

FRAMEWORK FOR SETTING ENERGY TARIFFS AND PRICES IN MONGOLIA, AND ITS POTENTIAL IMPROVEMENT IN THE FUTURE



Energy Regulatory Authority of Mongolia

May 27, 2010

ELECTRICITY TARIFF DESIGN

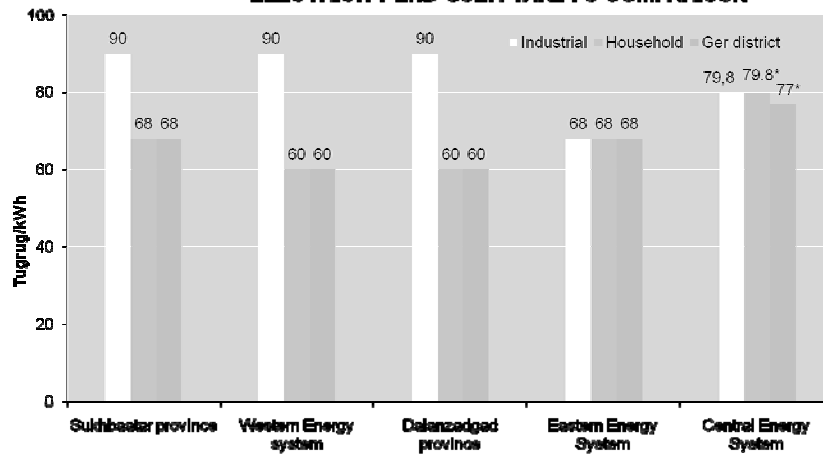
2001 year	2009 year	Further improvements
<ol style="list-style-type: none"> 1. Energy tariff 2. Time of use 3 parts tariff 3. Tariff for consumers without meters 	<ol style="list-style-type: none"> 1. Energy tariff 2. Time of use 3 parts (day, evening and nighttime) tariff for industrial users and enterprises 3. Time of use 2 parts (day and night) tariff for residential consumers 4. Time of use 2 parts tariff for lighting of public streets and squares 5. Time of use 2 parts tariff for lighting of entrance of apartments (Condominium Owners' Association) 6. Tariff for residential consumers in ger district 7. Tariff for consumers without meters 8. Tariff for average consumption in case of no meter is installed 9. Tariff for vulnerable groups-low income consumers 10. Tariff for electrical transportation-Trolley 11. Increasing block tariff for residential consumers-different tariffs depending on consumption level 12. A monthly supply charge or capacity tariff for residential consumers 	<ol style="list-style-type: none"> 1. Modify electricity tariff design for industrial users and enterprises 2. Increase electricity capacity tariff for industrial users and enterprises 3. Introduce voltage tariffs depending on voltage level

HEAT TARIFF DESIGN

2001 year	2009 year	Further improvements
<ol style="list-style-type: none"> 1. Measured by a meter 2. Calculated by volume of the building 3. Calculated by square meter area of building 4. Calculated by number of persons 	<ol style="list-style-type: none"> 1. Measured by a meter 2. Calculated by volume of the building 3. Calculated by square meter area of building 4. Calculated by number of persons 5. Tariff for hot water use for residential consumers based on a water flow meter 6. Tariff for hot water use for residential consumers based on a number of persons- seasonally different rates 7. Wholesale tariff for hot water use 8. Tariff for hot water use for enterprises that conduct their business activity on 1st floor of apartment building 	<ol style="list-style-type: none"> 1. Modify heat tariff to real-cost based tariff

CURRENT ELECTRICITY TARIFFS

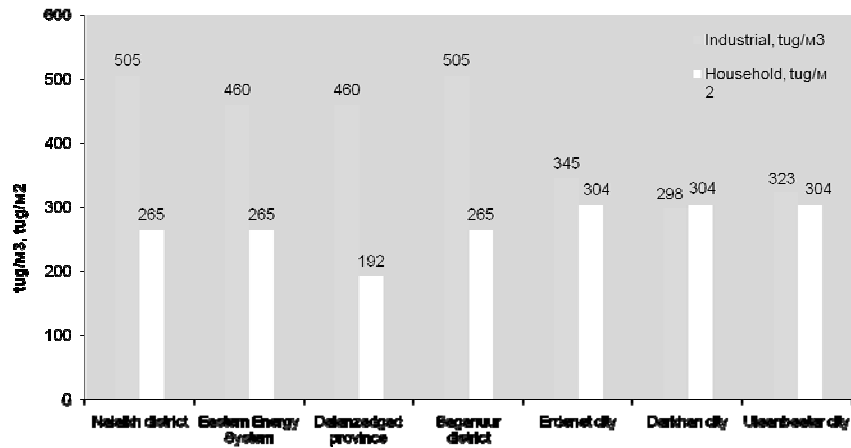
ELECTRICITY END USER TARIFFS COMPARISON



Company Logo

CURRENT HEATING TARIFFS

HEAT END USER TARIFFS COMPARISON



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CHANGES IN ELECTRICITY AND HEATING TARIFFS (In Central Energy System)

In 2002

Electricity and heat retail prices increased by 4.4% and 12.4-30.0% in average respectively;

In 2005

A growth in electricity and heat end user prices represented 8.5% and 19.3% in average respectively;

In 2007

Electricity price was increased by 4.4%

Heat price in Darkhan and Erdenet cities were increased by 20.1-26.4%;

In 2008

Electricity price was increased by 27.8%

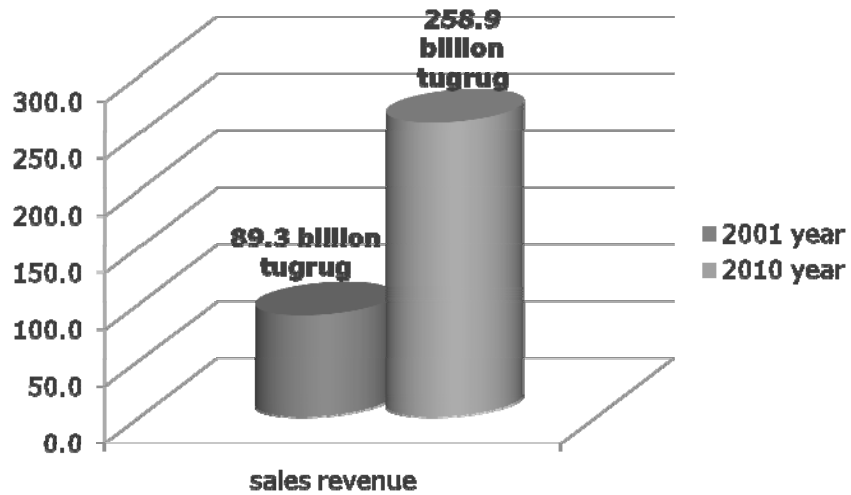
Heat price in Ulaanbaatar city was increased by 39.0%, hot water use tariff for residential consumers in apartment was increased by 61.3-141.9%

In 2009

Electricity price was increased by 17.35%

Heat price in Ulaanabaatar, Darkhan and Erdenet cities were increased by 14.5%;

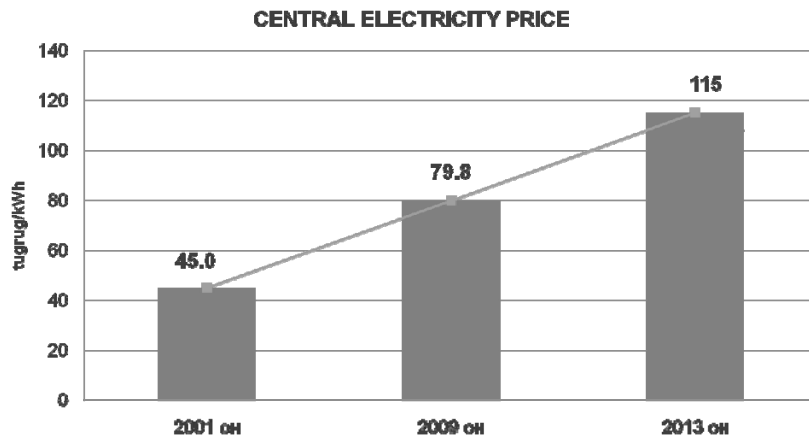
GROWTH OF SALES REVENUE OF CENTRALREGIONAL LICENSEES



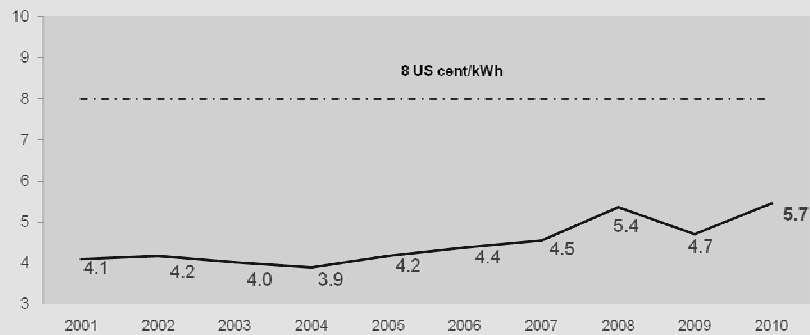
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TARIFF REGULATION PROSPECTIVE

- ❖ During regulation period, 1 kWh electricity price increased by 1,7 times or 77%;



COMPARISON OF CURRENT ELECTRICITY TARIFF AND FURTHER TARGET



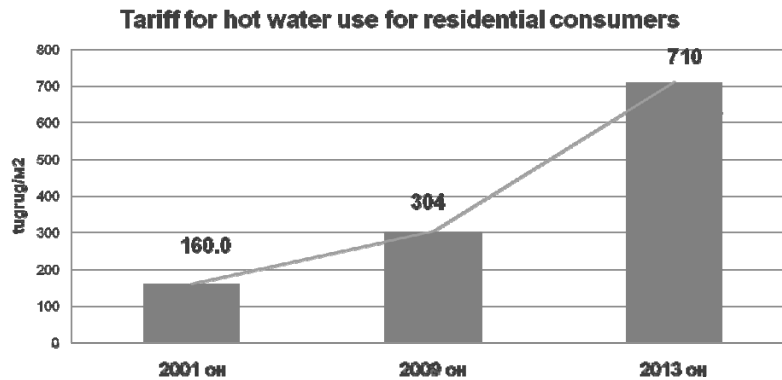
In order to sustain financial soundness and reliable operation of the energy sector, electricity end user price should be increased gradually to reach to a level of 8 US cent per kWh in 2013.

WORLD BANK'S RESEARCHER'S STUDY SUMMARY

Tariff	End user tariff
am \$ 0.04/kWh	Tariff not sufficient to cover operating expenses
am S\$ 0.05/kWh	Tariff sufficient to partly finance the operating expenses, maintenance and renewal.
am \$ 0.08/kWh	Tariff sufficient to cover the operating expenses, maintenance and renewal.

TARIFF REGULATION TRENDS

- ❖ During the tariff regulation period, residential heat price increased by 1.8 times or 84%. By the end of the year 2009, residential heat consumption of Ulaanbaatar city was 29% of total heat consumption and its revenue was 16% of total revenue. Thus, in 2013, tariff regulation will focus on increase the tariff for residential heat and hot water use, not for industrial and enterprises.



ENERGY TARIFFS AND PRICES IN LOCAL AREAS

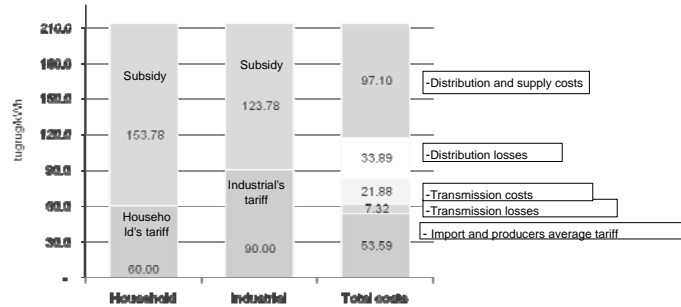
- ❖ The main issue of local energy licensees, that is unavoidably necessary for consideration, is the affordability of consumers in local areas. Thus, a subsidy is required to be given to the local licensees in order to provide power supply service to those consumers living in local areas.
- ❖ The Energy law of Mongolia stipulates that tariffs for different consumer classes should be set based on actual cost of energy supply to them. Although this clause of Energy law implicitly states tariffs without subsidy, but elimination of subsidy is complicated issue due to long lasting and strong habituation of consumers relying on subsidy.
- ❖ From practical and theoretical point of view of regulation, a subsidy is generally accepted. For example, in the summary released by the World Regulators Forum held in Australia in 2004, it was considered that the subsidy is absolutely required for energy sector.
- ❖ Due to the fact that a low level of living standard and affordability in local areas in those areas the Government of Mongolia provides subsidy because it is impossible to set tariff at the full cost recovery level. In one year, the amount of subsidy giving to local energy licensees from state budget has been reached 21.5 billion tugrug (15.4 million US\$).

CURRENT ELECTRICITY TARIFF AND SUBSIDY IN LOCAL AREA
/ EXAMPLE OF EASTERN ENERGY SYSTEM: *The amount of subsidy giving to Eastern Energy System form state budget is 4.0 million tugrug per year /*

(tugrug/kWh)

	Import and producers average tariff	Transmission losses	Transmission costs	Distribution losses	Distribution and supply costs	Total costs of unit	Subsidy per unit	Electricity end user price
	1	2	3	4	5	6=1+2+3+4+5	7	8=6-7
Industrial	53,59	7,32	21,88	33,89	97,10	213,78	123,78	90,00
	25,1%	3,4%	10,2%	15,9%	45,4%	100,0%	57,9%	42,1%
Household	53,59	7,32	21,88	33,89	97,10	213,78	153,78	60,00
	25,1%	3,4%	10,2%	15,9%	45,4%	100,0%	71,9%	28,1%

ELECTRICITY TARIFF STRUCTURE



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TARIFF APPROVAL PROCESS

1. A LICENSEE MAKES PROPOSAL FOR TARIFF CHANGE

A tariff review is commenced upon the receipt of proposal from licensees

2. REVIEW OF TARIFF PROPOSAL BY THE ERA

- It should be based on real-cost performances of last years
- To provide financial capability of licensee
- It should be based on least-cost principle
- Future investment will not be considered

3. The ERA finalize calculation for total required sources (revenue requirement) and determines the rate or amount of change to be made to sale tariffs for consumers or end users

4. IDENTIFY IMPACTS OF TARIFF CHANGES

- Influence to a household budget
- Influence to expense of industrial users and enterprises
- Vulnerable group's issue – consumers with low income
- Influence to economy

HOLD A PUBLIC HEARING

DISCUSS WITH THE GOVERNMENT

DISCUSS WITH THE POLITICAL PARTIES

6. DISCUSS AND DECISION MAKING BY REGULATORY BOARD OF THE ERA

7. DESSIMINATE THE DECISION BY THE REGULATORY BOARD OF THE ERA PUBLIC THROUGH MASS MEDIA

DIFFICULTIES ON TARIFF REGULATION

- ❖ **Residential consumer's affordability:**
 - It creates a situation to apply a tariff with a cross subsidy between consumers.
- ❖ **Social and political impact. Attempts to set energy tariffs in consideration of changes of prices of raw materials, spare parts, fuel, and foreign currency exchange rate increases in accordance with clause 26.2.1 chapter 26 of the Energy Law, were encountered much resistance from political and social side; therefore, real cost- based tariff setting is actually limited due to the above reason.**
 - In 2002-2007, tariff increasing issue have postponed the time and decreased the growth of the real costs by the Government of Mongolia. Thus, depression of the financial soundness and reliable, lack of assets and accumulated liability are really influenced to the energy companies due to the above reason.
- ❖ **Outdated equipments and entities. /Tariff revenue is not sufficient to renew equipments/**
 - Since the first utility of Ulaanbaatar heat system installed, its used for 50 years, and there are almost 60 years used electricity equipments in Ulaanbaatar electricity system. And 20%-25% of transmission utilities have been used for 40 years. Power plant 4 utilized for 27 years, and older Power plant 2 utilized for 49 years.
 - For large 18 energy companies priority to do works such as renovation of technology and maintenances, required the investment of 190.0 billion tug, which equals 80% of those companies total revenue
- ❖ **Accumulated liabilities burden**

FUTHER TASK

- ❖ **In order to sustain financial soundness and reliable operation of energy sector and invite investments into this sector, energy price should be level of the full cover operating expenses and also take some return on investment.**
 - Electricity end user price should be increased gradually to reach to 8 US cent per kWh in 2013.
 - A growth in heat retail tariff should be higher than the electricity tariff with intention to eliminate cross subsidy between electricity and heat.
 - Introduce capacity tariffs for industrial and enterprise's consumers
- ❖ **Propose energy tariff indexation, which depend on changes in coal price, price of other products and services and inflation.**
- ❖ **Beside the increasing energy tariffs, promoting efficiency and improving performance technical-economical indices of energy companies such as:**
 - implementing the dispatching regulation based on economic efficiency,
 - expanding the incentive regulation methods,
 - improving management of cost accounting and cash flow,

