

# **Energy Conservation in the Republic of Kazakhstan**

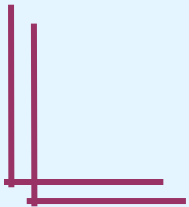
**CAREC Electricity Regulators Forum  
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# Energy Conservation – Current Status

## 1. Legal Framework

- **Law of the Republic of Kazakhstan On Energy Conservation № 210-І as of December 25, 1997** *regulates public relations in the area of energy conservation with the purpose of creating economic and organizational conditions for efficient use of fuel and energy resources of the Republic of Kazakhstan and environmental protection.*



# Energy Conservation – Current Status

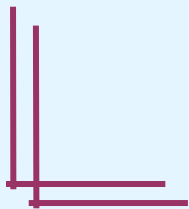
## 2. Scientific research

- **Established Republican Energy Conservation and Energy Efficiency Center**

*Center's main tasks are development of laws and instructions, including energy consumption norms, analysis and summarization of modern experience and technologies, propaganda and information support of energy conservation issues.*

## 3. Development of alternative energy sources

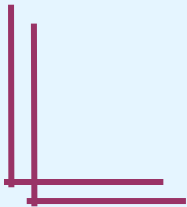
- **Development of the Law of the Republic of Kazakhstan On Renewable Energy Resources**



# Energy Conservation – Current Status

## 4. Education and Information Support System

- **Contest of projects on energy conservation and alternative energy sources among students, young specialists and scholars below 30 years of age**  
*aimed at involving wide range of experts into addressing energy conservation and environmental safety issues*
- **Information campaign to change attitude to energy conservation problems, and to help understand the need for energy conservation**



## 5. Differentiation of Electricity Tariffs

Для физических лиц  
(тенге/кВтч, с НДС):

For individuals (tenge/kWh,  
w/o VAT)

	Almaty:	Astana:	Atyrau:
Current tariff	9,37	5,42	3,39
дневная ставка (07.00ч. – 23.00ч.)	11,95	6,98	4,138
ночная ставка (23.00ч. – 07.00ч.)	2,58	1,56	0,748

For individuals the difference between the current tariff and the night tariff would be:  
 in Almaty – 6.8 tenge (3.6 times reduction);  
 in Astana – 3.86 tenge (3.5 times reduction);  
 in Atyrau – 2.642 tenge (4.5times reduction).

Для юридических лиц  
(тенге/кВтч, без НДС)

For legal entities  
(tenge/kWh, w/o VAT)

	Almaty:	Astana:	Atyrau:
Current tariff	8,29	4,80	6,38
дневная ставка (07.00ч. – 19.00ч.)	8,29	4,80	6,38
ставка тарифа в часы максимума (19.00ч. – 23.00ч.)	17,15	10,11	11,317
ночная ставка (23.00ч. – 07.00ч.)	2,29	1,38	1,407

For legal entities the difference between the current tariff and the night tariff would be:  
 in Almaty – 6 tenge (3.6 times reduction);  
 in Astana – 3.42 tenge (3.5 times reduction);  
 in Atyrau – 4.973 tenge (4.5times reduction).

**The consumer shall have the right to chose the payment method: according to average or differentiated tariffs.**

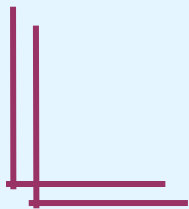
It is proposed to introduce **mandatory** use of **differentiated tariffs by legal entities** by time zones.

**Expected result:** energy conservation, aligning load schedules, minimizing risk of disconnections at hours of pick loads.

## **6. Energy Conservation in Tariff Policy – Current Status**

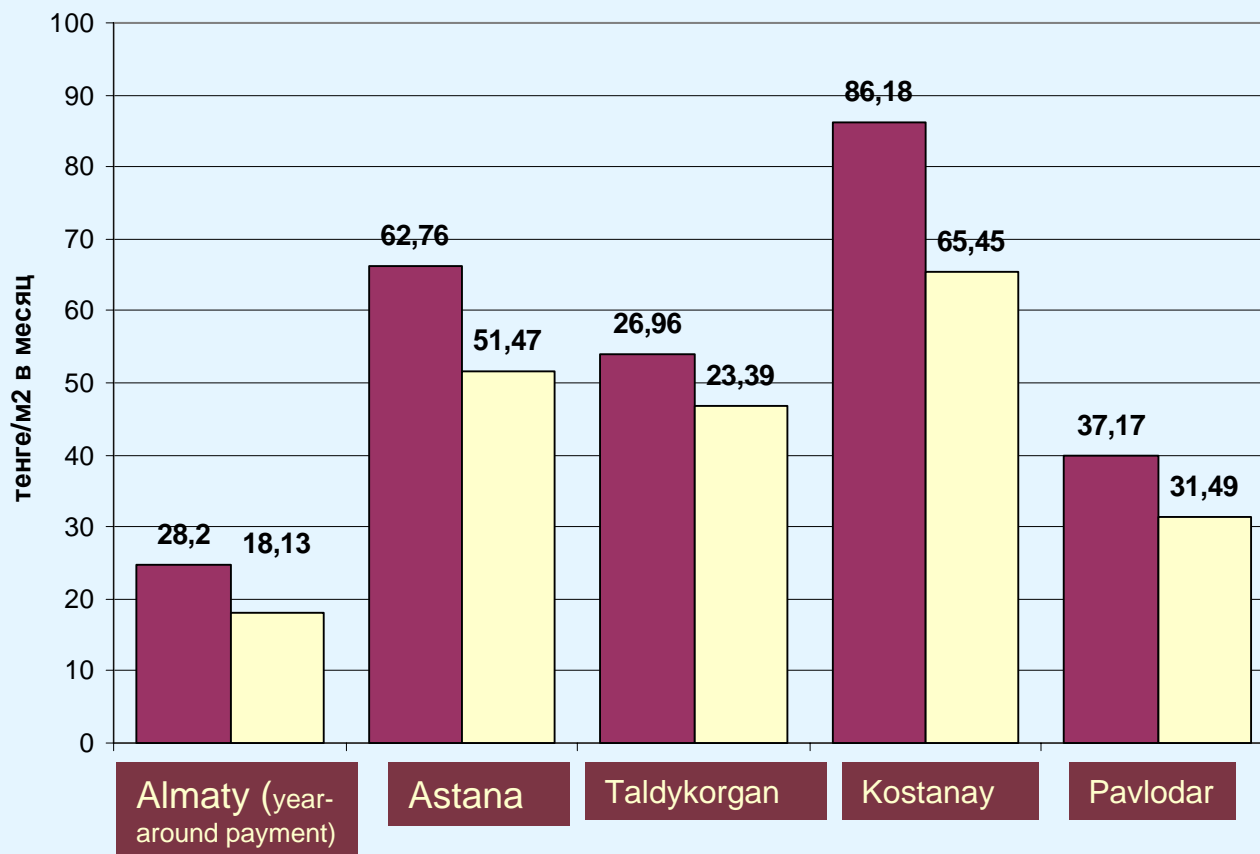
- **The Law of the Republic of Kazakhstan On Natural Monopolies contains provision obliging natural monopolies to install meters for consumers by January 1, 2009.**

*Comprehensive accounting for energy consumption is one of the market mechanisms, which would promote payments for the actually consumed volumes and, consequently, more economic and rational energy consumption.*



# Эффективность установки приборов учета тепловой энергии

## Efficiency of installation of heat energy metering devices



### Efficiency of introduction of heat energy accounting systems

- 1) *Consumer cost reduction;*
- 2) *Promotion of energy conservation and energy efficiency;*
- 3) *Registration and objective determination of losses;*
- 4) *Emissions reduction together with installation of regulation systems;*

*GEF Project, UNDP*

*Almaty – saving of 322,000 tenge (micro-districts 9,7 PKSK “DOM”)*

*Pilot project for 2007 - 2010*

■ по норме потребления  
 ■ по ОПУ

By norm of consumption  
 By OPU

## Consumer payments for water supply

	количество комнат Rooms	количество проживающих (человек) People	объем потребления (м3) Consumption	тариф Водоканала (тенге/м3 с НДС) Tariff	оплата за услуги (тенге) Payment
<b>г. Алматы      Almaty</b>					
According to meters (monthly average)	3-комнатная	4	14,8	19	281
According to the approved consumption norm (3.5 m3 per person per month)			34		646
<b>г. Астана      Astana</b>					
According to meters (monthly average)	3-комнатная	4	17	25	425
According to the approved consumption norm (7.6 m3 per person per month)			30,4		760



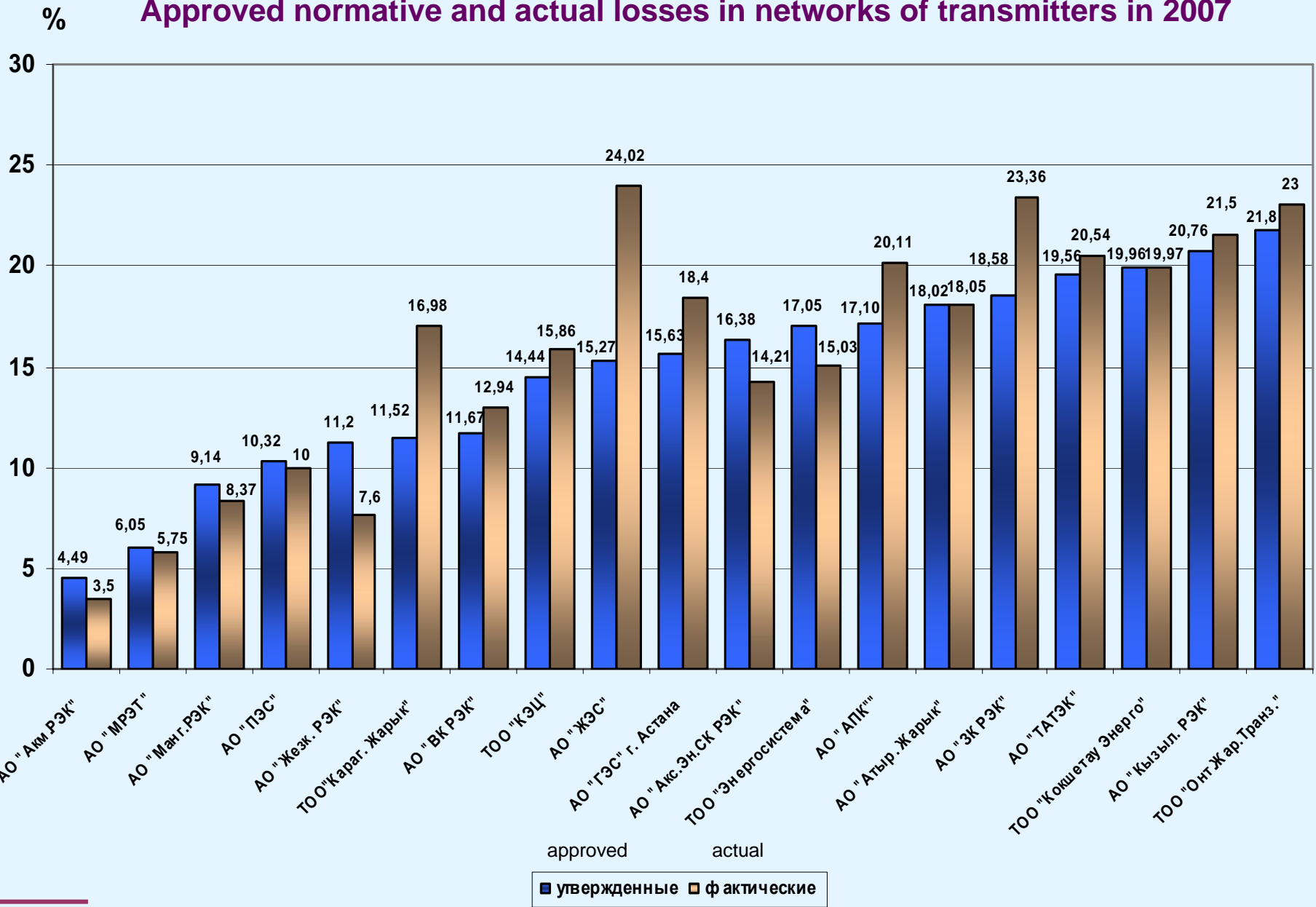
## **6. Energy Conservation in Tariff Policy - Current Status**

- Openness and transparency of normative technical losses approval**

*Levels of normative losses included in the tariff shall be approved by the regulatory authority, which shall be obliged to carry out public hearings with participation of MPs, consumers, public associations, independent experts, and mass media.*

*Consideration of the proposed level of losses is accompanied by assessment, which involves independent experts, state agencies and consumers.*

Информация по уровню утвержденных нормативных и фактических потерь в электрических сетях энергопередающих организаций за 2007 год  
 Approved normative and actual losses in networks of transmitters in 2007

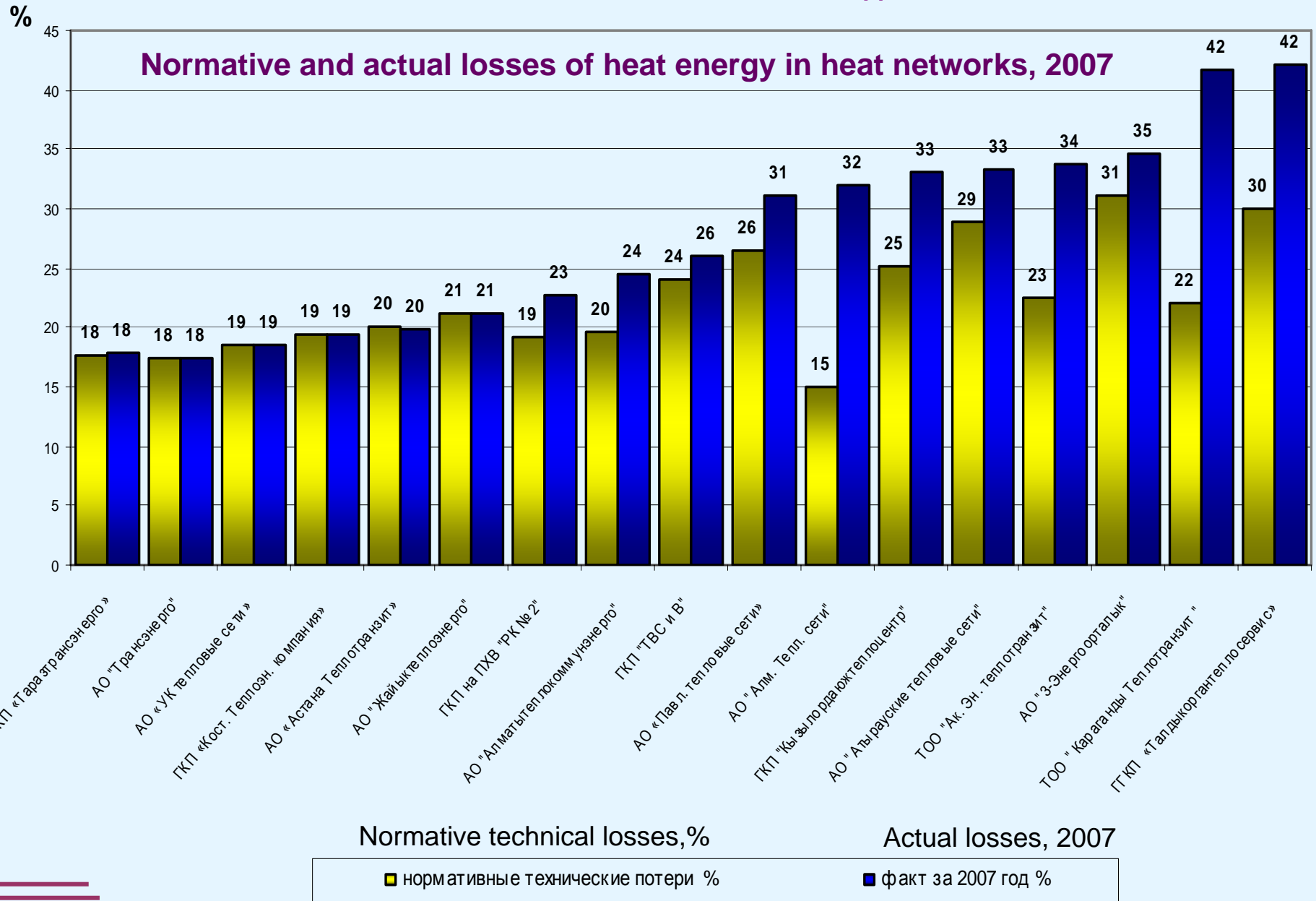


## Electricity losses in grids in 2007

Utility	Actual	Normative technical losses		Above Normative technical losses		Tarif revenue, th. tenge
	%	стоимость тыс.тенге	%	стоимость тыс.тенге	%	
1	2	3	4	5	6	7
ТОО "Караганды Жарык"	16,98	1 009 514,1	9,28	<b>552 491,0</b>	7,70	2 904 342,0
АО "ЗК РЭК"	23,36	373 095,0	18,29	<b>103 532,8</b>	5,07	1 448 500,0
ТОО «ЖЭС»	24,02	659 827,5	19,69	<b>145 181,0</b>	4,33	1 583 000,0
АО "ГЭС"	18,40	924 991,8	15,30	<b>206 611,8</b>	3,10	1 329 037,4
АО "АПК"	20,11	2 559 128,3	17,10	<b>828 332,5</b>	3,01	7 489 840,0
АО «ПЭС»	11,50	498 066,1	10,00	<b>76 619,0</b>	1,50	2 140 198,2
ТОО «КЭЦ»	15,86	469 876,2	14,45	<b>45 793,9</b>	1,41	1 027 218,1
АО «ВК РЭК»	12,94	1 059 251,4	11,64	<b>113 306,4</b>	1,30	4 780 448,0
ТОО "Онтустук Жарык"	23,00	1 158 147,3	21,80	<b>61 960,8</b>	1,20	3 113 308,3
АО «ТАТЭК»	20,54	241 039,0	19,56	<b>14 036,8</b>	0,98	952 553,0
АО "Кыз РЭК"	21,50	415 006,6	20,76	<b>3 094,0</b>	0,74	475 768,7
ТОО "Кокшетау Энерго"	19,97	501 393,2	19,96	<b>250,0</b>	0,01	1 999 128,0
АО "Атырау Жарык"	18,05	1 061 826,5	18,05	<b>1 765,0</b>	0,003	2 155 347,0
ТОО "Акс. Эн. СК РЭК"	14,21	391 540,8	14,21	<b>0,00</b>	0,00	1 477 754,0
АО "АРЭК"	3,50	261 560,9	3,50	<b>0,00</b>	0,00	2 970 209,0
ТОО Энергосистема"	15,03	894 930,6	15,03	<b>0,00</b>	0,00	967 480,6
ТОО «МРЭТ»	5,75	219 940,9	5,75	<b>0,00</b>	0,00	1 031 675,9
ТОО "МРЭК"	8,37	993 509,5	8,37	<b>0,00</b>	0,00	2 564 309,3
ТОО "ЖРЭК"	7,60	546 708,00	7,60	<b>0,00</b>	0,00	1 310 505,00

\*losses in European countries are 10%, in USA - 9 %, in Japan - 5%.

## Уровни нормативных и фактических потерь тепловой энергии тепловых сетях за 2007 год

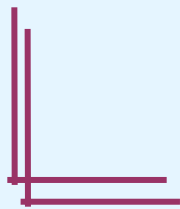
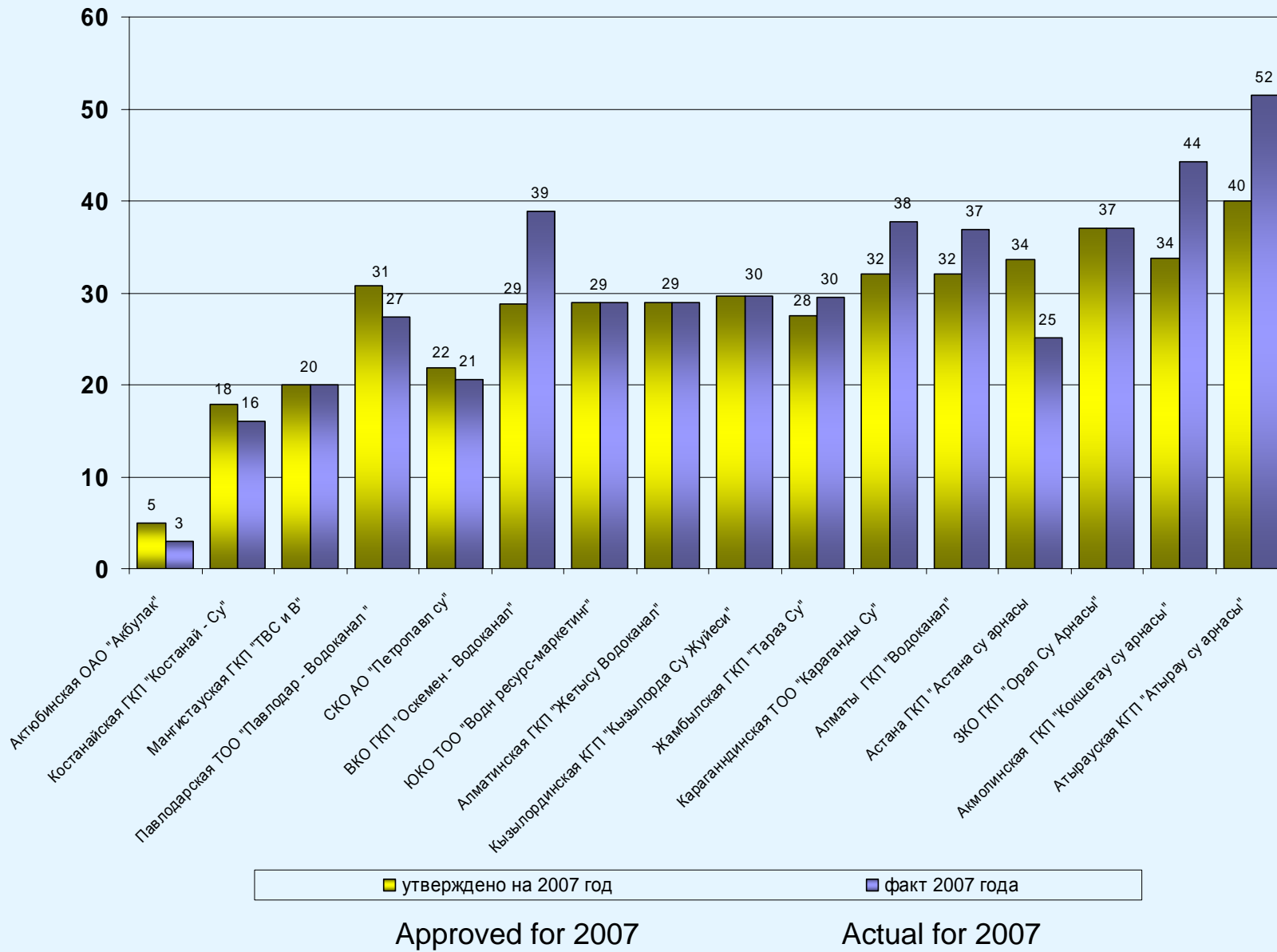


## Heat energy losses in heat networks, 2007

Utility	Total actual losses, 2007		Normative technical losses		Above normative technical losses		Tariff revenue
	стоимость, тыс. тенге	%	стоимость, тыс. тенге	%	стоимость, тыс. тенге	%	тыс. тенге
ТОО " Караганды Теплоэнергетика "	1 538 993	41,7	822 165	22,1	<b>716 827,8</b>	19,6	1 588 688,0
АО "Алматинские тепловые сети"	3 243 639	32	1 649 000	15,00	<b>1 594 639</b>	17	4 219 100
ГКП «Талдыкоргантеплосервис»	450 078	42	319 998	30,00	<b>130 080</b>	12	631 820
ТОО "Аксесс Энерго теплоэнергетика"	580 447	33,8	343 669	22,5	<b>236 777,6</b>	11,6	1 344 483,0
ГКП "Кызылордаюжтеплоцентр"	47 610	33,0	43 853	25,1	<b>3 756,6</b>	7,9	100 757,1
АО "Атырауские тепловые сети"	236 849	33,4	204 380	28,8	<b>32 469,3</b>	4,6	482 633,0
АО «Павлодарские тепловые сети»	451 603	31,0	378 354	26,5	<b>73 249,0</b>	4,0	1 330 408,0
АО "З-Энергоорталык"	535 626	34,7	434 584	31,0	<b>101 041,6</b>	3,7	940 498,0
ГКП на ПХВ "РК №2"	297 444	22,7	234 877	19,2	<b>62 567,4</b>	3,6	1 622 168,7
ГКП "ТВС и В"	215 968	26,0	204 658	24,0	<b>11 310,4</b>	2,0	387 608,4
АО "Алматытеплокоммунэнерго"	470 781	24	438 173	19,70	<b>32 608</b>	2	3 077 255
ГКП «Таразтрансэнерго»	148 742	17,9	147 240	17,7	<b>1 501,8</b>	0,2	330 109,8
АО «Астана Теплоэнергетика»	672 042	19,9	672 042	23,0	<b>0,0</b>	0,0	1 581 804,0
АО "Трансэнерго"	229 163	20,4	229 163	17,5	<b>0,0</b>	0,0	728 366,3
АО «Усть-Каменогорские тепловые сети»	314 466	18,6	314 466	19,0	<b>0,0</b>	0,0	516 230,0
ГКП «Костанайская теплоэнергетическая компания»	536 518	19,4	536 518	19,4	<b>0,0</b>	-	2 516 098,0
АО "Жайыктеплоэнерго"	441 110	21,3	441 110	21,2	<b>0,0</b>		1 623 108,7

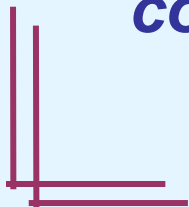
\*losses in European countries are 12 %.

# Technical losses of water, 2007



## 6. Energy Conservation in Tariff Policy – Current Status

- The legislative basis providing for the conditions to invest in renovation and modernization of industrial assets has been developed :
  - instruments of investment tariff, tariff limit (*simplified application procedure, significantly reduced list of documents to be attached to the application*);
  - *using cost savings provided for in the approved tariff calculation for the implementation of investment programs without implementation of temporary compensating tariffs.*



# Energy Conservation – Development Perspectives

- *Introduction of legislative obligations for the actors at the market to carry out energy conservation activities;*
- *Development and implementation of the new comprehensive energy conservation program and regional energy conservation programs aimed at reduction of energy consumption by manufacturing and residential sectors;*
- *Development of energy consumption norms.*

