat supply are being received by the phone or in written form; -the researches are conducted, on the base of which adjustment actions, acts are made, and the data base is provided; -prior to the beginning of the project on modernization and reconstruction of heat networks there are public hearings are being conducted with the inhabitants of district with participation of mass media (local TV channels) and publication in local press.</p> <p>“CAEPCO” JSC received 33 459 claims from consumers, 987 of them were complaints about negative facts. All claims and complaints are considered, and the responses are sent, the negative consequences are eliminated.</p>
4	<p>Management systems – ISO, OHSAS, EMAS</p> <p>Recertification processes should be performed on time in CAEPCo daughter companies.</p> <p>CAEPCo (holding Company) to be certified by Q2 2015</p> <p>Maintain EHS training of staff</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>2013 then as each certificate expires</p>	<p>Certification to ISO14001 and OHSAS 18001 at subsidiary companies level.</p> <p>For the managing Holding – ISO 9001 in 2014 and ISO 14001 by 2015.</p>	<p>Certification process has been completed for all companies. Nevertheless real implementation of procedures needs improvement. It is important to hold management systems in daughter companies of holding. Due to significant rotation of employees (on worker positions) it is necessary to spend means on constant EHS trainings.</p>	<p>For maintenance of management system in subsidiaries of the Company the funds are contributed for constant EHS training.</p> <p>“CAEPCO” JSC trained 4 ecologists, including 2 employees of “PE” JSC (the cost made 209 thousand KZT) on the following themes: “Innovations in legislation of the Republic of Kazakhstan in the sphere of environment safety” and “Waste management”, organized by the Ministry of environment safety of the Republic of Kazakhstan; 2 employees of “SKE” JSC (the cost made 217,4 thousand KZT) on the issues of GHG emissions and Environmental Code. The training of 43 specialists was conducted (30 employees of “PREDC” JSC and 13 employees of “SKE” JSC, the cost made 1 138 thousand KZT), according to the results the certificates obtained: “Internal auditor of integrated management system ISO”.</p> <p>More than 300 employees had training on issues of safety, qualification improvement and getting to know related specialties for amount of 2 971 thousand KZT, courses are organized by the training centre “Technadzor” LLP and training centre of “PE” JSC.</p> <p>Annually the companies conduct activity for approval of compliance with IMS (audits).</p>
5	<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 (i.e. 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>ESIA for new ash landfills should include the full analysis of waste ash for</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 a benchmark as well as ensure appropriate stakeholder consultations are undertaken and projects meet Kazakhstan</p>	<p>Best Practice and EBRD requirement</p>	<p>Internal resources</p>	<p>For all new investment procedures from Q2 2013</p>	<p>Completion of ESIA report and publication of a Non-Technical Summary (NTS) on the company web site.</p> <p>Provision of a copy of a Non-Technical</p>	<p>So far, the companies have conducted an EIA for modernized installations according to Kazakhstan law. However, impact on ground-water environment and issues connected with leaching from landfills and fuel storage should also be analysed.</p>	<p>Non-technical resume of investment project are posted on the websites: “PAVLODARENERGO” JSC: http://www.pavlodarenergo.kz/ru/ekologiya/otchetnost.html “SEVKAZENERGO” JSC: http://www.sevkazenergo.kz/ru/ekologiya/otchetnost.html</p> <p>For new investment actions, implementation of which may directly affect the environment and citizens’ health, the projects of “Environmental and Social Impact Assessment ” are being developed, which overtake the environmental expertise by authorized body with obtaining permits for emissions into the environment. Information on environmental expertise of the project is published in mass media, for familiarizing by all</p>

	mercury and other heavy metals.	legislation.				Summary to the Bank and publishing an NTS on the Company web site. Provide link to such in annual report.		<p>interested parties and public organizations. Within the frames of ESIA the assessment of impact on air, water basin, soil, subsoil, plant and animal world is executed. Totally, in 2013, “CAEPCO” JSC developed 4 new investment actions.</p> <p>“PAVLODARENERGO” JSC The Company developed 1 project with obtaining conclusion of state environmental expertise for ESIA “Reconstruction of dust extraction plant of boiler BKZ-160-100 (M) St. # 1 CHP-2 with installation of battery emulsifiers of the II generation” (conclusion # KZ12VCY00002196 dated 23.12.2013).</p> <p>“SEVKAZENERGO” JSC In 2013 the Company developed 3 investment projects with obtaining conclusion of the state environmental expertise for ESIA: “Steam boiler BKZ 220-100-4 # 12 Petropavlovsk CHP-2 (reconstruction)”; “Reconstruction of CHP-2 with substitution of boiler unit # 8”; “Reconstruction of Petropavlovsk CHP-2 with substitution of turbine aggregate # 4”.</p> <p>For exclusion of drainage of water over the ash dump territory, with depth to 3 meters under all over dams the antifiltrational waterproof basis is made of the condensed clay. Water passes through a dam, gathers in a drainage collector and by pumps is pumped over for the return to combined heat and power plant. The ash dump is equipped with the monitoring system of condition of dams, 5 observation wells are installed. The object conforms to all modern ecological requirements and the norms faced towards control of an underground and surface water. Near a new ash dump the selection of samples of underground waters (24.09.2013) and a soil cover (27.09.2013) is conducted by testing center “Tsentrgeolanalit” LLP. The ESIA project of a new ash dump contains the full analysis of waste regarding the content in them of mercury and other heavy metals, excess is not revealed.</p>
6	Install proper and certified CEMS (continuous monitoring systems) for all emission points from coal-fired units. The system should allow for on-line control and electronic storage	Ensure that the data distributed are reliable and based on good independent systems.	Best Practice and EBRD requirement		2015	Provide data on implementation and average results of data for each plant and boiler in annual report in 2014	CEMS devices have been installed only at the few installations. The program needs to be fully implemented and all records centrally accessible	<p>“PAVLODARENERGO” JSC At the beginning the agreement for manufacturing and supply of SIEMENS equipment of automatized control of pollutants concentration in emitted fire gases; the equipment supply and installation at all boiler units of CHP-3, CHP-2 was executed in December 2013; commissioning works are planned for 2014.</p> <p>“SEVKAZENERGO” JSC Devices for accounting of nitrogen oxides, sulfur oxides, carbon oxides, ash with the purpose of control of emissions to the atmosphere. The work for providing the mode of commissioning and fixation of indicators is being conducted in the mode of real time of device data.</p>

7	<p>Ensure that all new projects, extensions, plant and associated infrastructure are to be designed to meet Kazakh environmental standards and aim for EU standards, notably the EU IED Directive.</p> <p>Any new Greenfield plant or standalone block needs to benchmark with IED BAT in terms of emissions. Any deviation needs to be justified.</p> <p>Any modernization needs to aim to attain BAT for dust, NOx and SOx.</p> <p>Attain average dust emission for all plants below 300 mg/Nm3 by 2016.</p> <p>Long term action plan by 2023 to attain emission levels of below 100 mg/Nm3 to be developed as part of BAT Assessment in 2023</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>Kazakh standards for existing plants are high and there is a need to reduce emissions from existing plants to below 300 mg/Nm3 by 2016.</p> <p>Develop a long term program for further dust reduction</p>	Best Practice and EBRD Requirement	Will vary according to each project.	<p>CHPs: On-going</p> <p>Distribution companies: from 2011 all new heat transmission pipelines should meet EU energy efficiency standards (pre-isolated tubes etc.).</p>	Provide details of any new plant under design in annual report and status of permitting, plus minimal emission value levels to be attained.	<p>All new boilers for new plants for which a building permit is to be attained post 1st January 2015, will be constructed in accordance with the EU Large Combustion Plant Directive standards for existing plants (dust 50 mg/Nm3, SOx 800-00 mg/Nm3 depending on size of boiler)</p>	<p>“PAVLODARENERGO”, JSC completed the installation of battery emulsifiers on all boiler units of CHP-3 and ECHP, and CHP-2. The installation of emulsifiers made it possible to reach the level of emissions required by the Technical Regulations. Actual annual average data for 2013 on ash emissions are equal to 377mg/m3, NOx emissions – 506 mg/m3 and SO2 emissions – 1,033 mg/m3 .</p> <p>“SEVKAZENERGO” JSC completed the installation of battery emulsifiers on all boiler units. Actual annual average data for 2013 on ash emissions are equal to 290mg/m3, NOx emissions – 428 mg/m3 and SO2 emissions – 1,904 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 Institute of Natural Sciences, and Coordination Center for Climate Change. In 2013, on the basis of agreement with Firm “SOFINEX” (Belgium) and Firm “ECOREM” (Belgium) the assessment of technical, ecological, and economical possibilities was conducted 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. The recommendations according to the results of conducted researches were given with the purpose of increase of efficiency of facilities and reduction of negative impact on air quality: ash, selected at ash dumps may be used in construction and agriculture.</p>
8	<p>For any modernization or new investment in the mazut (HFO) storage areas, implement proper BAT rules for protection of soil and groundwater against spillage and contamination. Install permanent monitoring system for all storage areas with amount of oil above 50 Mg. Classify the sites in accordance with the risk of soil pollution</p>	<p>Proper risk procedure for avoiding soil contamination should be implemented as a next step (it should be part of the whole ISO procedures as well).</p>	Best Practice and EBRD requirement		<p>Q3 2013 – tender for consulting firm for detailed risk assessment of major mazut storage areas,</p> <p>Q2 – 2014 – results of the assessment delivered to the Company</p> <p>Q3 – 2014 – selection of the sites for future remediation processes</p>	<p>Presentation of new policy in accordance with ISO certificates, and agree action plan to clean up site</p>	<p>Limited clean-up of soil contamination was performed in 2011 (104 mg of soil in Petropavlovsk REK). Proper procedure for prevention of future liabilities related to soil contamination should be implemented at all CAEPCo companies.</p> <p>The identified sites with the highest contamination of soil should have the plans for remediation</p>	<p>“PAVLODARENERGO” JSC</p> <p>Plans for improvement of a physical condition of territories for fuel oil storage for the purpose of decrease in negative impact on environment and an exception of emergency leakages of fuel oil are implemented. The production environmental control (PEC) Program on 2012-2014 within which production monitoring for receiving target indicators of quality of environment (control of level of pollution of underground waters, soils) is developed and agreed with authorized bodies. Monitoring of components of environment was carried out by the accredited laboratory “Irtyshtandart” LLP. Excess on oil products was not revealed. Monitoring of impact of “PREDC” JSC on environment is carried out within the frames of PEC. Actions for prevention of damage to environment as a result of passages of transformer oils are executed.</p> <p>“SEVKAZENERGO” JSC</p> <p>In 2013 the Plan of works for inspection of a condition of soils of mazut storages of PCHP-2 is developed. Classification of mazut storages is carried out, by results of sampling by the test center</p>

								“Tsentrgeolanalit” LLP, according to degree of risk of pollution of the soil. The reconstruction of mineral oil facilities of “NKREDC” JSC was executed, this investment action provided the decrease of negative impact on environment (including soils), and prevention of emergent release of oil.
9	Develop a program in 2014 to evaluate the scope for reduction of NOx and SOx emissions levels comparable with the Large Combustion Plant Directive (as far as possible), notably more stringent dust emission from 2018 (phase 1)	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 Kazakh 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 Kazakh requirements for new plants	Best Practice and EBRD requirement	Internal resources	Develop plan 2014 and submit to shareholders and EBRD. Implement 1 st stage by 2014-2018 and 2 nd stage by 2023	Presentation of the report to EBRD representative s, later publication of the summary of the report.	BAT assessment was done in Pavlodar and Petropavlovsk CHPs by a local consultant. Program should be developed with the cooperation of governmental authorities as a part of the whole environmental strategy (in relation to the Kazakhstan 2050 program)	The period of implementation did not start.
10	In all CHPs: Stop purchase of asbestos containing products from end of 2014 in Petropavlovsk. Do not return to any usage of asbestos in other locations.	Improved management of environmental and health and safety issues. Asbestos is present at the CHP.	Best Practice and EBRD requirement	Consultancy costs / internal	In 2014 – stop purchasing asbestos at all sites..	Independent report by Q4 2014	Installation and on-going usage of asbestos should cease by 2014 in Petropavlovsk. It is the company that uses asbestos at present in the modernization processes (app 60 mg per year). A plan for the removal and disposal of asbestos should be developed by Q2 2013 in Petropavlovsk. High risk asbestos use area shall be removed by 2020. In Pavlodar, asbestos is not used anymore. Nevertheless, there are still high quantities of asbestos material at the site and arrangements should be made for its disposal;	“PAVLODARENERGO” JSC Since 2010 purchase of asbestos materials is not executed. All available asbestos materials, the enterprises according to the Qualifier of waste of the Ministry of Environment Safety and Water Resources of the Republic of Kazakhstan, belong to industrial and construction materials and are to be placed in polymeric bags with export to polygons of industrial wastes. Programs (plans schedules) are developed for replacement of asbestos-perlite products in equipment with basalt with their export from territories. “SEVKAZENERGO” JSC In 2013 use of asbestos production made 80,57 t. The Plan of export and dump of asbestos which contains definition of a place of collecting, dump places, regulations on extraction, export and an asbestos dump and as well as carrying out recultivation of places of a dump is developed. According to the Order "On Execution of the Plan of Nature Protection and Social Actions" purchase of asbestos production, transition to an environmentally clean insulating material - sealing Vermizol plaster is stopped from 01.01.14.
11	In all CHPs: Determine through analysis whether transformer oils contain	Continued use of PCB-containing transformer oil until the end of its useful life is acceptable.	Best Practice and EBRD requirement	Consultancy costs	2015	Results of analysis	Provide an update in annual report	At all enterprises within the process of oil purchase, there is an obligatory requirement on providing the certificate of absence of poly chlorinated biphenyls.

	PCBs.	However, long term plans for its phase out should be developed.						<p>“PAVLODARENERGO” JSC</p> <p>Accredited laboratory conducted testing of samples of oil-filled equipment for poly chlorinated biphenyls presence. According to the results of tests, containing of poly chlorinated biphenyls in all samples was less than 50 mg/k.</p> <p>“SEVKAZENERGO” JSC</p> <p>Accredited laboratory developed the methodology of selecting of oil samples for presense of poly chlorinated biphenyls, conducted training of the personnel for samples selection, and inventory of oil-filled equipment. The results of independent accredited laboratory will be presented in the 1 quarter of 2014.</p>
1 2	In all CHPs: Recalculate the provisions for future closure and remediation of the ash ponds.	Company should have the clear information on its future obligations on environmental protection.	Best Practice	Consultancy costs	Q4 2013 ETC – 2014	Report with calculations presented to EBRD	For each pond the estimated costs of the closure and rehabilitation (including soil transport and planting) should be calculated.	<p>“SEVKAZENERGO” JSC</p> <p>The company concluded agreement # 826 dated 12.09.2013 with “KazNIPiEnergoProm” JSC for development of design and estimate documentation on recultivation of ash dump # 3. The data will be provided after development of design and estimate documentation. New ash dump complies with all modern ecological requirements and regulations, and there is an annual monitoring of samples of subsoil waters and soil cover at the borders of ash dumps conducted in accordance with PVC. In 2014 it is planned to conduct a selection of water and soil samples at earlier recultivated ash dumps # 1, 2. In 2013 consulting companies “Ekorem”, “Sofinex” (Belgium) conducted testing of ash, selected from ash dumps. The results of the testing identified the opportunity of its usage in construction and agriculture.</p>
1 3	Develop the social program for co-financing of the flats or long term workers hotels.	High turnover of the workers is due to the low wages and lack of any housing solutions	Best Practice	1 Mill Euro per year in the period 2015 - 2020	Q3 2014	Report	There is a need for real improvement in the scope of the labor market competitiveness. Recommended: construction of several blocks of flats, which would provide the stability and maintain a larger group of people with at least 5 - 8 years of professional experience within the company.	<p>“PAVLODARENERGO” JSC</p> <p>the company developed a regulation on providing interest-free loans for procurement of lodgings for employees of “PE” JSC enterprises in the house, for construction of which the Company had equity participation. 20 high-qualified specialists with experience of working more than 5 years at the Company, obtained interest-free loans for procurement of apartments in amount of 25% from the total cost of the apartment, with obligatory term of working at the company for 5 years since the moment of getting the loan. “PREDC” JSC has 3 company-owned apartments at the balance of the enterprise.</p> <p>“SEVKAZENERGO” JSC</p> <p>The company has 1 dormitory and 18 company-owned apartments at the balance for the employees of the enterprise in Petropavlovsk. Now the issue is being worked over, the survey of the employees was conducted, the information on the necessity of housing improvement is obtained, the most acceptable measures for housing improvement are defined, the proposals for the top management of the Company are being formed.</p>
1 4	Estimate the impact on environment from coal	New European Directives on emission of Ni, Hg, As and other heavy metals	Best Practice		In 2014, the company should carry out an	Provide information in annual	A comprehensive analysis of mercury, arsenic,	<p>“SEVKAZENERGO” JSC</p> <p>In compliance with PVC the Company conducted testing of coal</p>

	firing units – perform independent additional coal quality analysis of heavy metals.	indicate the way in which this topic should be treated.			independent analysis for mercury and other metals	report	fluoride and heavy metals content in coal should be done. The analyses of environmental influence should be done with regard to this issue.	for containing of mercury, arsenic, fluoride and heavy metals in coal ash at at ash dumps (12.11.2013), as well as selection of samples and testing of subsoil waters (24.09.2013) and soil cover (27.09.2013) by testing centre “Tsentrgeo-lanalit” LLP. All indicators are normal.
15	All CHPs: Develop good practice standards for storm water and waste water management on sites.	Improvement of storm water and waste water management, setting internal standards and goals to achieve them. Ensuring a consistent best practice approach at the site	Best Practice	Internal cost	2014	Publication of policies Update in annual report		The period of implementation did not start.
16	Improve occupational health and safety (OHS) management, including as minimum: enforcement of wearing of required PPE, proper training of new and transferred personnel, proper and precautionary signage of hazardous areas, implementation of noise abatement techniques especially for furnaces, provision of first aid kits, enforcement of contractors obligations related to OHS, & visits to the worker’s families who participated in heavy accidents in the last 3 years.	Improved management of health and safety issues. Decrease in number of incidents. Decrease occupational diseases rate.	Legal compliance and reduced risk of accidents	Internal cost	2013	Improved management practices. List of installed workers protective solutions. Internal review records.	Inspection protocols indicated shortcomings with regard to working conditions. Some have accidents occurred in 2012.	Enterpruses of the Company provide employees with working clothing, safety shoes, personal protective gear, milk within the frames of acting legislation of the Republic of Kazakhstan. An independent expert of technical supervisory in the field of engineer networks, technological equipment, as well as bearing and enclosing structures was involved to the objects of enterprise, where repair of heating networks is in the process. Annually the enterprises procure safety signs (restrictive, warning, mandatory, indicating) for production areas, where it is necessary to provide safety. Individuals without required professional education and/or experience overtake a preparation by acting form of training in the field. For timely and effective rendering of before-doctor help, all production buildings are provided with first-aid kits, the employees have trainings on the methods of rendering before-doctor help annually. The declaration on industrial safety is held. There is a conducted accident-prevention and fir-prevention trainings. The whole personnel has a briefing note, training, retraining, certification on the issues of industrial safety and labor safety. The days of technical safety are conducted every week. Actualization of legislative base for occupational safety and health, with notification to the responsible bodies, is conducted daily. There are walk-round checks of structural departments by inspectors and engineer staff workers, all results are fixed in the Operating log, punchlist, logs of walk-round check of workplaces. The registration logs for accidents, and introduction briefing note are held.
17	Implement the requirements of post inspection orders.	Numerous issues related to environmental compliance	Environmental Law	Internal costs	As required in inspection protocols	Provide information on fulfillment to inspection control. Report to the Bank in	Each year the companies are controlled by local HSE inspection authorities. Each time some shortcomings are revealed e.g. with regard to wastewater management,	“PAVLODARENERGO” JSC State authorities conducted 9 inspections, including 6 inspections transferring to 2014 (CHP) and 3 inspections of distribution companies, the results of which presented 3 acts and 1 improvement notice, all violations are liquidated in full volume and in time. “SEVKAZENERGO” JSC

						annual report on status of compliance and implementation	air emission, improper waste management, littering etc.	Due to the reorganization of the Ministry of environment safety of the Republic of Kazakhstan into the Ministry of Environment safety and water resources, 9 unscheduled inspections were conducted. There were 5 acts, 4 improvement notices received, all violations are liquidated in full volume and in time.
18	<p>As part of EHS management system, create EHS team and nominate an EHS manager within the CAEPCo corporate structure.</p> <p>Such a group should consist of the main EHS leaders from particular plants and should be incorporated into the formal structure of the Company. The group would manage significant environmental issues, develop the Company's environmental approach and report to EBRD on all EHS issues.</p>	Strengthening the company environmental management.	Best practice	Internal resources	2013	Report to the Bank in annual report	There is no environmental department for the whole Company. In each plant responsibility for each aspect of environmental issues is divided to single persons.	“CAEPCO” JSC has production and technical department, which employed The main ecologist, who controls subsidiaries of the Company. The ecologist subordinates 17 specialists of environment safety of the enterprises of “PAVLODARENERGO” JSC and “SEVKAZENERGO” JSC. The company created a group on environment and health safety, which works on solving significant issues in the field of environment and presenting reports to the EBRD.
19	<p>Developing of the Environmental Occupational Health and Safety Procedures for Construction Works (construction companies including subcontractors) defining: Safeguard measures, Accidents and Emergency Prevention and Response, Evaluation, Feedback, and Reporting, Training of staff.</p> <p>Supervision of construction activities by environmental specialist and health and safety specialist</p>	<p>Definition of clear responsibilities for constructors. Ensure that all personnel is aware of the environmental requirements and clear operational procedures are set, surface and ground water protection, solid waste handling etc.</p> <p>Prevention of construction injuries, child labor etc.</p>	Best practice. Environmental protection and OHS regulations.	Management time or external Expert fees.	Before the start of construction, and then continuously.	Procedures are prepared. Trainings are performed and reports are submitted to project manager.	Company has already implemented a number of occupational safety standards however they concern mainly day-to-day operation, not investment activities.	<p>The Company developed “Instructions for organization and conducting the works at the territory of subsidiaries by subcontractors”, which identify the order of execution of works for investment actions. The Company included the main requirements in the field of quality, energy management, professional safety and health, environment safety, management of calibrating and test works into the agreements with subcontractors.</p> <p>Within the implementation of OHSAS 18001 the Company developed the lists of dangers and identified the levels of risk for subcontractors. Control of subcontractors is conducted in compliance with plan-schedule; in case of failure to comply with the requirements of the agreement, an act of inspection of the object with violations is formed. Specialist-ecologist and specialist in the field of industrial safety conduct the supervisory of construction works execution.</p>
20	Ensure that location and technical design of new landfills will meet BAT requirements and consider local environmental and groundwater conditions. Construction of new landfills	To ensure that future projects minimize environmental impacts	Best practice, European requirements	Internal resources	2013 – future When the need for new landfills appear	Report to EBRD		<p>Prior to the execution of actions within the frames of EBRD loan, (ready design and estimate documentation) the Company undergoes expertise, after which the project is brought on stream.</p> <p>The wastes, produced at the enterprise within the process of production activity, are transferred at the agreement base for disposal at landfills, or for utilization to the specialized organizations.</p>

	should be preceded by environmental and hydrogeological analysis and be a subject of EIA procedure.							
Petropavlovsk CHP								
2 1	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. As a other potential solution, divide Beloe lake into cooling pond (app. 10 % of the area) and the rest of the lake.	Best practice	Own resources	2014	Copy of the permits and data on waste water quality delivered to EBRD	The Company has a problem with reduction of contamination in wastewater discharged to Beloe Lake and Ishim river. Allowable limits of substances in wastewater are exceeded and some substances are not covered by the discharge permit.	<p>The Company obtained permit for special water usage and for usage of surface waters from Beloye lake with application of water facilities of the thermal electric power station PCHP-2, as well as for cooling of water # 04/3-0008-И Series Ishim dated 24.09.2013.</p> <p>With the aim of prevention of accidental release of oil into the water of drawing water pipe of Beloye lake, the Company substituted old oil freezers of turbine shop with new ones. The Company procured biological product, which carries sorbing qualities for exclusion of water and land cover pollution by oil-polluted water. The Company put into operation oil booms with identification mark “РУБЕЖ-45” at discharge channel (the act of putting into operation dated 25.12.2013).</p> <p>During 2013 the company did not execute the procedure of waste water discharge from Beloye lake into Ishim river.</p> <p>The fact of Ishim river pollution by oil-polluted water from “SEVKAZENERGO” JSC was not observed.</p>
2 2	Develop GHG for 1 microwatt reduction plan for years 2014 – 2020. Evaluate further energy efficiency improvement measures.	Energy efficiency and lower fuel use per MWh will result in decreased CO ₂ emissions.	Best Practice and EBRD requirement	Internal resources	Q1 2014	Publication of GHG reduction plan	The current investment program is aimed at improving generating efficiency at CHP-3 & CHP - 2 and thereby reducing specific CO ₂ emissions. It will be part of the whole program of new Kazakhstan law on CO ₂ limits and trade.	The period of implementation did not start.
2 3	Perform the review of the feasibility to implement European BREF for cooling recommendations for the upgrade of Petropavlovsk open-cooling system.	To ensure that future projects minimize environmental impacts	Best practice, European requirements	Internal resources	2014	Report to EBRD	This open-cooling system is not in full compliance with BREF Dec 2001 for industrial cooling operations. The program for upgrade should be discussed internally and with the authorities.	The period of implementation did not start.
PAVLODARENERGO CHP								
2 4	Develop GHG for 1 microwatt reduction plan for	Energy efficiency and lower fuel use per MWh will result in a decrease in	Best Practice and EBRD	Internal resources	2014	Publication of GHG	The current investment program is aimed at	The period of implementation did not start.

	years 2014 – 2020. Evaluate further energy efficiency improvement measures.	CO ₂ emissions.	requirement			reduction plan Provide data to EBRD on carbon emission per plant in annual report In 2015 include data in CSR	improving generating efficiency at CHP-3 & CHP - 2 and thereby reducing specific CO ₂ emissions. It will be part of the whole program of new Kazakhstan law on CO ₂ limits and trade.	
25	Design the new cooling towers and systems in accordance with European BREF for cooling, dated Dec 2001.	To ensure that future projects minimize environmental impacts	EU requirements	1300 million tenge included in investment program	2013	Report to EBRD	Electric power output during summertime is limited to 300MW due to insufficient capacity of the cooling system. The company plans to construct the additional cooling tower in 2013 - 2014	“KazNIPiEnergoProm” JSC (Almaty) at the order of “PE” JSC developed project “Installation of cooler # 5 CHP-3 of “PE” JSC”. The project provides for modern technology of cooling – usage of polymer irrigators, which complies with the best available technologies in accordance with the List of best available technologies, approved by the refutation of the Government of the Republic of Kazakhstan # 245 dated 12.03.2008. Within the process of choosing anti-corrosive materials for coolers the acting European practice was taken into consideration in compliance with EU directive “Integrated pollution prevention and control (IPPC), referenced document on best available technologies for big fuel-using facilities” 2010. The experience of usage of polymer irrigators showed that its usage will lead to the following: -to improve cooling effect by 2,0-2,5 C, or to decrease the height of irrigator by 1,0-1,5 m saving the level of cooling; -to lightweight the framings of exoskeleton for irrigator taking into account the weight of polymer irrigators.
Pavlodar Electricity Distribution Company, Petropavlovsk Electricity Distribution Company, Pavlodar and Ekibastuz Heat Distribution Company, Petropavlovsk Heat Distribution Company								
26	For Heat Distr. Comp.: Prepare a new energy efficiency improvement program for years 2014 - 2020.	Energy efficiency and lower fuel use per a square meter will result in this program. This should include program for pre-isolated pipelines installation, installation of appropriate heat meters and the program for thermo-vision photos of the assets for identification of heat losses.	Best Practice and EBRD requirement	Internal resources	Q4 2013 – initial actions, preparation of the program, application for acceptance of the program and new tariff rates by local authorities.	Publication of energy efficiency program.	The companies prepared a program “Development, reconstruction and retrofitting” to reduce extra long losses during the period 2010 – 2016. This includes a schedule of replacement of heat insulation of mineral wool mats with foamed polyurethane insulation.	“Pavlodar Heating Networks” LLP The actions of PHN are included into the Complex plan of power saving in Pavlodar region for 2012-2015. Within the frames of investment program “Development, reconstruction and technical re-equipping”, directed towards the reduction of heating losses the Company executed a substitution of heat insulating facilities 3,7 km. The company executed reconstruction of heating mains using preinsulated pipeline – 0,8 km of pipeline, rehabilitation of heat insulating facilities of main pipeline using steam generating plant – pipe covering 2,9 km of insulation. According to the results of 2013, actual losses made of heating networks in average 31,7%, which is 3,3% less than in 2012, including additional losses which made: for Pavlodar – 23,9%, which is 6% less than in 2012, for

								<p>Ekibastuz – 39,4%, which is 4,7% less than in 2012.</p> <p>“Petropavlovsk Heating Networks” LLP</p> <p>Within the frames of investment program in 2013 the Company executed: reconstruction of heating main using preinsulated pipeline – 3,6 km; rehabilitation of heatinsulating facilities of main pipeline using steam generating plant – pipe covering 1,3 km of insulation; modernization of 5 pumping houses and installation of automated dispatch control system at 15 objects. According to the results of 2013 actual losses made 28,56%, which is 2,48% less than in 2012.</p>
27	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 training 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		2013/2014 - See comment	Contract of such trainings or on our own, reports from participants and evaluation documentation.	In all plants there have been actions improving environmental management system undertaken, such as: hiring environmental engineer, training for environmental specialists, and development of environmental procedures within ISO certification process. Nevertheless, it seems that no environmental trainings for new employees have been conducted.	<p>“Pavlodar Regional Electricity Distribution Company” JSC</p> <p>In 2013 the company employed the specialist to the position of engineer of environment safety in the department of IMS and organized training for the requirements of management system by “Kazakhstan quality organization” LLP. According to the results of training the specialist obtained certificate “Internal auditor of integrated management system in compliance with the requirements of international standards ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007”.</p> <p>“Petropavlovsk Heating Networks” LLP</p> <p>With the purpose of improvement of ecological competence of employees, the Company subscribes “Ekolog” newspaper, and trains employees for ecological issues. The issues of environment safety include initial and periodical briefing note.</p>
28	For energy distribution companies: develop and coordinated with local authorities the plan of the measures needed for proper security of supply for category I consumers.	Due to severe climatic conditions the Companies have to 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.	Best Practice	40 per company	Q4 2013 – the new report should be presented as an annex to the 2013 management report for the whole company	Discussion of the results with tariff authorities and local authorities	Limited inventory was prepared in Petropavlovsk and Pavlodar. The costs of the second side supply should be paid the local authorities or the owner of the entity entitled to dual – supply (hospital etc.). Due to the lack of funds this issue is not solved in these towns.	<p>“Pavlodar Regional Electricity Distribution Company” JSC</p> <p>The company prepared a plan for providing I category consumers with electric supply in accordance with categorization, prepared the list of consumers, who do not correspond to the requirements, the issue of their providing is being considered with local authorities.</p> <p>“North-Kazakhstan Regional Electricity Distribution Company” JSC</p> <p>The Company made a preparation of I category consumers list, who did not obtain TS; preparation of I category consumers list, who obtained TS, but are not working on this issue; preparation of information to the state authorities.</p>
29	Request for confirming documents (certificates, licenses) of the contractors for old transformers and equipment utilization.	Improved management of environmental and H&S issues in the region. Old electric devices require special procedures for utilization and the audited.	Best Practice	30	Q3 2013 See comment		According to EHS report 2012, the old transformers are repaired by internal resources. Mercury containing lamps are disposed by “special companies”, however it is not known whether they	<p>Used mercury-containing lamps are transferred for mercurization to the specialized organization in Pavlodar – “Rezon” LLP (State License # 0000524 dated 16.05.2005) and in Petropavlovsk – “Polestar” LLP (# 1930-01/13-2447 dated 05.08.2013).</p> <p>“Pavlodar Regional Electricity Distribution Company” JSC</p> <p>The reparable transformers and electric equipment in compliance</p>

							are certified for such services. No information about other equipment utilization was provided.	with the Acts of technical review and allowance are transferred to the storage forming receipt voucher as reserve storages for existing electric equipment. Due to this fact, transfer for utilization of out-of-order transformers and other equipment to the other enterprises is not executed.
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President of “CAEPCO”, JSC



E.A. Amirkhanov

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



O.V. Perfilov