



CAEPCO

Центрально-Азиатская
Электроэнергетическая Корпорация

Corporate report
on Environmental and Social Action Plan
of «Central-Asian Electric
Power Corporation», JSC
for the year 2010

Almaty, 2011

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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 Company) is a vertically-integrated energy holdings 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 contains of:

1. Group of companies of “PAVLODARENERGO”, JSC (hereinafter “PE”, JSC) - “Pavlodar Heat Distribution Company”, JSC (hereinafter “PHDC” PE), “Pavlodar Regional Electric Distribution Company”, JSC (hereinafter “PREDC”, JSC), “Energocentre”, JSC (“EC”, JSC);
2. Group of companies of “SevKazEnergo”, JSC (hereinafter “SKE”, JSC) – “North Kazakhstan Regional Electric Distribution Company”, JSC (hereinafter “NKREDC”, JSC), “Petropavl Heat Distribution Company”, LLP (hereinafter “PHDC”, LLP), “North Kazakhstan Energocentre”, JSC (hereinafter “NK EC”, JSC).

1. Environmental policy and concepts of environmental activities of the company

Interests of the environmental protection are one of the most important among the priorities of the Programme of strategic development of the Company. Prevention of pollution of the environment is decisive in all decision-making for the production of electricity and thermal energy. Environmental pollution is easier to be prevented rather than eliminated. During the introduction of new technologies, the level of their impact on the environment and the efficiency usage of energy and natural resources is assessed.

Environmental policy of the Company was developed in accordance with Concept of ecological safety of the Republic of Kazakhstan for 2004-2015 years, Environmental Code and ISO 14000 standards based on the tasks set by Environmental and Social Actions Plan. The acquaintance with the environmental policy on the subsidiaries of the Company was implemented with the help of acquaintance lists. The Policy is displayed on the information boards of Environment Management System in all the departments. It was published in “Energetic” newspaper # 13 (2348) dated 17 July 2009.

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

The fundamental principles of environmental policy are the following:

- recognition of the constitutional human right on healthy environment;
- consideration of priority of environmental security as an integral part of national security;
- guidance by considerations of feasibility 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 production of electricity and heat;
- the reduction of emissions and wastes from the production of electricity and heat, and environmentally safe treatment for them;
- carrying out activities aimed on reduction and prevention of accidents and reduction of their negative impact on the environment;
- improvement of technological processes of generation of electricity and heat energy.
- openness and accessibility of environmental information, immediate notification of all interested parties about the accident, their environmental impacts and measures for their elimination;
- openness and accessibility of results of environmental monitoring;
- involvement of all personnel of the enterprises in environmental activities of the enterprises through the development and improvement of environmental education of employees; demand all employees to follow safety regulations, environmental standards and rules necessary to comply with environmental policies and achievement the effectiveness of environmental performance.

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

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

1. Organization and implementation of production monitoring in order to achieve target indicators of environmental quality:
 - Ambient air monitoring, including:
 - monitoring of operating efficiency of gas-and-dust purifying equipment and compliance with established emissions standards;
 - monitoring of ambient air pollution level on the border with the company’s sanitary zone and ash ponds;
 - monitoring of hazardous substances concentration in the company’s emissions;
 - monitoring of the quality of instrumental measurements;
 - Water Resources monitoring, including:

- monitoring of pollution level of underground water at the industrial sites of the company and on the border with the ash pond sanitary zone.
 - 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 production, management and location of production and consumption wastes;
 - Development and planning of environmental activities;
 - Monitoring of implementation of the nature-conservative measures;
 - Estimation of impact level on the environmental components.
 - Minimizing the impact of production processes of the enterprises on the components of environment and human health;
 - Formation of a higher level of environmental awareness and responsibility of managers and employees of the Company;
 - Increasing production and environmental efficiency of the system of environmental protection management.
2. Registration of environmental emissions, industrial monitoring data analysis, compliance with environmental requirements, provision of industrial ecological monitoring data.
 3. Organization of internal inspections. Implementation of preventive and corrective actions 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 environmental protection management system in the company.

2. Environmental regulations of activities of the Company for 2010

In the context of 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 ecological regulations of the company's enterprises

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

- Insurance policy №05 00001851 dated 11.03.2010. Term of insurance policy till 10.03.2011.
- Draft regulations for maximum permissible emissions for CHP-2 of “PAVLODARENERGO”, JSC approved by Irtysh Ecology Department in 2008. Conclusion of state ecological expertise of the draft standards for maximum permissible emissions for CHP-2 of “PAVLODARENERGO”, JSC № 7-12-2/515 dated 28.08.2008.;
- Draft regulations for maximum permissible emissions for CHP-3 of “PAVLODARENERGO”, JSC approved by Irtysh Ecology Department in 2008. Conclusion of state ecological expertise of the draft standards for maximum permissible emissions for CHP-2 of “PAVLODARENERGO”, JSC № 7-12-2/1598 dated 30.06.2008.;
- Draft regulations for maximum permissible emissions for ECHP of “PAVLODARENERGO”, JSC approved by Irtysh Ecology Department in 2008. Conclusion of state ecological expertise of the draft standards for maximum permissible emissions for Ekibastuz CHP of “PAVLODARENERGO”, JSC № 7-12-2/1514 dated 23.06.2008.;
- Environmental impact assessment of enterprise «Ekibastuz Heating Plant» of “PAVLODARENERGO”, JSC for 2007. Conclusion of state ecological expertise - № 7-12-1/999 dated 18.04.2008.;
- Environmental impact assessment of enterprise CHP-2, CHP-3 of “PAVLODARENERGO”, JSC for 2007. Conclusion of state ecological expertise for EIA of CHP-2, CHP-3 of “PAVLODARENERGO”, JSC № 7-12-1/1718 dated 17.08.2007.;
- Draft regulations for waste disposal, approved 23.02.2010 by Irtysh Environmental Department. Conclusion of state ecological expertise for the project “Standards for wastes disposal of Eki 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 JSC “Pavlodarenergo”, approved 15.06.2010 by the Committee on Ecological Monitoring and Regulation of the Ministry of Environmental Protection of the Republic of Kazakhstan Conclusion of state ecological expertise for the project “Standards for production and consumption waste disposal of CHP-2 and CHP-3 of “Pavlodarenergo”, JSC” №06-03-01-18/236-1 dated 15.06.2010;
- Conclusion of state ecological expertise for project materials:
 - Reconstruction of the ash removal unit of boiler BKZ-75-39FB station №7 of Ekibastuz CHP of JSC “Pavlodarenergo” including installation of a battery emulsifier of II generation (conclusion №3-2-12/596 dated 14.02.2011) ;
 - Construction of the 2nd stage of CHP-3 ash pond of JSC “Pavlodarenergo” (conclusion №3-2-12/4544 dated 10.09.2010);
 - “Reconstruction of the ash removal unit of boiler BKZ-75-39F including installation of battery emulsifiers of II generation (boiler №8)” (conclusion №3-2-12/4012 dated 30.11.2009)
 - Reconstruction of the ash removal unit of boiler BKZ-420-140 station №5 of CHP-3 of JSC “Pavlodarenergo” including installation of battery emulsifiers of II generation (conclusion №3-2-12/1623 dated 04.06.2009) ;
 - Reconstruction of the ash removal unit of boiler BKZ-420-140 station №4 of CHP-3 of JSC “Pavlodarenergo” including installation of battery emulsifiers of II generation (conclusion №3-2-12/4574 dated 14.09.2010) ;

- “The ash removal unit of boiler BKZ-160(190)-100 station №2 of CHP-2 of JSC “Pavlodarenergo” including installation of battery emulsifiers of II generation (conclusion №3-2-12/4613 dated 16.09.2010) ;
- “The ash removal unit of boiler BKZ-160(190)-100 station №5 of CHP-2 of JSC “Pavlodarenergo” including installation of battery emulsifiers of II generation (conclusion №06-03-01-18/7947 dated 10.09.2009) ;
- Reconstruction of the ash removal unit of boiler BKZ-420-140 station №5 of CHP-3 of JSC “Pavlodarenergo” including installation of battery emulsifiers of II generation (conclusion №06-03-01-18/7948 dated 10.09.2009);
- “Reconstruction of earthwork structures of CHP-3 ash pond in Pavlodar” (conclusion №3-2-12/4285 dated 20.08.2010);
- “Restoration of the ecological state of ground areas in the anthropogenic domain of CHP-3 ash pond” (conclusion №3-2-12/2086 dated 20.06.2010);
- “Reconstruction of boiler unit station №1 of BKZ-420-140 type CHP-3 of JSC “Pavlodarenergo” (conclusion №3-2-12/1094 dated 09.07.2010);
- Reconstruction of the ash removal unit of boiler BKZ-420-140 station №3 of JSC “Pavlodarenergo” including installation of battery emulsifiers of II generation (conclusion №7-12-1/515 dated 28.08.2008).

“Pavlodar Heat Distribution Company”, JSC

- Environmental impact assessment of “Pavlodar Heat Distribution Company”, JSC approved in 2006 by PRTDES. Conclusion of state ecological expertise for Environmental Impact Assessment project for “Pavlodar Heat Distribution Company”, JSC №7-12-1/2772 dated 30.11.2006;
- Draft of “Standards of maximum permissible emissions for “Pavlodar Heat Distribution Company”, JSC. Conclusion of state ecological expertise for the project of maximum permissible emissions for “Pavlodar Heat Distribution Company”, JSC №1-12/IOP-322 dated 07.06.2010;
- Adjustments to “Environmental Impact Assessment” of “Pavlodar Heat Distribution Company”, JSC approved in 2007 2006 by PRTDES. Conclusion of state ecological expertise for the project Adjustments to “Environmental Impact Assessment” of “Pavlodar Heat Distribution Company”, JSC №7-12-1/985 dated 23.05.2007;
- Draft standards for wastes disposal for “Pavlodar Heat Distribution Company”, JSC approved in 2007 2006 by PRTDES. Conclusion of state ecological expertise for the project Draft standards for wastes disposal №7-12-4/1327 dated 03.07.2007;
- Environmental impact assessment of Ekibastuz Heat Distribution Company of “Pavlodar Heat Distribution Company”, JSC for 2008. Conclusion of state ecological expertise for Project for Environmental Impact Assessment – №7-12-1/2225 dated 10.10.2008;
- Draft standards for wastes disposal of Ekibastuz Heat Distribution Company of “Pavlodar Heat Distribution Company”, JSC approved by Irtysh Ecology Department in 2008. Conclusion of state ecological expertise for Draft Standards for Waste Disposal for Ekibastuz Heat Distribution Company of “Pavlodar Heat Distribution Company”, JSC №7-12-4/961 dated 16.04.2008;
- Permit for emissions into the environment №0033019 issued by Irtysh Ecology Department for the period 2008 – 2010, giving a right to Ekibastuz Heat Distribution Company of “Pavlodar Heat Distribution Company”, JSC for emissions: in 2008 – 0.9984 tons, in 2009 – 0.9984 tons, and in 2010 – 0.9984 tons;
- Permit for emissions into the environment № 0000523 issued by State Institution “Department on Natural resources and Environmental Management Regulation” for the period 2011-2014, giving a right to “Pavlodar Heat Distribution Company”, JSC for emissions: in 2011 – 1.0133 tons, in 2012 – 1.0133 tons, in 2013 – 1.0133 tons, and in 2014 - 1.0133 tons;
- Permit for emissions into the environment №0033689 issued by Irtysh Ecology Department for the period 2008 – 2011, giving a right to Ekibastuz Heat Distribution Company of “Pavlodar Heat Distribution Company”, JSC for emissions: in 2008 – 0.854 tons, in 2009 – 0.854 tons, in 2010 – 0.854 tons, and in 2011 – 0,854 tons.

As of 01.01.2011, “Pavlodar Regional Electric Distribution Company”, JSC has:

- Conclusion of state ecological expertise for the working draft “Construction (carry-over) of TII-352 in the area of the City Palace of Culture named after Estay in Pavlodar” № 1- 12/JUR-379 dated 14.06.2010;
- Conclusion of state ecological expertise for the working draft “Construction of a temporary substation “Usolskaya-2”-110/10кВ in Usolskiy micro-district and construction of sealing-off from LEP-110 (transmission line) №104 and its connection to a temporary substation “Usolskaya-2”-110/10кВ in Usolskiy micro-district of Pavlodar in Tkachev street” № 1-12/JUR-885 dated 19.11.2010;
- Conclusion of state ecological expertise for Environmental Impact Assessment of the production plant located at 79, Suvorov st. in Pavlodar of “Pavlodar Regional Electric Distribution Company”, JSC № 1-12/JUR-354 dated 18.06.2010;
- Environmental impact assessment of the structural unit “PREDC”, JSC City Organization for Intrahouse Electricity Networks 2009. Conclusion of state ecological expertise №12/1-12/Jur-451 dated 12.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – IEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-452 dated 12.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC- MEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-453 dated 12.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – BEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-454 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – UEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-455 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC- JEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-456 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – LEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-457 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – SHEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-458 dated 12.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – KEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-459 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – ZEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-460 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – AEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-448 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – AEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-449 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PREDC”, JSC – PEDN 2009. Conclusion of state ecological expertise №12/1-12/Jur-450 dated 08.10.2009;
- Environmental impact assessment of the structural unit “PavldarEnergService”, JSC – COEN 2008. Conclusion of state ecological expertise of the compliance with environmental standards and requirements № 7-12-1/1039 dated 23.04.2008. In connection with renaming of the company into “PREDC”, JSC in March 2009, the company received Conclusion of state ecological expertise № 3-2-12/2030 dated 17.07.2009;
- Environmental impact assessment of the structural unit “PavldarEnergService”, JSC – WOEN 2008. Conclusion of state ecological expertise of the compliance with environmental standards and requirements № 7-12-1/1038 dated 23.04.2008. In connection with renaming of the company into “PREDC”, JSC in March 2009, the company received Conclusion of state ecological expertise № 3-2-12/2030 dated 17.07.2009;
- Permit for emissions into the environment for 2010-2012 № 0000381 dated 01.04.2010 giving the right to “PREDC”, JSC – West Organization for Electricity Networks for emissions: in 2010 – 0.0628476 tons, in 2011 - 0.0837968 tons, in 2012 - 0.0837968 tons;

- Permit for emissions into the environment for 2010-2012 № 0000382 dated 01.04.2010, giving the right for emissions to “PREDC”, JSC – City Organization for Electricity Networks :in 2010 – 0.450682 tons, in 2011 - 0.6009093 tons, in 2012 - 0.6009093 tons;
- Permit for emissions into the environment for 2010-2013 № 0000383 dated 01.04.2010 giving the right for emissions to “PREDC”, JSC – Electricity Distribution Networks produce emissions:in 2010 – 1.800176 tons, in 2011 –2.711001 tons, in 2012 –2.711001 tons, in 2012 –2.711001 tons;
- Permit for emissions into the environment for 2010-2014 № 0000479 dated 30.07.2010 giving the right for emissions to “PREDC”, JSC – production plant in Suvorov st. to produce emissions.

“SEVKAZENERGO”, JSC

- Environmental impact assessment for "SevKazEnergo Petropavlovsk" LLP for 2009-2013. Conclusion of state ecological expertise for draft Environmental Impact Assessment for "SevKazEnergo Petropavlovsk" LLP № 06-03-01-18/7078 dated 27.08.2009;
- Draft standards of maximum permissible emissions (MPE) for "SevKazEnergo Petropavlovsk" LLP for 2010-2012. Conclusion of state ecological expertise for draft MPE for "SevKazEnergo Petropavlovsk" LLP № 06-03-01-18/7079 dated 27.08.2009;
- Draft standards of wastes disposal for "SevKazEnergo Petropavlovsk" LLP for 2008-2012. Conclusion of state ecological expertise for draft standards of wastes disposal for "SevKazEnergo Petropavlovsk" LLP» № 04-13/2601 dated 17.06.2008;
- Permit for emissions into environment for the period 2010-2012 for "SevKazEnergo", JSC № 0055489 dated 22.12.2008 giving the right to produce pollutant emissions - 47, 529.288 tons, discharges – 11, 204.663 tons, and production and consumption wastes - 1, 016, 956.16 tons;

“Petropavl Heat Distribution Company”, LLP

- Environmental impact assessment was approved in 2009. Conclusion of state ecological expertise for draft EIA for "Petropavl Heat Distribution Company" LLP №03.10-03/436 dated 02.03.2010;
- Draft standards of maximum permissible emissions(MPE) was approved in 2009. Conclusion of state ecological expertise №03-3115 dated 31.12.2009;
- Permit for emissions into environment for the period of на 2010-2014 series N-13 № 0000734 dated 15.04.2010giving a right for emissions of contaminants in the following volumes:
In 2010 – 3.3332643 tons; in 2011 – 4.7057849 tons; in 2012 – 4.7057849 tons; in 2013 – 4.7057849 tons; and in 2014 - 4.7057849 tons;
- Environmental protection actions plan for the period of 2010-2014;
- Program for industrial environmental monitoring developed in 2009;
- Program of monitoring of contaminants of the enterprise developed in 2006
- Passports of wastes developed in 2009.

"North-Kazakhstan Regional Electric Distribution Company" , JSC

- Environmental impact assessment for "North-Kazakhstan Regional Electric Distribution Company", LLP for 2008-2012. Conclusion of state ecological expertise for draft Environmental Impact Assessment for "North-Kazakhstan Regional Electric Distribution Company" LLP № 104-13/7165 dated 31.12.2008;
- Program for production and ecological monitoring of industrial sites for "North-Kazakhstan Regional Electric Distribution Company", LLP № 15-001 dated 03.12.2007;
- Draft standards of maximum permissible emissions (MPE) for "North-Kazakhstan Regional Electric Distribution Company", LLP for the period of 2008-2012. Conclusion of state ecological expertise for draft MPE for "North-Kazakhstan Regional Electric Distribution Company", LLP № 03-04/639 dated 09.04.2008;
- Permit for emissions into environment for 2010 for "North-Kazakhstan Regional Electric Distribution Company", JSC № 0036915 Series T- 13 dated on 15.01.2008, giving the right to produce emissions of contaminants – 11.254290707 tons and production and consumption wastes – 51.307 tons.

3. Key environmental indicators of the company for 2010

Environmental protection is the part of the content of daily work of the company's enterprises. Company Enterprises are working on metering the emissions into the atmosphere and waste generated during the production.

3.1. Hazardous emissions into the atmosphere

Report Data on emissions of the Company for 2010 in group of companies "PAVLODARENERGO", JSC and "SevKazEnergo", JSC (tons)

Emissions of air pollutants	"PE", JSC		"SKE", JSC		"CAEPCO", JSC	
	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	77 685	61 922	47 529	42554	125 214	104 476
Coal ash (nonorganic dust 70-20% silica)	30 423	25 536	18 472	15582	48 895	41 118
Nitrogen dioxide	8 904	7 901	4 833	4 797	13 737	12 698
Nitric Oxide	1 444	1 282	785	780	2 229	2 062
Sulfur dioxide	34 964	25 615	18 434	16 878	53 398	42 493
Carbon monoxide	1 847	1 485	4 689	4 332	6 536	5 817
Other	103	103	315	185	418	288

Report Data of «PAVLODARENERGO», JSC CHP for 2010 (tons)

Emissions of air pollutants	CHP-2		CHP-3		ECHP		PE, total	
	Limit	Actual	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	14 723	12513	50 515	40574	12 439	8 827	77 677	61 914
Coal ash	6 332	5608	20 308	16814	3 783	3 114	30 423	25 536
Nitrogen dioxide	1 109	1105	6 407	5433	1 388	1 363	8 904	7 901
Nitric Oxide	180	180	1 039	881	225	221	1 444	1 282
Sulfur dioxide	6 695	5273	21 303	16287	6 966	4 055	34 964	25 615
Carbon monoxide	390	330	1 417	1118	36	33	1 843	1 481
Other	17	17	41	41	41	41	99	99

Note: Permitted emissions to air by Ministry of Environmental Protection in table indicated as Limit of emissions and actual volume of emissions indicated as Actual.

Report Data of Heat Distribution Companies of CAEPCO for 2010 (tons)

Emissions of air pollutants	Pavlodar Heat Distribution Company		Petropavl Heat Distribution Company		Heat Distribution Companies, CAEPCO, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	1,85	1,89	3,33	1,11	5,18	3,00
Fluorochemical	0,02	0,02	0,001	0	0,02	0,02
Nitrogen dioxide	0,22	0,22	0,09	0,07	0,31	0,29
Iron II oxide	0,80	0,80	0,24	0,22	1,04	1,02
Manganese and its compounds	0,06	0,05	0,014	0,01	0,07	0,06
Carbon monoxide	0,55	0,58	0,26	0,07	0,81	0,65
Other	0,21	0,22	2,72	0,74	2,93	0,96

Report Data of Pavlodar Heat Distribution Company for 2010 (tons)

Emissions of air pollutants	Pavlodar Heat Distribution Company		Ekibastuz Heat Distribution Company		Total, Pavlodar	
	Limit	Actual	Limit	Actual	Limit	Actual
Total, including	1,00	1,04	0,85	0,85	1,85	1,89
Fluorochemical	0,01	0,01	0,01	0,01	0,02	0,02
Nitrogen dioxide	0,10	0,10	0,12	0,12	0,22	0,22
Iron II oxide	0,55	0,55	0,25	0,25	0,80	0,80
Manganese and its compounds	0,04	0,04	0,01	0,01	0,06	0,05
Carbon monoxide	0,16	0,19	0,39	0,39	0,55	0,58
Other	0,14	0,15	0,07	0,07	0,21	0,22

In 2010 the nomenclature of pollutants was increased, as well as volumes of environmental volumes. Those changes are regulated by the developed draft of Standards for MPE for Pavlodar Heat Networks of “PHDC”, JSC. According to the Conclusion of state environmental expertise №1-12/JUR-322 dated 07.06.2010 of the draft volume for MPE for “Pavlodar Heat Distribution Company“, JSC, the volume of environmental emissions is equal to 1.0133 tons. In the report data of “PHDC”, JSC for 2010 for Pavlodar Heat Networks the volume of emissions is indicated as 1.04 tons/year subject to present adjustments regulated by the draft of MPE.

	Contents, mg/Nm ³ for $\alpha = 1,4$									
	CHP-2 PE		CHP-3 PE		Ekib. CHP PE				CHP-2 SKE	
	MPE	Actual	MPE	Actual	Pipe # 1		Pipe # 2		MPE	Actual
					MPE	Actual	MPE	Actual		
Nox	371	367	555	552	516	443	553	342	682	553
SO ₂	1 598	1 104	1 404	1 127	1 264	157	1 264	179	1 177	618
CO	97	79	97	94	100	180	310	176	300	168

Report Data of Electricity Networks of CAEPCO, JSC for 2010 (tons)

Emissions of air pollutants	JSC “PREDCD”		JSC “North Kazakhstan REDC”		Electricity Networks, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Total	6,37	6,33	11,34	11,31	17,71	17,64
Mineral Oil	0,37	0,37			0,37	0,37
Nitrogen dioxide	0,26	0,26	0,001	0,00	0,261	0,26
Nonorganic dust 70-20% silica	0,38	0,36	5,24	5,24	5,62	5,60
Sulfur dioxide	0,11	0,11	0,16	0,16	0,27	0,27
Carbon monoxide	3,44	3,42	0,82	0,82	4,26	4,24
Other	1,82	1,82	5,03	5,00	6,85	6,82

The Company’s Enterprises didn’t exceed the maximum permissible emissions in 2010.

3.2. Carbon dioxide (CO₂) emissions

After entering into force of Kyoto Protocol in the Republic of Kazakhstan on September, 17, 2009, The Company organized a work on preparation of inventory audit of greenhouse gas emissions and consumption of ozone-depleting substances.

“PAVLODARENERGO”, JSC

On 14 December, 2010 the company issued Order № 2491 “On holding of a tender” for purchasing of works on inventorization of GHG emissions and consumption of ozone-depleting substances at CHP-2, CHP-3 and EkiCHP for 2010. The fixed date of tender is 6 January, 2011; a tender board was established. The announcement on tender holding was published in newspaper “Zvezda Priirtysh’ya” №143(18091) on 16 December, 2010.

In 2010 “PAVLODARENERGO”, JSC produced 3, 189 mln. kW-h of electric energy and 4.309 mln. Gcal of heat energy. 2, 218.721 thousand tons of Ekibastuz coal and 4.299 thousand tons of mazute were used for energy production. The results of the conducted inventarization are in the table below.

GHG emissions for 2010 "Pavlodarenergo", JSC

	CO ₂	CH ₄	N ₂ O	SF ₆	Total
	Amount of GHGs in the equivalent of CO ₂ , tons				
CHP-2	1 097 997	175	5 118	-	1 103 291
CHP-3	3 154 258	504	14 766	6	3 169 535
EkiCHP	875 448	138	3 980	-	879 566
PE, JSC	5 127 703	817	23 865	6	5 152 392

“SEVKAZENERGO”, JSC

In 2010 “SEVKAZENERGO”, JSC produced 2, 409.8 mln. kW-h of electric energy and 1.926 mln. Gcal of heat energy. 2,312.328 thousand tons of Ekibastuz coal and 1.961 thousand tons of mazute were used for energy production. For calculation the company used the Method of assessment of greenhouse gas emissions approved by Order of Ministry of Environmental Protection of RK № 251-e 62-p dated 24 November, 2009; during the calculation the Methodological instructive regulations for calculation of GHG emissions from heat power plants and boiler houses (№280-ө dated 05.11.2010), Astana, 2010, and Methodological instructive regulations for calculation of GHG emissions from enterprises’ vehicles ((№280-ө dated 05.11.2010), Astana, 2010) were taken into consideration. For 2010 2, 804, 003.491 tons of CO₂ were produced and emitted, namely:

- while burning of coal and mazute in stations’ boiler units 3, 803, 020.605 tons of CO₂ were discharged through the stacks into the atmosphere,
- while burning of benzine and diesel fuel used for vehicles 982.886 tons of CO₂ were discharged into the atmosphere.

Based on Order of the Ministry of Environmental Protection of RK № 348-п dated 14 December, 2007 “On approval of the Regulations of inventorization of GHG emissions and ozone-depleting substances”, the Passport of inventorization for 2010 was developed; on 29 March, 2010 it was furnished to the Environmental Authorized body in North Kazakhstan oblast. The developer of the Passport is “PETROECOCENTR”, LLP. The results of the conducted inventorization are in the table below:

№	Greenhouse gas	Chemical formula	Volume of GHG emissions, tons	Volume of GHG emissions in the equivalent of CO ₂ , tons
1.	carbon dioxide	CO ₂	3 784 857,959	3 784 857,959

2.	methane	CH ₄	39,636	832,347
3.	nitrous oxide	N ₂ O	59,075	1 8313,186
			Итого:	3 804 003,491

Overall the Company produced 5, 599 mln kWh of electric energy and 6.235 mln GCal of heat energy in 2010. 5, 631.049 thousand tons of Ekibastuz coal and 6,260 thousand tons of mazut were used for production of the energy. While burning of coal in boilers 8, 931.7 thousand ton of CO₂ were discharged into atmosphere through the stacks.

3.3. Placement of ash slag emissions

Value of ash slags, permitted and actual, for the group of companies “PAVLODARENERGO“, JSC and “SevKazEnergo“, JSC for 2010 (tons)

Wastes	“PAVLODARENERGO“		“SevKazEnergo“		CAEPCO, total	
	Limit	Actual	Limit	Actual	Limit	Actual
Ash slags	1 545 011	1 345 045	1 016 956	952 349	2 561 967	2 297 394

Including CHPs of PAVLODARENERGO, JSC (tons)

Wastes	CHP-2		CHP-3		EkiCHP		PE, JSC, total	
	Limit	Actual	Limit	Actual	Limit	Actual	Limit	Actual
Ash slags	291 822	288 892	1047 149	850124	206040	206029	1545011	1345045

The Company Enterprises didn't exceed the maximum permissible ash slags emissions in 2010.

4. Implementation of 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 an environmental protection activities for the maximum possible reduction of emissions into the environment. Copies of the Program 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 venture pipes with ash collecting efficiency equal 97%, with battery emulsifiers of the second generation for each boiler, with the efficiency 99,5%. Modernization of the ash catchers will allow decrease in coal ash output concentration to 250-300 mg/m³ and put down sulfur oxides without any additives by 5-15%.

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

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

developed an environmental protection actions and approved them by the Ministry of Environmental Protection for the period of 2009-2011 for the amount of 4 444 752 thousands KZT. For the period 2009-2010, 22 actions of 27 planned actions were fully performed for the total amount of 1, 434, 436 thousands KZT, including two additional actions.

The main ones are the following:

- Reconstruction of dust-extraction plants at boiler units №5 and №2 CHP-2 with installation of battery emulsifiers of the second generation; the cost of works is 155, 463 thousand tenges;
- Reconstruction of dust-extraction plants at boiler units №5 and №4 CHP-3 with installation of battery emulsifiers of the second generation; the cost of works is 3,495,630 thousand tenges;
- Development of new ash pond construction project for CHP-3 – 9, 758 thousand tenges;
- Strengthening of dikes of the CHP-2 and CHP-3 ash ponds; works to enhance the reliability of hydro-technical facilities, the cost of works is 151, 877 thousand tenges, with additional actions;
- Reconstruction of dust-extraction plants at boiler units №8 and №7 EkiCHP with installation of battery emulsifiers of the second generation; the cost of works is 48, 029.9 thousand tenges;

“Pavlodar Heat Distribution Company”, JSC

developed Environmental Protection Action Plan for 2008-2010 that were approved by "Irtys Department of Environmental Regulation and Control of Ministry of Environmental Protection" for the amount of 2, 016 thousand tenges. In 2010, 11 actions of 16 planned were fully implemented for the amount of KZT 930.0 thousand tenges.

The main actions are the following:

Pavlodar Heat Distribution Company

- Cleaning of walls of ventilation systems of stationary welding stations from suspended matter and sediments – 12.0 thousand tenges;
- Testing of the dust exhausting system – 5.0 thousand tenges;
- Repairs of the dust exhausting plant at the woodworking site – 37.0 thousand tenges;
- Testing for operation efficiency of dust exhausting plant of woodworking site, the costs made 5.0 thousand tenges;
- Collection of utilized mercury-containing lamps and delivery of them for demercurization, costs made 14.5 thousand tenges;
- Sanitary cleaning of territories of Central Heat Point, transmission and internal network (territories for which Heat Distribution Company is responsible) from the garbage, costs made 403.0 thousand tenges.

Ekibastuz Heat Distribution Company

- Cleaning of walls of ventilation systems of stationary welding stations from suspended matter and sediments, costs made 11.0 thousand tenges;
- Cleaning of water supply and sewage wells, costs made 38.0 thousand tenges;
- Planting of greenery. Planting of flowers, shrubs, costs made 13.0 thousand tenges;
- Sanitary cleaning of territories of HDN-1, HDN-2 transmission and distribution networks from garbage, costs made 380.0 thousand tenges;

"Pavlodar Regional Electric Distribution Company", JSC

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

"Pavlodar Regional Electric Distribution Company", JSC

To minimize the impact of production processes of the enterprise "PREDC", JSC on the environment and human health, environmental protection activities were developed and agreed with the authorized environmental bodies for the period 2010-2012 for the amount of 61,066.15 thousand tenges. 7 actions were planned for implementation in 2010; out of them, 5 were fully implemented and amounted to 9,624.2 thousand tenges.

The main ones:

- Planting of greenery (trees and bushes), planting of new lawns and flowerbeds, costs made 120.0 thousand tenges;
- Collection and storage of wastes in metal containers with further removal from the plant area to authorized waste ponds, costs made 713.3 thousand tenges;
- Collection of utilized mercury-containing lamps into special containers and delivery of them for demercurization, costs made 31.9 thousand tenges;
- Application of shrink sleeves during the repair KJI-10/0,4 (cable line), costs made 8,750.0 thousand tenges;

"SEVKAZENERGO", JSC

To create a higher level of environmental awareness and responsibility of its management and employees, in 2010 "SEVKAZENERGO", JSC started working on implementation throughout the company of Integrated Management System consisting of Quality Management System, Environmental Management System, and Occupational Health and Safety Management System to comply with international standards ISO 9001:2008 and ISO 14001:2004, and standard OHSAS 18001:2007.

"SEVKAZENERGO", JSC developed nature conservation activities and had them agreed with the Ministry of Environmental Protection of RK for the period 2010-2012 for the total amount of 2, 237, 095 thousand tenges.

In 2010 14 nature conservation activities were planned for implementation for the amount 1, 073, 083 thousand tenges; 13 of them were implemented and amounted to 1, 889, 536 thousand tenges, which is equal to 176% of the planned amount.

The main activities are:

- Installation of titanium battery emulsifiers of the 2nd generation at boiler units №4 and №11, costs made 148, 052.0 thousand tenges,
- Repair of worn-out parts of ash collectors, cost made 32, 851 thousand tenges,
- Reconstruction of boiler units to decrease hazardous emissions, costs made 139, 063 thousand tenges,
- Re-cultivation of the 2nd section of ash pond № 2 up to the design reference mark, costs made 12, 800 thousand tenges,
- Enlarging of separation dike of the ash pond № 3 up to the design reference mark, costs made 5, 722 thousand tenges,
- Construction of the 3rd section of ash pond № 2, costs made 1,518 ,529 thousand tenges.

“Petrovavl Heat Distribution Company”, LLP

developed nature conservation activities and had them approved with State Institution “Esil Environmental Department” for the period 2010-2014 for the amount 95.782 thousand tenges. The main activities are:

- Repair and cleaning of aspiration equipment. Costs made 25 thousand tenges;
- Subscription to magazine “Ecology and Industry of Kazakhstan“, costs made 70.782 thousand tenges.

"North-Kazakhstan Regional Electric Distribution Company", JSC

developed 7 nature conservation activities and had them approved with the Ministry of Environmental Protection of RK Environmental Protection of RK for 2010 for the amount 122, 422 thousand tenges; all the activities were implemented and amounted to 161, 723 thousand tenges. The main activities are:

- Repair of worn-out equipment. Costs made 160, 034 thousand tenges,
- Monitoring of the rational utilization of water for industrial, house-hold and other aims. Costs made 688 thousand tenges,
- Organization of wastes collection and transportation procedure excluding environmental pollution. Costs made 899 thousand tenges.

5. Governmental environmental control

Governmental inspections on environmental issues

In 2010 the following state authorities carried out the series of check-ups at the Company's enterprises:

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

- an unscheduled inspection by Irtysh Environmental Department of Environmental Regulation and Control Committee of the Ministry of Environmental Defense of the Republic of Kazakhstan to confirm compliance with environmental legislation;
- a scheduled inspection by Public prosecutor's office of Pavlodar oblast to confirm the company's compliance with the legislation the issues of disposal, recycling and storage of industrial, solid domestic and mismanaged wastes for the period from 2008 up to 9 months 2010;
- a scheduled inspection of “Pavlodarenergo” JSC activity by State Labor Inspectorate of Pavlodar oblast of the Ministry of Labor and Social Protection concerning the company's compliance with labor legislation and of occupational safety at CHP-2, CHP-3;
- a scheduled inspection of CHP-2 and CHP-3 by Department Administrations of the State Sanitary and Epidemiological Committee in Pavlodar;
- a scheduled inspection of CHP-2, CHP-3 by Fire Control Administration of the Emergency Department of Pavlodar oblast;

“Pavlodar Heat Distribution Company“, JSC

- a scheduled sanitary and epidemiological investigation of labour conditions at “Pavlodar Heat Distribution Company“, JSC conducted by Department Administrations of the State Sanitary and Epidemiological Committee in Pavlodar of the Ministry of Health of the Republic of Kazakhstan.

“Pavlodar Regional Electric Distribution Company“, JSC

In 2010 the following state authorities carried out the series of check-ups at the Company's departments:

- scheduled inspection of technical condition and operation of the equipment at “PREDC”, JSC by the Committee on State Energy Control of the Ministry of Energy and Mineral Resources of RK;
- scheduled sanitary and epidemiological inspection of working conditions at “PREDC”, JSC by Department Administrations of the State Sanitary and Epidemiological Committee in Pavlodar;
- scheduled inspection on sanitary rules and norms, as well as hygienic standards at “PREDC”, JSC by State Agency Department Administrations of the State Sanitary and Epidemiological Committee in Pavlodar of the Ministry of Health of the Republic of Kazakhstan;

As a result of inspection some breaches were detected and completely eliminated by the moment.

“SEVKAZENERGO”, JSC

- Unscheduled inspection by Esil Environmental Department of the Committee of Environmental Regulation and Control of the Ministry of Environmental Protection of RK for North-Kazakhstan Region on compliance of the RK ecological laws at discharges of partially-clean waters from the Beloye Lake into the Ishim River;
- Scheduled inspection by North-Kazakhstan Territorial Division of Ishim Basin Inspection on Regulation of usage and protection of water resources of RK;
- Scheduled inspection by Esil Environmental Department of the Committee of Environmental Regulation and Control of the Ministry of Environmental Protection of RK for North-Kazakhstan Region on compliance of the RK ecological laws;

“North Kazakhstan REDC”, JSC

In 2010 State ecological inspection was not carried out.

“North Kazakhstan Heat Distribution Company”, LLP

- Scheduled inspection by Esil Environmental Department of the Committee of Environmental Regulation and Control of the Ministry of Environmental Protection of RK for North-Kazakhstan Region on compliance of the RK ecological laws;

As a result of inspection some breaches were detected and completely eliminated by the moment.

Information on the reports on Environmental Matters

№ п/п	Type of information	The organization or the official the information is to be furnished to	The deadline
1.	Form №2-ТII air (annual) abridgement	Regional Statistics Administrations	by January, 24
2.	Form № 4-OC on current expenses for environmental protection (annual)	Regional Statistics Administrations	by February, 23
3.	Form №2-ТII air (annual)	Environmental Department (Pavlodar) Esil Environmental Department (Petropavlovsk)	by January, 24
4.	Form №2-ТII air (annual)	Basin Inspection (Pavlodar) Ishym Basin Inspection (Petropavlovsk)	by January, 10
5.	Form №1BK (water-supply and sewer system)	Regional Statistics Administration (Pavlodar)	by February, 22
6.	Form “Report on hazardous wastes per year” (annual) in section	Irtysk Environmental Department (Pavlodar) Esil Environmental Department (Petropavlovsk)	by March, 1
7.	Nature conservation activities	Ministry of Environmental Protection of RK, Environmental Department (Pavlodar) Esil Environmental Department (Petropavlovsk)	by January, 10
8.	Report on compliance of Nature conservation activities	Environmental Department (Pavlodar) Esil Environmental Department (Petropavlovsk)	Every quarter, half a year, 9 months, Year
9.	Report on Industrial Environmental Control Programme at “PAVLODARENERGO”, JSC	Ministry of Environmental Protection of RK, Environmental Department (Pavlodar) Esil Environmental Department (Petropavlovsk)	Every quarter, half a year, 9 months, Year
10.	Report on Industrial Environmental Control Programme	Environmental Department (Pavlodar) Esil Environmental Department (Petropavlovsk)	Every quarter, half a year, 9 months, Year

No claims on the reports provided. All reports were submitted in due time.

6. Implementation of environmental investment activities

Development and implementation of investment programs the Company due to the limited resources of the existing ash dumps, increased requirements of current environmental legislation. In addition, this program will increase sales of electricity and heat energy, projected with growth in energy consumption.

“PAVLODARENERGO”, JSC

Construction of ash dumps (CHP-3, CHP-2, Ekibastuz CHP)

Since 2009 the company started implementation (design and preliminary works on ash pond drainage system are being implemented) of one of the major investment projects – building of new ash ponds for CHP-3 and CHP-2. The scheduled time of termination of the building works is 2012 for CHP-3 and 2013 for CHP-2. As for Ekibastuz CHP, the works start in 2011, end in 2012.

Ash pond of CHP-2 and CHP-3 constitute a single industrial unit, the western part of which is presented 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 site for construction, a section borders upon the acting ash pond of CHP-3 within the existing land allocation 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 site for construction, a section borders upon the acting ash pond of CHP-2 within the existing land allocation of 63.7382 ha.

In 2010 the company received the Conclusion of state ecological expertise for project materials: “Construction of the 2nd stage of CHP-3 ash pond of “Pavlodarenergo”, JSC” (conclusion №3-2-12/4544 dated 10.09.10)

The construction budget for CHP-3 ash pond is 2.497 billion tenge, CHP-2 ash pond - 2.853 billion tenge, and Ekibastuz CHP ash pond – 0.268 billion tenge. The cost of works will be specified after the project implementation.

Reconstruction of ash catching facility including installation second generation battery emulsifiers.

Beginning from 2009 a stage-by-stage installation of emulsifiers on CHP-2, CHP-3 and Ekibastuz CHP boilers was carried out.

Due to implementation of this activity the ash emissions in flue gases are decreased by 4-5 times, sulfur emissions – by factor of 1.2 for each boiler. By 2015 all 11 boilers will be equipped with such emulsifiers.

Emulsifiers on boilers №3, №4 and №5 at CHP-3, boilers №2 and №5 CHP-2, and boilers №8 and №7 at Ekibastuz CHP have been already installed. The battery titanium emulsifiers of the second generation are purchased from a manufacturing company – “SVERDLOVENERGO”, OJSC (the energy and electrification company).

Modernization of flue gas cleaning system.

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

Modernization of ash catching facilities allows to reduce the output concentration of coal ash to 250-300mg/m³, as well as to suppress sulfur oxide without any additives by 5-15%.

Measures to reduce the negative impact on the environment

- Modernization of boiler units in order to change a combustion mode and decrease NO_x emissions (started in 2009);

- Decreased use of asbestos and gradual transition to basalt-containing insulation materials. The lifetime of new materials is 45 years longer; such materials possess better insulation characteristics. It is planned to decrease losses with radiation in pipelines by 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.
- Started installation of stationary gas analyzers which measure SO_x, NO_x, CO₂, dust emissions in flue gases during their continuous operation.

Modernization of main equipment, commissioning of new capacities

- installation of boiler unit of BKZ-420 type (№1 CHP-3), commissioning – December 2011;
- installation of a turbine unit PT-65/75 (№1 CHP-3), commissioning - 2011;
- replacement of a turbine PR-25 (№ 1 CHP-2);
- installation of a turbine unit PT-30 (№ 2 EkiCHP).

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

Turbines being installed are equipped with new accessories, including electric motors of more advanced designs, cost savings of electricity and heat for own needs will be achieved, which correspondingly increase the energy efficiency of CHP. The company is constantly working to reduce fuel consumption for energy production.

Estimated decrease in extra losses of “PHDC”, JSC for 2010 due to restoration of insulation made 57.874 thousand Gcal, with 10.242 km of isolation on the pipelines of various diameters being restored.

Lack of decrease in extra heat losses of “PHDC”, JSC in 2010 is generally caused by the fact that the average monthly ambient air temperature during January and February 2010 was significantly lower than the temperature during similar months of two previous years.

Total extra losses during January and February 2010 are equal to 68.7% of the total volume of extra losses for 2010.

Electric energy losses at “PREDC”, JSC for 2010 increased by 9.566 mln. kWh.

The main reasons of increase in extra losses in 2010 are the following:

1. Annual tendency of decrease in normative losses approved by the Department of the Agency of the Republic of Kazakhstan on regulation of natural monopolies in Pavlodar oblast.
2. In 2009 rural consumer cooperatives (194 rural consumer cooperatives, 42.9 thousand metering points) in the districts of Pavlodar oblast were transferred to subscriber maintenance.

Main activities, planned and being implemented in the 2010 year:

- installation of second generation emulsifiers on 4 boilers (boiler unit №6 EkiCHP, boiler unit № 4 CHP-3, boiler unit №2 CH-2);
- repair of worn elements of ash catching facilities;
- reconstruction of boilers aimed at the decrease of hazardous emissions into the atmosphere (modernization of boiler unit №1 CHP-3 and boiler unit №6 EkiCHP);
- installation of nitrogen oxide, sulphur oxide, carbon dioxide and ash meter equipment (The installation works on automated control device were implemented for boiler unit №2 CHP-3. (the device is being in repair). The setting-up of an automated control device for boiler unit №4 CHP-2 is in the process, as well as the installation of a automated control device for boiler unit №2 CHP-2. An automated control device for boiler unit №6 EkiCHP is at the stage of purchasing);
- construction of ash pond for CHP-3 (the project was carried out and undergone the state expertise; the company has received a permission for building and construction works; the installation of sluice-discharge pipelines and drainage is being carried out);
- repair of separating dikes of the ash pond (within the scope of the project of enlarging dikes of the existing CHP-3 ash pond the filling of the dikes up to the design reference mark);
- implementation of industrial environmental control;
- informing the public about the Company's impact on the environment.

“PAVLODARENERGO”, JSC (CHP-2, CHP-3 and EkiCHP) was one of the first companies in Kazakhstan that received a certificate confirming compliance of its activity with international environmental standards ISO 14000.

This year the company plans to start preparing for the certification to confirm its compliance with ISO 14001 (Environment Management System), as well as the ISO 9001 certification (Quality Management

System) in “PREDC”, JSC and “PHDC”, JSC. Preparations for OHSAS 18001 certification (Occupational Health & Safety Management System) will be implemented in “PE”, JSC, and its subsidiaries.

“SEVKAZENERGO”, JSC

Construction of ash pond

In September 2008 the largest investment project for the construction of № 3 stage of ash pond № 2 was initiated. The planned completion date of the project is October 2011. The total construction period is 37 months. Projected capacity of the ash pond is 8,74 millions m³, expected lifetime of the ash pond is 12 years. The project includes building of dams and increase of the life of ash ponds up to 25 years. Effective area is 202 ha. The total length of the dam is 5 kilometers. Total costs of the project are 3.5 billions KZT.

Reconstruction of ash catching facility including installation second generation battery emulsifiers.

Due to implementation of this activity, there is a decrease in emissions amounts of ash from flue gases by 6 times and emissions of sulfur by 1,2 times for each boiler.

The installation of titanium battery emulsifiers of the II generation is planned to be carried out annually for 2 boiler units. Titanium battery emulsifiers of the II generation are from the manufacturer OJSC “Power Engineering and Electrification “SVERDLOVENERGO”. Before 2013 emulsifiers all of 11 boilers will be equipped with the emulsifiers.

Measures to reduce the negative impact on the environment

- Modernization of boiler units in order to change a combustion mode and decrease NO_x emissions (started in 2009)
- Pressure rise on the existing Venturi pipes (ash catcher) from 5.2 atm to 6.5-7 atm. Due to this, ash catcher efficiency increases from 96.8% to 97.2%, and the annual emissions amount decreases by 3, 215 tons.
- Continued works on elimination of use of asbestos and its gradual substitution by basalt-containing heat-insulating materials. It is planned to decrease losses with heat radiation into the environment by the factor of 1.6, which allows decreasing of heat flow losses 2.1% and results in heat loss decrease during manufacturing process by 8 thousand Gcal.
- Started installation of stationary gas analyzers which measure SO_x, NO_x, CO₂, dust emissions in flue gases during their continuous operation

Upgrading of basic equipment, commissioning of new capacities

- installation of boiler E-270-9,8-540KGT;
- installation of turbine T-50/60-90;
- contracts for reconstruction of boiler units with the increased capacity from 220 to 270 tons of steam per hour were concluded.

Activities on energy efficiency system, reduce fuel consumption by lowering the standards specific consumption and commercial losses

Assembled CHP turbines are equipped with new accessories, including electric motors for improved designs due to what will be achieved cost savings of electricity and heat for own needs, which correspondingly increase the efficiency of the CHP. Reducing unit cost would be 317 kcal / kW and total heat consumption for production of electricity and thermal energy will amount to 84 thousands Gcal. Works on reducing fuel consumption for energy producing are held constantly.

Introduction of VFD only on group of tank pumps will save over 1.5 million kWh energy per year. Variable frequency drives are installed on the circulation, tank, makeup pumps, dust collective facilities and dust feeders. The energy-saving program is closely connected with the objectives of environmental management of CHP-2.

As a result of the decisions above, “SevKazEnergo”, JSC annually saves up to 9 thousand tons of fuel. Implementations of the above measures will reduce emissions into the atmosphere by 37 thousand tons.

Nature Conservation Activities for 2010 amounted to 1.5 billion tenges and include:

- installation of second generation emulsifiers on 2 boilers;

- repair of worn elements of ash catching facilities;
- reconstruction of boilers aimed at the decrease of hazardous emissions into the atmosphere;
- installation of nitrogen oxide, sulphur oxide, carbon dioxide and ash meter equipment;
- re-cultivation of the worked-out ash ponds;
- repair of separating dikes of ash ponds;
- implementation of industrial environmental control;
- informing the public about the Company's impact on the environment.

“SevKazEnergo”, JSC was one of the first companies in Kazakhstan that received a certificate confirming compliance of its activity with international environmental standards ISO 14000. This year the company plans to start preparing for the certification to confirm its compliance with ISO 14001 (Environment Management System), and preparation for ISO 9001 certification (Quality Management System) and OHSAS 18001 certification (Occupational Health & Safety Management System), ISO/IEC17025:2005 system (General requirements for the competence of testing and calibration laboratories).

The dynamics of funds invested in the environmental activities of “SevKazEnergo”, JSC increased over the period 2007 - 2010 years from 74 thousand tenge to 1.5 billion tenge. Funds of the investment program of “SevKazEnergo”, JSC over the period 2007-2010 increased from 1.7 billion tenge to 2 billion tenge, main part of the investments was used for implementation of environmental activities. Upon the execution of environmental activities for the year 2009 on the fact there was over-fulfillment of the planned figures by 45% (1.5 billion tenge instead of 1 billion tenge).

The company pays great attention to the study of innovative energy technologies and their possible applications in production. Program development activities for renewable energy is one of the promising areas of strategic development of the Company.

7. Compliance with the safety and health issues

“PAVLODARENERGO”

The company concluded contract № 7332.09/07-175-10 dated 15.07.2010 with “Kazakhstan Quality Organization”, LLP (KQO) for consulting services. The work on development and implementation of the Occupational Health and Safety Management System is at the stage of completion: in accordance with the approved programme of development and implementation of the occupational health and safety system, the documented procedures were developed according to international standard OHSAS 18001:2007 for the period 2010-2011. “Pavlodarenergo”, JSC conducted work on risk assessment (drawing-up of registers) at CHP-2, CHP-3 and EkiCHP. At the moment the aims and programmes concerning Occupational Health and Safety Management System are being developed. The internal audit is being conducted. Certification of Occupational Health and Safety Management System at “PE”, JSC to confirm its compliance with OHSAS 18001 requirements is planned for 4Q 2011.

“SEVKAZENERGO”

It was concluded the Contract with “Kazakhstan Training and Consulting Center”, LLP № 150/340 dd 20.04.2010 for design and survey works on introduction of quality management system, environmental management system and professional safety and health management system as for conformity with the RK Standards: ST RK ISO 9001-2009, ST RK ISO 14001-2009, ST PK OHSAS 18001-2008. And also it was concluded the contract with “TJUF Internacional Rus OOO-Predprinimatelskaya Gruppy TJUF Rejnland/Berlin-Brandenburg” № SI-31/2010/865 dated 12.10.2010 for providing services on organization and carrying out the certified audit of Integrated Management System.

Works on development and introduction of professional safety and health management system is currently at the final stage: it was developed the documenting procedures according to Program on development and introduction of professional safety and health management system under OHSAS 18001-2007 international standards for the years 2010–2011 at “SEVKAZENERGO”, JSC.

A written poll on revealing of risks (a hazard list and risk evaluation) was performed at “SEVKAZENERGO”, JSC. Besides that, it is being made the hazard lists and risk evaluation for every workplace by subdivisions.

Goals and Program for professional safety and health management system were developed for the year 2011. The internal audit in accordance with Internal Audit Program 2001 is being performed.

The 1st stage of certification audit of SEVKAZENERGO”, JSC was carried out on December, 20-24, 2010. It is planned to complete the certification of SEVKAZENERGO”, JSC in the 2nd quarter of 2011.

Social and labour relationships

The main purpose of CAEPCO, JSC in social area is to increase the level of social protection of workers of the company, their family members, non-working pensioners, and retired workers of the company and disabled people. Due to this, discounts, compensations and guarantees policies were developed by the company.

Workers were provided by special cloth and shoes, sanitary-prophylactics means and Personal Protective Devices, milk or other equivalent product, soap in accordance with current Kazakh legislations. Lump sum payments are done at birth of a child, and for the funeral of close relatives.

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

Special attention is paid to the programs of diagnosing and medical treatment of the employees, especially operation personnel. Annually, at the expense of the employer's, medical examinations are performed, daily mandatory pre-shift check-ups of operational staff are done in order to analyze the state of health of employees. Each subsidiary of the company is equipped with medical rooms, service providers, and medical professionals: physiotherapists, electricity and light therapy, laser therapy, massage and organize receptions narrow specialists. During the last several years 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 having the status of large families, or families of workers with disabled children, the administration assists their workers materially at the beginning of the school year for each child of school age. Gifts for children of employees of the company are acquired on Christmas holidays.

The management of the company pays great attention on training managers, specialists and workers. To improve the educational level of its personnel, the company has a system of motivation, which provides educational repayment amounted to 100% of average earnings and compensation of travel in both directions, if the institution is located outside of Petropavlovsk. In addition, workers have the opportunity to obtain interest-free loan for tuition purposes.

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

Department of Labor conducts a systematic picture of the working day of personnel on the plant in order to identify the reserves to increase labor productivity, improve equipment utilization, efficient time consumption meters. It identifies weaknesses in the organization and sanitary conditions of labor and production causing losses or inefficient use of working time. Based on analysis of pictures of the working day, measures on improvement of the organization of work were worked out, deadlines and executing bodies were approved by the orders. Following the verification of the implementation of activities under the approved orders, some of the activities were scheduled to be performed in 2011.

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

- training of workers to safety issues, improvement of professional skill and acquisition of adjacent specialties was organized through the educational centre;
- Certification of workplaces was performed;
- Workers were provided by special cloth and shoes , sanitary-prophylactics means and Personal Protective Devices in accordance with acting standards;
- Contracts of Employer’s Liability Compulsory Insurance for injuries or disease arising out of their employment and contracts of obligatory insurance of Civil Liability of owners of the objects which activity is connected with danger of injury to the third parties;
- constant monitoring of working conditions is made;
- preliminary and periodic medical examination of workers is organized;
- improvement of workers in sanatorium-dispensary is arranged.

Reports on occupational Safety, Health and labour Protection

№ п/п	Name of reports	Submitted to	Date of submitting
1.	Report on traumatism 7-TPD (traumatism and professional diseases) (annually)	Regional Statistics Administrations	by February, 25
2	Report on traumatism (monthly, quarterly)	Regional Statistics Administrations; For SKE - Territorial Inspectorate “Committee for State Power Control”; Public Institution “Department for labor and social protection of the RK for North-Kazakhstan Oblast”	by the 10th day of every month
3.	Monitoring of labor safety measures	Public Institution “Department of Control and Social Protection of the Ministry of Labour and Social Protection of Pavlodar oblast” Public Institution “Department for labor and social protection of the RK for North-Kazakhstan Oblast”	As of July 1, as of January 1

8. 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.

List of regulatory legal acts used by environmental services of the Company enterprises

Type of document	Name of document	Number	Effective date
Constitution	The Constitution	-	30.08.1995
Code	Labor Code of the Republic of Kazakhstan	252-III	15.05.2007
Law	On Obligatory Environmental Insurance	93	14.12.2005
Law	On Subsoil and Subsoil Use	2828	27.01.1996
Law	On Sanitary-Epidemiological Wellbeing of Population	361	04.12.2002
Code	On Population Health and Public Health Services	193-IV	18.09.2009
Code	Environmental Code	212-II	09.01.2007
Code	Water Code	481-II	09.07.2003
Code	Land Code	442-II	20.06.2003
Code	On Taxes and other Obligatory Payments to the Budget	99-IV	10.12.2008
Government Regulation of the Republic of Kazakhstan	On Approval of Governmental Rules of Accounting of GHG Emitters and Ozone-destructive Substance Use	124	08.02.2008
Government Regulation of the Republic of Kazakhstan	On Approval of Rules of Limitation, Suspension or Reduction of GHG Emissions	128	11.02.2008
Government Regulation of the Republic of Kazakhstan	On Approval of Rules of GHG and Ozone-destructive Substance Emissions Inventorization	5094	13.12.2007
Government Regulation of the Republic of Kazakhstan	On Approval of Rules of Development and Validation of Standards of Maximum Permissible GHG Emissions and Ozone Destructive Substance Use	5087	13.12.2007
The Order of Minister of Environmental Defense of the Republic of Kazakhstan	On Approval of Waste Classifier	169-П	31.05.2007
The Order of Minister of Environmental Defense of the Republic	On Approval of a Hazardous Waste Descriptor Form	128-П	30.04.2007

of Kazakhstan			
The Order of Acting Minister of Environmental Defense of the Republic of Kazakhstan	On Approval of Rules of Inclusion of Nature Management Conditions into Environmental Emissions Permits	112-п	16.04.2007
The Order of Minister of Environmental Defense 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
Standard of the Republic of Kazakhstan	ISO	14001	2006
Standard of the Republic of Kazakhstan	ISO	19011	2002
International Standard	ISO	14001	2004
International Standard	ISO	19011	2002
Guiding Normative Document	The Guidance on Assessment of Environmental Pollution Level with Toxic Production and Consumption Wastes	03.3.0.4.01-96	1996
Guiding Normative Document	The Order of Rationing of Generation and Allocation of Waste Products	03.1.0.3.01-96	1996
Building Performance Requirements	Internal Water Supply and Sewerage System of the Buildings	4.01-41-06	2006
Sanitary Rules and Regulations	Sanitary Standards of Working with Mercury, its Compounds and Mercury-filled Devices	1.10.083-94	1994
State Standard	Secondary Ferrous Metals. General Technical Requirements	2787-75	1975
State Standard	Scrap and Wastes of Non-Ferrous Metals and Alloys	1639-93	1993
Management Directive	Methods of Estimation of Gross and Specific Air Emissions of Hazardous Substances from CHP boiler plants	34.02.305-98	1998
Management Directive	Rules for Technical Operation of Power Stations and Networks in the Republic of Kazakhstan	34 PK.20.501-02	2002
The Order of Minister of Environmental Defense of the Republic of Kazakhstan	On Approval of Rules of Public Hearings	135-п	07.05.2007
The Order of Minister of Environmental Defense of the Republic of Kazakhstan	On Approval of Methods of Normative Air Emissions Estimation	158-п	21.05.2007
The Order of Minister of Environmental Defense of the Republic	On Approval of Rules of Coordination of Production Ecological Monitoring Programs and Reporting Requirements of the Results of	123-п	24.04.2007

of Kazakhstan	Production Ecological Monitoring		
The Order of Minister of Environmental Defense of the Republic of Kazakhstan	On Approval of Standard Environmental Activities List	119-п	24.04.2007
The Order of Acting Minister of Public Health Services of the Republic of Kazakhstan	On Approval of Sanitary-Epidemiological Rules and Regulations "Sanitary and Epidemiological Requirements for Production Facilities Designing"	334	08.07.2005
Government Regulation of the Republic of Kazakhstan	On Approval of Rules of Liquidation Landfill Funds Organization	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
Akhim's Regulation	Pavlodar Sewerage System Operating Rules	1255/21	11.10.2007
Akhim's Regulation	Ekibastuz Sewerage System Operating Rules	540/11	18.10.2004
State Standard	"Hazardous Freight. Classification and Marking"	19433-88	1988
State Standard	"Labor Safety Standards. Manufacturing Equipment. General Safety Requirements"	12.2.003-91	1991
State Standard	"Labor Safety Standards. Harmful Substances. Classification and General Safety Requirements"	12.1.007-76	1976
State Standard	"Labor Safety Standards. Manufacturing Equipment. General Ergonomic Requirements"	12.2.049-80	1980
Law	On Industrial Safety at Dangerous Production Facilities"	314	03.04.2002
Law	On Safety of Chemical Production	302	21.07.2007
Rules	Freight Railway Transportation Rules	429-I	23.11.2004
Law	On Rail Transportation	266	08.12.2001

President of CAEPCO, JSC

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Deputy Chairman of the Board
for the production of PAVLODARENERGO, JSC

Shevtsov V.G.

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for the production of SEVKAZENERGO, JSC

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Environmental and Social Action Plan of «Central-Asian Electric Power Corporation», JSC for the year 2010

ESAP – corporate/ main CHPs and distribution companies								
No	Action	Environmental Risks / Liability / Benefit	Legislative Requirement / Best Practice	Investment Needs / Resources (Euros ,000s)	Timetable To be completed by the End of Year	Target and Evaluation Criteria for Successful Completion	Comment	Report
1	<p>Publish a corporate EHS report and make it publicly available (including on the internet). The report to be in compliance with the EBRD's annual reporting requirement, and to include the following information:</p> <ul style="list-style-type: none"> - Key environmental performance indicators (KPIs) - Environmental performance - Greenhouse gas emissions (CO₂) for each plant and Company - Legislative issues, including compliance and fines/penalties - Health and safety performance including information on statistics - social and labor issues 	<p>Ensure that best practice is adopted across the organization and that there is transparency in environmental performance. Reporting of environmental performance to stakeholders.</p>	<p>Best Practice and EBRD requirement</p>	<p>Internal resources</p>	<p>2009 - then annually</p>	<p>Publication of the report</p>	<p>EHS report should take into account the problem of future investment plans necessary for good quality of energy and heat delivery to the communities. The report should inform the community on the new procedures for client contacts, community interaction in accordance with the Stakeholder Engagement Plan.</p>	<p>Corporate EHS Report of “Pavlodarenergo” JSC (“PE”, JSC) for 2009 was published in “Energetic” newspaper №8 (2366) dated 23 April, 2010; the EHS report of “SevKazEnergo”, JSC (“SKE”, JSC) was published in “North Kazakhstan” regional newspaper №65 dated 29 May, 2010. “PE” JSC reports for 2009 and 2010 can be found in the Internet at: http://www.pavlodarenergo.kz/about/documents/reports/ the report of Central-Asian Electric Power Corporation, JSC for 2009 was posted on the company’s site: http://www.caepco.kz/page.php?page_id=38&lang=1 the report of Central-Asian Electric Power Corporation, JSC for 2010 will be posted by the end of April.</p>
	<p>Retrenchment. Develop a retrenchment programme, whenever more than 100 people are to be laid off any subsidiary in one go.</p>	<p>Need to ensure appropriate systems are in place when dealing with any staff reductions, and that any reductions are made in a transparent manner to minimize social impacts and provide as much support to staff as possible (including retaining if needed)</p>	<p>EBRD and best practice</p>	<p>Internal</p>	<p>2009</p>	<p>Programme in place</p>	<p>Any major retrenchment needs to be communicated to the Bank at the time of decision making, as well as summarized in the Annual report</p>	<p>The Company developed regulatory documents and adopted the process connected with the termination of the employment contracts, which is based on the possible planned staff reduction. The process was enforced with Direction №14 dated 28 June, 2007 (“SKE”, JSC), and Regulations “On company’s personnel” dated 3 June, 2008 (“PE”, JSC, article 16.6). At the moment, within the bounds of adoption of the Integrated Management System (IMS), the business process is being revised, and the process provides for the following:</p> <ol style="list-style-type: none"> 1. Obligatory notification of regional state social protection authorities 2 months prior to reduction. 2. Notification of the employees 1 month prior to

							<p>the planned reduction.</p> <p>3. The offer of other vacancies to the redundant, both in the present company and other enterprises of the Group.</p> <p>4. Possibility of re-skilling to fill vacancies.</p> <p>5. Creation of temporary work places (for the period of repair works, etc.) and transfer of the redundant to those places.</p> <p>6. Payment of remuneration in the amount provided for in Labour Code of the Republic of Kazakhstan.</p>
<p>Stakeholder Engagement Programme (SEP). Develop an SEP to address both worker and public stakeholder engagement programmes at the individual sites as well as corporate. Draft prepared by Atkins in January 2009 – to be updated annually by the Company and audited min every 5 years externally</p>	<p>SEP is required for both corporate as well as individual sites, This needs to include a grievance plan (complaints procedures) to allow staff and external stakeholders (public, etc) to voice concerns, opinions etc. Good stakeholder engagement reduce risk of civil unrest and public concern.</p>	EBRD	Internal and external	2009	SEP in place updated on a annual basis with summary provided to the Bank in Annual Report	SEP will allow for good public communications program.	<p>The Company has corporate sites: http://www.caepco.kz, http://www.sevkazenergo.kz, http://www.pavlodarenergo.kz, http://www.astanaenergobytkz.kz). The following columns can be found on the sites: “Public relations”, “To consumers”, “News” “Questions and answers”, which contain information about tariffs, the order of execution and issue of technical specifications, formation of contracts and other reference information. Consumers can address theirs questions, remarks and suggestions. The information is updated every 2-3 days.</p> <p>Within the frameworks of the integrated management system, the Company developed the following:</p> <ol style="list-style-type: none"> 1. The Regulations on informing the public and the company’s employees; 2. The order of office work procedures; 3. Management of inappropriate products; <p>The above mentioned documents provide all stakeholders with the information and describe actions in case of any external requests (questionnaires KPI-7-01(QMS) “Consumer feedback”). In accordance with Law of the Republic of Kazakhstan №272-І “On natural monopolies...” dated 9 July, 1998, public hearings are held twice a year, with the participation of the council of experts, the consumer rights protection society, cooperatives for apartment owners, mass media, and all stakeholders.</p> <p>Additionally, “PE”, JSC developed the following Documentary Procedures on environmental issues:</p> <ol style="list-style-type: none"> 1. “The order of public engagement, social organizations and mass media interaction concerning environmental issues” DP-10-04-08 (EMS). Trust line telephone numbers are published in mass media, which can be used by the stakeholders to inform on cases of environmental security violation; from time to time the environmental inquiries are carried out.

							2. “The order of internal and external communication on environmental issues” DP-10-08-08 (EMS). The information concerning the environmental security violation received from organizations and the public is worked out.
<p>Management systems – ISO, OHSAS, EMAS</p> <p>CHP units (PetroPav and Pavlodar Energo, Eki CHP) - Develop and implement OHSAS 18001 Health and Safety Management System (EMS). Maintain ISO 14001 certification.</p> <p>Distribution companies: propose the exact timeline for the implementation of ISO 14001 Environmental Management System (EMS).</p>	<p>Ensure that best practice is adopted across the organization. External certification to ISO14001 and OHSAS 18801 provides third party assurance of performance and a commitment to continual improvement.</p>	<p>Best Practice and EBRD requirement</p>	<p>Internal resources</p>	<p>PTETS - 2010/12</p> <p>PavlodarEnergo CHP – 2009/2010</p> <p>Distribution companies: 2009 – selection of the contractor for ISO training and preliminary training 2011- implementation</p> <p>CAEPCO (holding Company) to be certified by 2012</p>	<p>Certification to ISO14001 and OHSAS 18001 both at</p>	<p>PTETS - ISO 14001 certification attained in 2007. The international certification body (company) will be changed every 5 years.</p> <p>PavlodarEnergo CHP: EMS implementation planned by the end of 2008.</p> <p>Distribution companies: EMS implementation needs the uniform group approach, as a result the real deadline for implementation should be in 2011 with the first selection of consultants in 2009</p>	<p>ISO14001:2004. The Company acquired certificate of conformity № 751100406 dated 14 December, 2009 issued by “TÜV Rheinland Inter Ctrt” confirming that the environmental management system of “Pavlodarenergo”, JSC (“PE”, JSC) was adopted and being implemented in accordance with the requirements of ISO14001:2004. In April 2010 an inspection audit of ISO 14000 system for 2009 was carried out at “SevKazEnergo”, JSC (“SKE”, JSC). The certificate validity expired in November 2010.</p> <p>In Petropavlovsk the certification authority “TÜV International RUS” (group “TÜV Rheinland Inter Ctrt”(Berlin-Brandenburg) carried out the audit of the company’s readiness to adopt the integrated system of ISO 9000, ISO 14000, and OHSAS 18000. Certification is planned for April, 2011.</p> <p>“Pavlodarskiye Teplovyie Seti”, JSC (“PHDC”, JSC) and “Pavlodar Regional Electric Distribution Company”, JSC (“PREDC”, JSC) concluded a contract with “Kazakhstan Quality Organization”, LLP on development and adoption of ISO 9001:2008, ISO 14001:2004, OHSAS18001:2007 management systems.</p> <p>The work is planned to be completed in 2011, certification - 4Q2011. At the moment the work includes adoption of documented procedures and familiarization with the company’s policy and aims. The internal audit on results of adoption of internal documentation, their compliance with international standards, and internal documentation and records management was carried out.</p> <p>23.08-26.08.10 the company “TUV International RUS” carried out the first supervisory audit at “PE”, JSC. Within the framework of the audit the company proved that Environmental Management System based on ISO 14001:2004 standard is properly operated and is being developed. The certification body confirmed the validity of the certificates of conformity.</p> <p>OHSAS 18001. “PE”, JSC concluded agreement № 7332.09/07-175-10 dated 15 July, 2010 on consulting services with “Kazakhstan Quality Organization”, LLP. The work on development and adoption of Occupational</p>

							Health and Safety Management System is at the stage of completion: the necessary documentary procedures were developed in accordance with the approved programme of development and adoption of occupational health and safety system on the basis of international standard OHSAS 18001:2007 for the period 2010-2011. At CHP-2, CHP-3 and Ekibastuz CHP the work on risk assessment was carried out (drawing-up of registers). At the moment the aims and programmes concerning Occupational Health and Safety Management System are being developed. The internal audit is being conducted. Certification of Occupational Health and Safety Management System to confirm its compliance with OHSAS 18001 requirements is planned prior to 4Q2011.	
2	<p>Prepare a formal ESIA (Environmental and Social Impact Assessment) for all future development projects that fall under Annex 1 of EU EIA Directive and National legislation (ie new HV lines above 110 Kv 10 km, any new Boiler plant above 300 MW thermal, any new ash pond above 25 ha)</p> <p>In all distribution companies ESIA will cover projects above the initial limit – proposed limit: more than 15 km of 220 kV lines (or higher voltage), more than 50 km of 110 kV lines or new connectivity contracts of more than 10,000 Gcal/year or new areas supplied with 30 MW, or new lines for more than 3000 new clients covered by Investment Program.</p>	<p>To ensure that the proposed projects minimize environmental impacts. The ESIA will ensure that full consultation takes place and that any project will use European BAT standards as a benchmark as well as ensure appropriate stakeholder consultations are undertaken and projects meet Kazakhstan legislation.</p> <p>Distribution companies - current European standards set the initial limit of 15 km of 220 kV power lines for Environmental Impact Assessment. However due to significant social importance of energy and heat distribution, and necessity of assessment of possible</p>	Best Practice and EBRD requirement	Internal resources	<p>CHPs: 2009 onwards</p> <p>Distribution lines:</p> <p>2009 – for all new 220 kV and new 110 kV lines,</p> <p>2010 – for other investments</p>	<p>Completion of ESIA report and publication of a None Technical Summary (NTS) on the company web site. Provision of a copy of a None Technical Summary to Bank and publishing an NTS on the Company web site</p>	<p>The ESIA will need to include public consultation, an assessment of cumulative environmental impacts from the investments and existing operations, as well as social issues. The ESIA will also need to compare the project with Kazakhstan and EU environmental standards and this information included in the publicly available documentation. The Bank will provide guidance and training on the procedures which should be implemented into the corporate EMS. The Bank as an investor will need to be consulted on the ESIA process prior to public consultation. The NTS will be a short (circa 10 pages) in none technical language summary of the project</p>	<p>All the projects of “Pavlodarenergo”, JSC being developed include Section “Environmental Impact Assessment” (EIA). Within the framework of that Section social impact assessment is also carried out. All the projects undergo a compulsory ecological expertise conducted by an authorized body. Further the information on the results of such ecological expertise is published in mass media for all the stakeholders and social organizations to be informed.</p> <p>“SevKazEnergo”, JSC obtained Pre-EIA for Feasibility Study of “The reconstruction of Petropavl CHP-2 with the replacement of turbo unit station №4 and boiler unit station №8”.</p> <p>The company had the project “Transportation system for dust of high concentration with the reconstruction of burners for boiler BVK-220-100-4 and TP-46A” endorsed by the Ministry of Environmental Protection.</p> <p>The corporate report will be published in mass media in April 2011.</p>

		consequences Consultant recommend few more precise limits.					and how it meets Kazakh and international best practice standards.	
3	<p>Ensure that all new projects, extensions, plant and associated infrastructure are to be designed to meet both Kazak and EU environmental standards.</p> <p>In PTETS, unit no 8 will be reconstructed to meet Kazak standards and will include continuous monitoring systems installed prior to commissioning.</p>	<p>To ensure that future projects minimize environmental impacts. The assessment at design stage will ensure that any project will comply as far as practical with European BAT, stakeholder requirements and Kazakhstan legislation.</p>	<p>Best Practice and EBRD requirement</p>	<p>Will vary by project.</p>	<p>CHPs: On-going</p> <p>Distribution companies: from 2011 all new heat transmission pipelines should meet EU energy efficiency standards (pre-isolated tubes, proper quality of laying, geotechnical review etc.).</p>	<p>In PTETS: This will include an overview of unit no 8. Unit no 8 will be designed to meet Kazak standards for rehabilitated units in place from 2013 (Decree of the Government of Republic of Kazakhstan from December 14, 2007, № 1232 – Appendix 3 of the Ordinance).</p> <p>All new boilers for which a building permit is to be attained post 1st January 2009, will attain EU Large Combustion Plant Directive standards for existing plants (dust 50 mg/Nm³, Sox 800-400 mg/Nm³ depending on size of boiler)</p>	<p>In accordance with international standard ISO 14001, the characteristics of new projects implemented at “Pavlodarenergo”, JSC (“PE”, JSC) should comply with “Technical Regulations...” approved by the RK Government Regulation № 1232 date 14 December, 2007r</p> <p>In 2010 the following works were implemented:</p> <ul style="list-style-type: none"> -Project “installation of turbo-unit of PT-65/75-130/13 type station №1 CHP-3” - Project “reconstruction of boiler unit №1 of BKZ-420-140 type CHP-3” - Project “Dust-extraction plants of boiler BKZ-160(190)-100 station #2 CHP-2” - Project “Dust-extraction plants of boiler BKZ-420-140 station №4 CHP-3” <p>Boiler number 8 of “SevKazEnergo”, JSC is designed in accordance with Kazakhstan’s Technical Regulations for plants, taking effect in 2013. Gas analyzing system for permanent monitoring of pollutants in flue gases will be introduced. Reconstruction of boiler units №9 and №11 was conducted. A Variable Frequency Drive was installed on boiler units №№1, 2, 3, and 11. Boiler №10 was equipped with environmental emissions metering device.</p>	
4	<p>Improve the physical condition of the mazout storage areas.</p>	<p>Risks are presented to land, ground and surface waters from chemical storage areas at both sites, in particular mazout storage. Improved storage of this material will minimize risks. Undertake site assessment by 2012 and base don this develop clean up plant</p> <p>There are 325 tanks in</p>	<p>Best Practice and EBRD requirement</p>	<p>PTETS: 300 k site investigations PavlodarEnergo CHP: 200 Pavlodar and Petropavlovsk Distribution plants: 500</p>	<p>2012</p>	<p>Presentation of management plan to EBRD and shareholders and agree action plan to clean up site</p>	<p>Plans for each of “Pavlodarenergo”, JSC stations were developed and published in newspaper “Energetic” №3(2338) dated 13 February, 2009 and №5(2340) dated 20 March, 2009. “Pavlodar Regional Electric Distribution Company”, JSC has 30 reservoirs for oil storage on its books.</p> <p>As for “SevKazEnergo”, JSC, mazout was taken out from some underground storage areas and put in above-ground storages.</p>	

		Pavlodar distribution company and app 100 tanks in Petropavlovsk distribution company.						
5	Undertake a BAT (Best Available Techniques) Assessment in all CHP units and develop a programme to evaluate the scope for reduction of NOx and sulphur dioxide (SO ₂) emissions levels comparable with the Large Combustion Plant Directive (as far as possible) and compliance with Kazak legislation, notably more stringent dust emission from 2013 (phase 1) and SOx emission (phase 2)	The EBRD requires that all new generating assets achieve new plant standards as described by EU Large Combustion Plant Directive. Existing plants should as minimum comply with Kazak standards and a plan be put in place to comply with existing plant standards as described within the EU LCPD Note. Current emissions exceed EU standards in all cases as well as Kazak requirements for new plants	Best Practice and EBRD requirement	Internal resources	PTETS: Develop plan 2012 and submit to shareholders and EBRD. Implement 1 st stage by 2013-2016 and 2 nd stage by 2020 PavlodarEnergy o CHP - 2010	Presentation of the report to EBRD representatives, later publication of the summary of the report.	A BAT Assessment will set out the scope of any improvement works and the program for implementation. This will include the retrofitting equipment.	With a view of Action Plan realization for the maximum possible decrease of emissions, and according to requirements of Technical regulation “The requirements for the emissions produced by the combustion of various types of fuels in boilers of combined-heat-and-power plants” the company is implementing reconstruction works on ash-catching plants with installation of emulsifiers of the 2nd generation; the implementation period is up to the end of 2012. Earlier BAT assessment was implemented. Decrease in dust emissions 6-fold, sulfur – by 15%. Reconstruction of fuel combustion system on boiler units is being conducted (tertiary blowing) to decrease NOx. GHG Passport was developed. “SevKazEnergo”, JSC participates in the project “Cooperation in carbon catching” jointly with Hasselt University, University of Leeds, Royal Belgian Institute of Natural Sciences, and Coordination Centre on Climate Change.
6	In all CHPs: As part of the BAT Assessment develop a plan to limit dust emissions, through combination of new investments and upgrade of existing assets. The plan will set out a road map to attain at first a under 300 mg/Nm3 for the plant (Kazak national standards from 2013) and then for each stack 100 mg/Nm3 between 2016-2020 (EU Standards under LCP – IPPC benchmarks are for below 50) . The BAT Assessment will review the performance of the new type emulgators vs. ESPs and confirm whether new emulgators or EPS	Current emissions exceed EU standards in all cases and given the fuel parameters and local technology EU standards will not be met in the medium to long term. International standards is 50 mg/Nm3, BAT would be in the 20-30 mg/Nm3 range. The Company will upgrade the air abatement equipment, however current technology and fuel will not allow EU standards to be met. The plant will need to undertake	Best Practice and EBRD requirement	Internal resources CAPEX tbc Approx. 15-20 mln Euro	Plan by 2012 2010-2012 undertake a BAT Assessment to consider how to attain best international practice emission standards such as EU LCP Directive requirements – i.e. 50-100 mg/Nm3. ToR for this study to be agreed with the lenders. Attain below 300 mg/Nm3	Provision of plant and then BAT Study to the lenders. Publication of information on planned investments Achieving emission levels.	Dust emissions are highly visible and all plant worldwide uses dust abatement technology. Dust also can cause respiratory health problems. The Company must address dust emission as a priority, even if neighbouring plants are significant sources of pollution. The use of emulgators (wet scrubbers) can be viewed as BAT in terms of availability and reliability as well as effectiveness. The new units should attain	For 2015 the Investment Programme provides for the installation of titanium emulsifiers of the 2nd generation which will allow reaching the efficiency of 99.4% - 99.6%; further works will be implemented in accordance with the regulations which is valid after 2015. At “Pavlodarenergo”, JSC emulsifiers were installed on 7 boilers out of 22: boiler №5, №2 CHP-2; boiler №3, №4 and №5 CHP-3; boilers №8, №7 EkiCHP. At “SevKazEnergo”, JSC emulsifiers were installed on 7 boilers (2, 3, 5, 6, 10, 4, 11). The total number of the Company’s boilers with installed emulsifiers is 14 out of 33. By the year 2012, taking into account activities undertaken, a new plan on reduction of emissions will be prepared.

	<p>should be installed on all boilers post 2010 at the plant to attain national and EU environmental standards.</p>	<p>a Best Available Techniques (BAT) to look at the available technologies that could be applied to the plant. The plan needs to consider replacing the emulgators with ESP (electrostatic precipitators) that have been successfully used at other power station</p> <p>PavlodarEnergo: Data for CHP-2 gives dust levels in the range 1,014 – 1,712 mg/Nm³. Data for CHP-3 gives dust levels in the range 1,552 – 1,695 mg/Nm³.</p>			<p>average emissions from CHP by 2013 that will be operational post 2015</p> <p>As a long term aim tend to approach 50-100 mg/Nm³ average on the stack or min 99.8 % efficiency of dust removal</p>		<p>below 270 mg/nm³ emission level. . The BAT study will review the performance of the ESPs and confirm whether they meet the BAT definitions.</p>	
7	<p>In all CHPs:</p> <p>Implementation of continuous emission monitoring systems (CEMS) for all stack emissions.</p> <p>CEMS will be installed on each boiler retrofitted with a new emulgator or ESP starting from 2009.</p>	<p>Although legal compliance is generally demonstrable, the current monitoring programmes and techniques do not allow ready comparison with EU standards or other published data. There is no continuous monitoring in place, only periodic monitoring for some key parameters. CEMS will allow active control of emissions rather than reactive.</p>	<p>Best Practice and EBRD requirement</p>	<p>PTETS: 200</p> <p>PavlodarEnergo: CAPEX</p>	<p>By 2013 on all boilers at CHPs. Program to be developed as part of BAT Assessment</p>	<p>Commissioning of CEMS at all appropriate sources</p>	<p>All new boiler plant should be installed with CEMS to ensure it meets the reliability, confidence limits and reporting requirements of the LCPD.</p> <p>Existing boiler plant should be fitted with CEMS no later than 2013 to verify that national dust emission levels are met. Whilst this is not a regulatory issue, this is a high priority in order to provide operation data for future design.</p> <p>Specifically this must include SO₂, NO_x, CO and particulates. Water vapour, temperature, oxygen concentration, pressure should be</p>	<p>“Pavlodarenerg”o, JSC: The installed system for continuous emissions monitoring on boiler №3 CHP-3 is at the stage of adjustment. The installation of monitoring system on boiler unit №4 CHP-3 and boiler unit №2 CHP-2 is being carried out. It is planned to purchase systems for continuous emissions monitoring for boiler №6 EkiCHP and for three boilers of PCHP-2.</p> <p>“SevKazEnerg”o, JSC: boiler №10 Petropavlovsk CHP-2 (PCHP-2).</p>

							recorded if the sample is not dried.	
8	<p>In all CHPs: Develop an asbestos management plan aimed at cessation of asbestos usage, removal and disposal. The plan will identify high, medium and low risk asbestos use areas. Stop purchase of asbestos containing products from end of 2009</p>	<p>Improved management of environmental and health and safety issues. Asbestos is present at the CHP. An asbestos review at the sites is therefore recommended, together with the development of asbestos management plans. The plans will include how risks are to be managed as well as a removal strategy.</p>	<p>Best Practice and EBRD requirement</p>	<p>Consultancy cots / internal</p>	<p>Assess presence of Asbestos by 2010 Develop a plan by 2010 implement for high risk areas systematically between 2012-20.</p>		<p>Installation and on-going usage of asbestos should cease by 2008. A plan for the removal and disposal of asbestos should be developed by 2010 High risk asbestos use area shall be removed by 2020.</p>	<p>Plans for each stations of “Pavlodarenergo”, JSC were developed and published in newspaper “Energetic” №3(2338) dated 13 February, 2009 and №5(2340) dated 20 March, 2009. In accordance with approved plans, every year asbestos-containing materials are replaced by basalt-containing materials (basalt mats, fireproof basalt-containing rolls МБОР-С2-5, and of mullite-siliceous rolled materials МКРР-130).</p>
9	<p>In all CHPs: Determine through analysis whether transformer oils contain PCBs.</p>	<p>Continued use of PCB-containing transformer oil until the end of its useful life is acceptable. However, long term plans for its phase out should be developed.</p>	<p>Best Practice and EBRD requirement</p>	<p>consultancy</p>	<p>2015</p>	<p>Results of analysis</p>		<p>“Pavlodarenergo”, JSC performed the analysis, which proved that transformer oil used by the Company does not contain polychlorinated biphenyls (PCBs). The company developed Instruction ПИ -04-26-2010 on PCBs identification in transformers. During the purchase of oils for replacement in transformers, on a mandatory basis a point about the absence of PCBs is controlled in the certificate.</p>

ESAP specific for particular companies								
No	Action	Environmental Risks / Liability / Benefit	Legislative Requirement / Best Practice	Investment Needs / Resources (Euros, 000s)	Timetable To be completed by the End of Year	Target and Evaluation Criteria for Successful Completion	Comment	Report
Petropavlovsk PTETS								
1	Install dust abatement on units in accordance to agreed schedule, namely, on tow boilers each year	Planned implementation of investment program to allow the plant to attain Kazak emissions limits by 2013 and longer term aim to attain international standards for dust emissions.	Kazak national requirements and best practice	CAPEX	Timetable of 2 units upgraded per annum.	Attain Kazak national standards for dust) by 2013		In order to implement the Program to the maximum possible reduction of emissions into the environment in accordance with the requirements of Technical regulation stating "Requirements for emissions into the environment during combustion of fuels in the boilers of power plants", developed a plan for installation of 2 nd generation titanium emulsifiers for all boilers by 2013. Plan is being performed on schedule. As of 1 January, 2011 emulsifiers were installed on boilers of stations №№ 2, 3, 5, 6, 10, 4, and 11.
2	Reduce the risk of the contamination of the Beloe Lake with oily water	Develop procedure for sampling and install preventative measure (oil traps) to reduce the risk of accidental oil spillage reaching the Beloe Lake	Best practice	Own resources	2012			Analysis of water in Beloe lake is performed twice a month. The absence of oil in the tailrace channel is monitored continuously. Oil catchers are successfully applied on tailrace channel.
PavlodarEnergo CHP								
1	Undertake a review at CHP-2 and CHP-3 of the costs of retrofit abatement solutions (plant and other improvement measures) compared with the complete replacement of primary generation and utilities equipment, as the most cost-effective long term strategy to meet both Kazakhstani and EU environmental standards.	To develop a strategy to meet both Kazakhstan and EU environmental standards in the most cost effective manner.	Best Practice	Internal resources	2010	Publication of report.		"INSTITUTE KazNIPIEnergoprom", JSC performed report "Concept of CHP-2 reconstruction at "Pavlodarenergo", JSC", Almaty, 2011. The following conclusions are based on the results of a comparative analysis: 1) the cost of construction of a new CHP is 15.5% higher than the reconstruction of the existing one; 2) full-scale reconstruction of the main building is practically impossible, taking into consideration the current requirements of technical and environmental safety; 3) it is reasonable to build a new high-technology automated CHP (with the lifetime of at least 30 years) by means of displacement power and construction of a main building within the area of the existing site, with gradual withdrawal of obsolete equipment with a glance on the terms of commissioning of the new equipment, taking into account actual increase in consumer's loads in the area covered by CHP-2. to make a final decision it is necessary to develop a feasibility study taking into consideration a financial model and competitive energy tariffs of a new CHP.

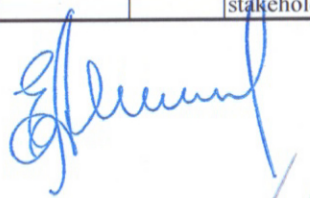
2	Evaluate further energy efficiency improvement measures. This can be undertaken as part of the BAT assessment and within the BAT assessment budget.	Energy efficiency and lower fuel use per MWh will result in a decrease CO ₂ emissions.	Best Practice and EBRD requirement	Internal resources	2010	Publication of GHG reduction plan	The current 12 point investment program is aimed at improving generating efficiency at CHP-3 and thereby reducing specific CO ₂ emissions.	Performance of arrangements of the investment program for 2007-2013 will lead to the expected decrease of fuel rate for electric and heat energy production by 0.027 kg/KWh and 3 kg/Gcal, respectively.
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Pavlodar Electricity Distribution Company. Petropavlovsk Electricity Distribution Company Pavlodar and Ekibastuz Heat Distribution Company. Petropavlovsk Heat Distribution Company								
1	Prepare a detailed energy efficiency improvement program. This should include 15 years program for pre-insulated pipelines installation, program for installation of appropriate heat meters and the program for thermo-vision photos of the main assets for identification of heat losses. This can be undertaken as a part of the investment program approved by anti-monopoly office.	Energy efficiency and lower fuel use per a square meter will result in this program. Currently each company has above 40,000 GCal/year extraordinary losses along transmission pipelines. Moreover large heat losses are in consumers properties due to poor thermal insulation of houses – the problem lays in financing of such a way of energy saving.	Best Practice and EBRD requirement	Internal resources	2010 – initial actions, preparation of the program, application for acceptance of the program and new rates by local authorities	Publication of energy efficiency program.		Heat-transmitting companies developed the Investment programme “Development, reconstruction and retrofitting” to reduce extra losses during the period 2010-2016. One of the points of this programme reads as: Reconstruction of transmission (mains) and distribution heat networks with the use of pre-insulated pipelines.
2	Implementation of environmental training for all employees with less than 3 years of experience in the company.	Due to frequent rotation of the staff it is necessary to provide additional trainings for all employees in scope of their responsibilities in terms of environmental protection, energy efficiency and costumers treatment during energy supply breakdown.	Best Practice and EBRD requirement	150	2009/2011 - See comment	Contract of such trainings, reports from participants and evaluation documentation.		“Pavlodar Regional Electric Distribution Company”, JSC took an environmental engineer on its staff. The environmental engineer has the following certificates: IRBARIS (adoption of GHGs inventarization in Kazakhstan); training at Kazakhstan Quality Organization on “development, adoption and audit of the integrate management system based on the international standards”. “Pavlodarskiye Teplovyie Seti”, JSC appointed an environmental engineer who is responsible for environmental safety and underwent training on “Development, adoption and internal audit of the environmental management system in accordance with the ISO 14001:2004 requirements”, which is proved by the certificate. According to the plan of ISO 14001:2004 adoption the following documents were developed: the company’s environmental policy and aims, and hazard and risks list. The tasks and programmes of environmental management system were determined, and the lists of regulatory requirements are being developed. It is planned to carry out training of the company’s employees on environmental issues to achieve a higher awareness. The company took out a subscription for “Ecology of production” magazine. The employees of “North Kazakhstan Regional Electric Distribution Company”, JSC are trained on

							environmental issues; in every service and department there is a person responsible for the compliance with environmental legislation. The Regulations on territory contamination prevention are in force, and the company organises technical training of its employees. The programme of technical training includes issues on compliance with environmental legislation. “Petropavl Heat Distribution Company”, LLP appointed a person responsible for environmental safety – a chemical engineer in the technical department. In order to increase the ecological awareness of the company’s employees, necessary information was sent in form of lectures. The company subscribes to “Labour Protection” magazine that publishes section “Health protection and environmental conservation”. According to its environmental and social action plan, “Petropavl Heat Distribution Company”, LLP underwent the 1st stage of certification audit; in May 2011 it is planned to obtain a certificate confirming the company’s compliance with ISO 9001 requirements. The company is investigating the suppliers market concerning the services of Management System adoption in accordance to ISO ISO 14001 and OHSAS 18001 requirements.
3	Prepare the detailed inventory of the area with only one side supply, perform the risk assessment for this areas	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	40.000 Euro per company	May 2010 – the report should be presented as an annex to the 2009 financial report for the whole company	Publication of the report for the local authorities plus regulatory office. Discussion of the results within management and supervisory board	The risk concerning electric energy supply is minimal; the consumers’ energy supply is carried out depending on the category of objects, according to the Rules of arrangement of electricity generating plants of RK. There are three categories of objects: I category includes consumers, in respect of which the interruption of the energy supply may cause hazard to people’s life; it is necessary to supply such consumers with energy from 2 independent reserve sources. II category includes consumers, in respect of which the interruption of the energy supply may lead to mass undersupply of energy; it is recommended to supply such consumers from 2 power sources. The rest of consumers refer to III category, for which one power source is necessary. The Company keeps record of consumers of I and II categories. All the consumers of I category conform with norms; consumers of II category which do not conform with norms are registered, and the company takes measures to create power reserves. Heat transmission companies in their activities follow The Rules of technical exploitation of electric power plants and networks and International Building Code (IBC 4.02-02-2004 “Heat Networks”). There are three categories of consumers: I – objects in respect of which the interruption of the energy supply is intolerable; II – objects in respect of which the temperature reduction is allowable but not more than 54 h of breakdown elimination. III – all other objects. There is a scheme of temporary heat energy supply from operating CHPs available in case of breakdown. All the consumers which do not conform with technical regulations are registered. If a feed network is available, temporary transfer is employed. The Company takes measures to properly supply consumers with heat energy and to minimize their risks.
4	Verification of the contractors for old transformers and equipment utilization. Develop the certification of the utilization technologies.	Improved management of environmental and H&S issues in the region. Old electric devices require special procedures for utilization and the audited Companies are the largest producers of such wastes in the region. In accordance	Best Practice	30	See comment		Electric energy distribution companies carry out repairs of out-of-service transformers using their own resources at the repair facilities of the industrial overhaul plant; after that repaired transformers are repeatedly used in operation. Utilization of unfit equipment is not carried out, as soon as the metal scrap is used for repair purposes. Heat-transmitting companies. In accordance with a requirement of ecological code of the Republic of Kazakhstan, the company developed a business process for utilization of mercury-containing lamps. Within the framework of the business process: the movements of mercury-containing lamps are registered (appointment of persons responsible for replacement and storage of new and used mercury-containing lamps); creation of storage conditions of mercury-containing lamps in accordance with current normative documents; the

		with Best Practice the way of utilization of these devices should be controlled. The audited plans shall include how risks are to be managed as well as a waste removal strategy.						company concluded a contract “On acceptance and demercurization of used mercury-containing lamps”. Under that contract, acceptance and demercurization of used mercury-containing lamps is implemented by special organizations providing services on acceptance and disposal of solid domestic and industrial wastes. The company submits annual reports: - to Environmental Department of the Ministry of Environmental Protection of the Republic of Kazakhstan on hazardous wastes; - on ambient air protection in Form 2-TII air; - on industrial environmental control programme; - to Regional Statistics Departments “On technical costs of environmental protection” – report in form 2-TII air. Every quarter the company submits a report on fulfillment of the Plan of nature conservation activities to regional Departments of the Ministry of Environmental Protection of the Republic of Kazakhstan.
5	Stakeholder Engagement Programme (SEP). Develop an SEP to address both worker and public stakeholder engagement programmes at the individual sites as well as corporate. Draft prepared by Atkins in January 2009 – to be updated annually by the 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 reduce risk of civil unrest and public concern.	EBRD	Internal and external	2009	SEP in place updated on a annual basis with summary provided to the Bank in Annual Report	SEP will allow for good public communications program	The Company has corporate sites: http://www.caepco.kz , http://www.sevkazenergo.kz , http://www.pavlodarenergo.kz , http://www.astanaenergosbyt.kz). The following columns can be found on the sites: “Public relations”, “To consumers”, “News” “Questions and answers”, which contain information about tariffs, the order of execution and issue of technical specifications, formation of contracts and other reference information. Consumers can address their questions, remarks and suggestions. The information is updated every 2-3 days. Within the frameworks of the integrated management system, the Company developed the following: 1. The Regulations on informing the public and the company’s employees; 2. The order of office work procedures; 3. Management of inappropriate products; The above mentioned documents provide all stakeholders with the information and describe actions in case of any external requests (questionnaires KPI-7-01(QMS) “Consumer feedback”). In accordance with Law of the Republic of Kazakhstan №272-І “On natural monopolies...” dated 9 July, 1998, public hearings are held twice a year, with the participation of the council of experts, the consumer rights protection society, cooperatives for apartment owners, mass media, and all stakeholders.

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