

Analysis of emissions of harmful substances

“PAVLODARENERGO” JSC intends to achieve lowering emissions (CH₄, HFCs, PFCs, N₂O, SF₆) into atmosphere by 2 % by the year 2015 through implementation of investment program.

Reporting data on emissions of the Company for the year 2011 by group of companies of “PAVLODARENERGO” JSC (tons)

Emissions of pollutants into atmosphere	Limit	Fact
Total, including	77676	53 883
Coal ash (non-organic dust 70-20% of silicon dioxide)	30 423	18 339
Nitrogen dioxide	8 904	7 688
Nitrogen oxide	1 444	1 247
Sulfur anhydride	34 964	24 997
Carbon oxide	1 843	1 514
Others	98	98

Reporting data on emissions for the year 2011 of “PAVLODARENERGO” JSC by CHPs (tons)

Emissions of pollutants into atmosphere	CHP-2		CHP-3		Ekibastuz CHP		Total	
	Limit	Fact	Limit	Fact	Limit	Fact	Limit	Fact
Total, including	14 723	11 038	50 514	34 012	12 439	8 833	77676	53 883
Coal ash	6 332	4 013	20 308	10 770	3 783	3 556	30 423	18 339
Nitrogen dioxide	1 109	1108	6 407	5 321	1 388	1 259	8 904	7 688
Nitrogen oxide	180	179	1 039	863	225	205	1 444	1 247
Sulfur anhydride	6 695	5361	21 303	15 898	6 966	3 738	34 964	24 997
Carbon oxide	390	360	1 417	1 120	36	34	1 843	1 514
Others	17	17	40	40	41	41	98	98

Note: Volume of emissions into environment, permitted by the Ministry of Environmental Protection (MEP) is indicated in the table as limit of emissions, factual volume of emissions is indicated as fact.

Reporting data of “Pavlodar heating networks” for the year 2011 (tons)

Emissions of pollutants into atmosphere	Pavlodar heating networks		Ekibastuz heating networks		Total, Pavlodar and Ekibastuz	
	Limit	Fact	Limit	Fact	Limit	Fact
Total, including	1,013	1,366	0,856	1,968	1,869	3,337
Fluorides	0,011	0,016	0,006	0,006	0,017	0,022
Nitrogen oxide	0,097	0,120	0,122	0,159	0,219	0,279
Ferric II oxide	0,548	0,629	0,250	0,250	0,798	0,879
Manganese and its compounds	0,043	0,050	0,013	0,014	0,056	0,064
Carbon oxide	0,191	0,385	0,389	1,297	0,580	1,682
Others	0,123	0,167	0,076	0,244	0,199	0,411

In 2011 changes of nomenclature of pollutants, as well as of volumes of emissions into atmosphere to the side of increase took place. These changes are regulated by the following projects developed in the established order, including:

– Norms of MPE for Pavlodar heating networks, “PHN” LLP. According to the conclusion of state environmental expert evaluation for the project of MPE for “PHN” LLP #1-14/IOP-687 dated on July 28, 2011, volume of emissions into the environment amounts to 1.94156278 tons.

– Assessment of impact of Ekibastuz heating networks of “PHN” LLP to environment. According to the Conclusion of state environmental expert evaluation for the project EIA #1-14/IOP-885 dated on October 25, 2011, volume of emissions into environment amounts to – 1.3657226 tons.

In the reporting data of “PHN” LLP for the year 2011 on Pavlodar and Ekibastuz heating networks emissions are provided in the volume of 3.337 tons/year with consideration of current changes, regulated by MPE and EIA projects.

	Content, mg/nm ³ with $\alpha=1,4$							
	CHP-2		CHP-3		Ekibastuz CHP			
	MPE	Fact	MPE	Fact	Pipe #1		Pipe # 2	
					MPE	Fact	MPE	Fact
Nox (Nitrogen oxide)	371	358	555	543	550	501	575	524
SO ₂ (Sulfur anhydride)	1 598	1 113	1 404	1 148	2214	846	2214	745
CO (carbon oxide)	97	83	97	90	100	100	258	116
Coal ash	1 558	540	1 372	47	1 177	977	1 194	862

Reporting data on Electric grids for the year 2011 of “PDENC” JSC by groups (tons)

Emissions of pollutants into atmosphere	“PDENC” JSC	
	Limit	Fact
Total	7,14	4,81
Mineral oil	0,37	0,18
Nitrogen dioxide	0,16	0,12
non-organic dust 70-20% of silicon dioxide	0,18	0,16
Sulfur anhydride	0,11	0,07
Carbon oxide	3,62	2,31
Others	2,69	1,97

Enterprises of the Company in 2011 did not exceed the norms of maximum permitted emissions.

Emissions of Carbon dioxide (CO₂)

Since Kyoto protocol entered into force for the Republic of Kazakhstan on September 17, 2009, the Company organized the work on preparation for holding the inventory counting of emissions of greenhouse gases and ozone-depleting substances.