

# ELECTRICITY CONSUMPTION IN FAMILIES

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Chief Sector for Tariff Structure

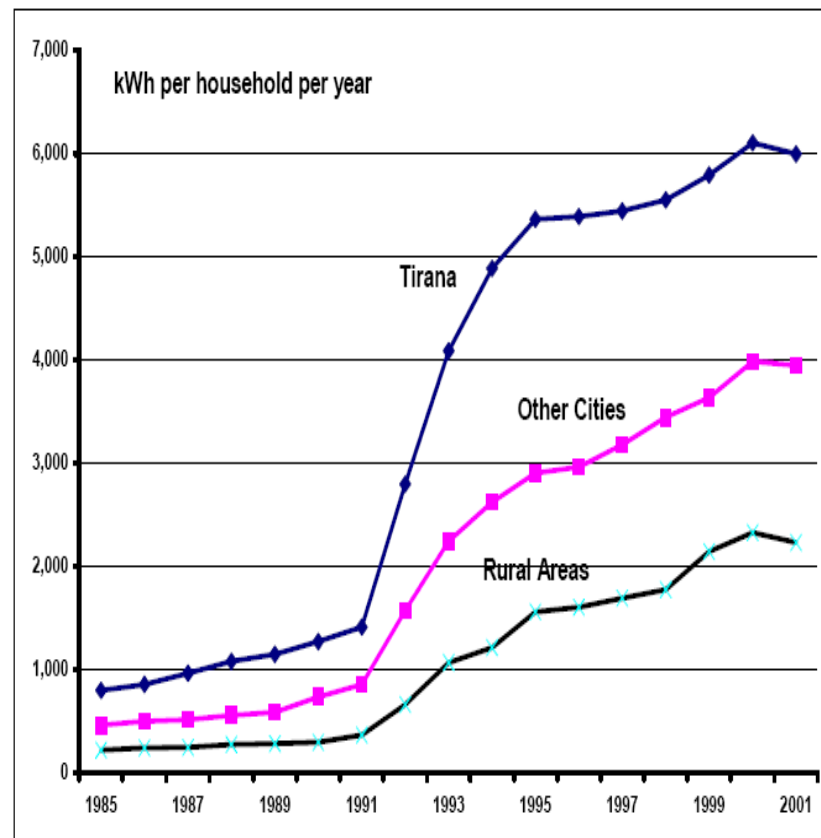
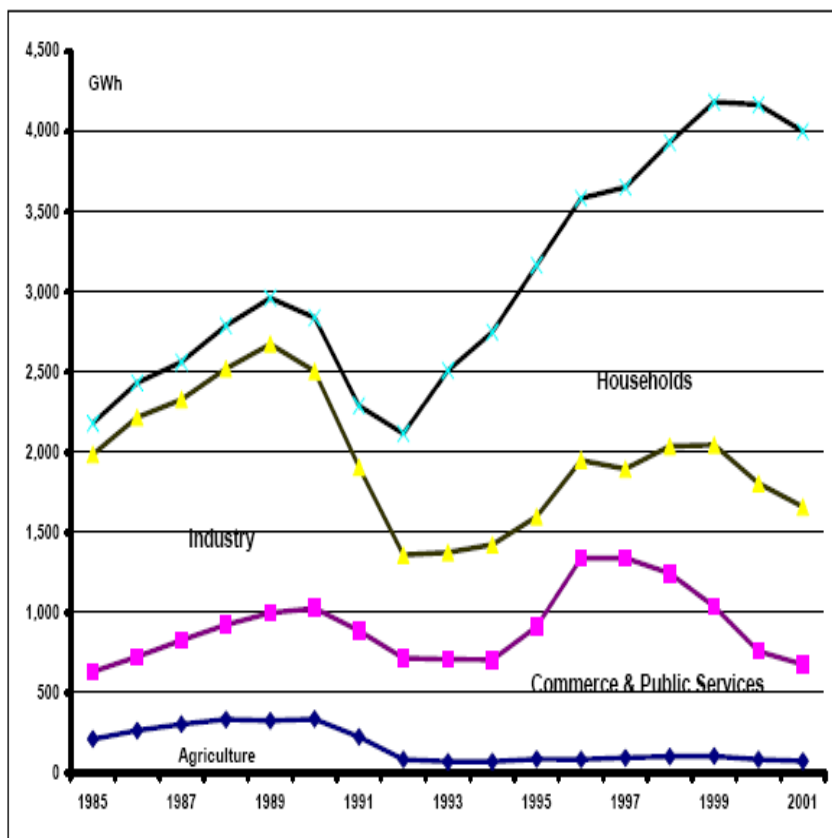
# ELECTRICITY CONSUMPTION IN THE FAMILY

- Electricity is a very basic good for the activity of human society and therefore its rational use is expression of the effect of regulatory action.
- Electricity prices are directly linked to the social effects caused in different layers of the population.
- Social protection of people in need is addressed by the government structures and it is not a direct legal obligation to ERE.
- ERE cooperates with governmental institutions to obtain information regarding the treatment of this category in order to make the possible evaluation for this layer in the case of evaluation of electricity tariffs by consumption blocks.
- Decisions of recent years on electricity prices for households, rely on the system with two blocks. First block is 300 kwh / month

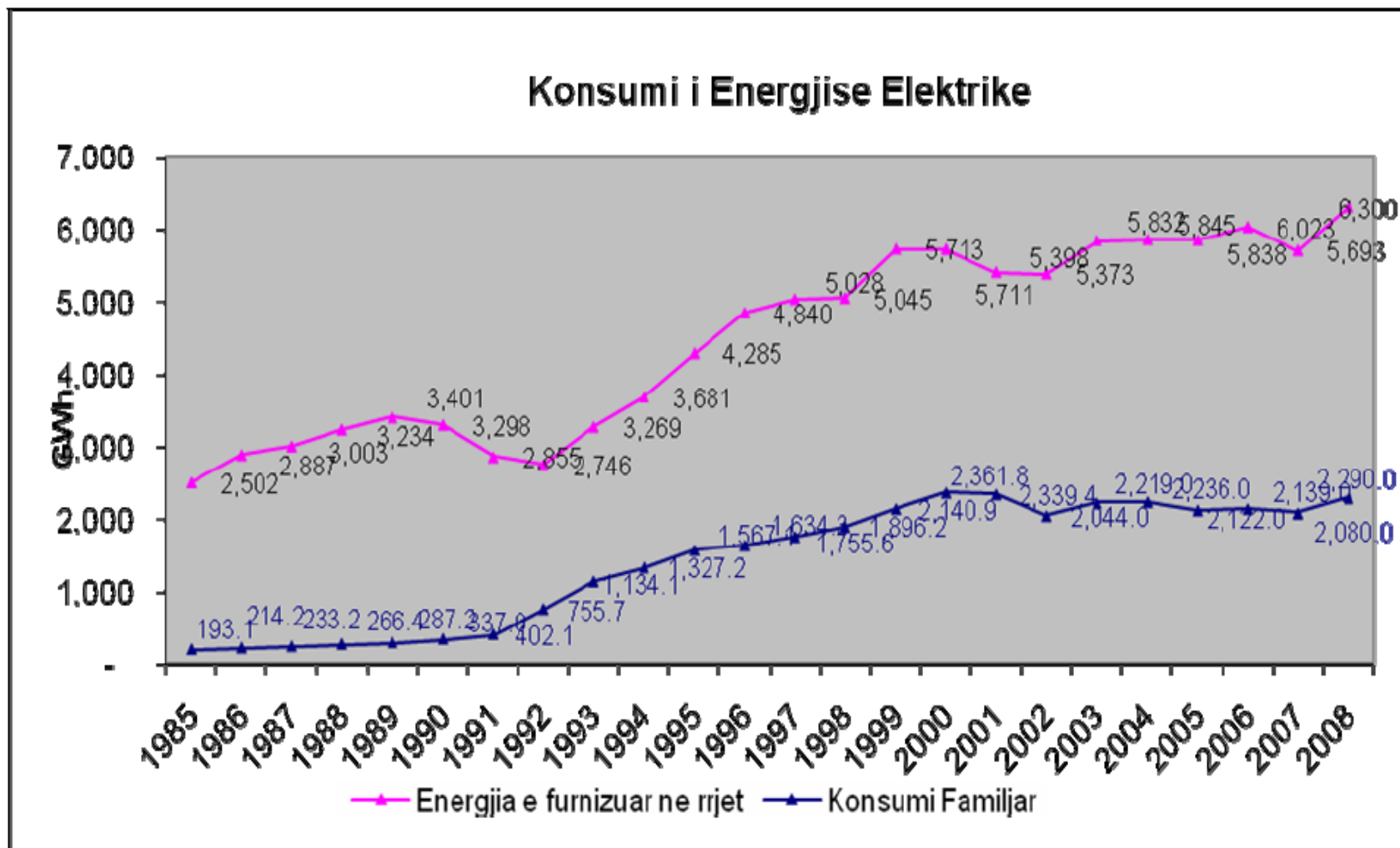
# ELECTRICITY CONSUMPTION IN FAMILIES 1985-2008

- The change in the political system caused overturn of the structure of electricity consumption
- The factors to the household consumption growth:
  - Populations “hunger” for electrical appliances
  - Low price, use of electricity for heating
- From 7.7% of the supply in (1985) to 36.3% in 2008.

# ELECTRICITY CONSUMPTION IN FAMILIES 1985-2008



# ELECTRICITY CONSUMPTION IN FAMILY 1985-2008



# ELECTRICITY CONSUMPTION IN FAMILY 1985-2008

- 1985 - 1991 annual consumption growth 24GWh/year.
- 1991 - 2001 annual growth of consumption 194 GWh / year or 8 times.
- Household consumption in 1991 was 402.1 GWh .
- Household consumption in 2001 was 2339.4 GWh.
- Household consumption in 2008 represented 57% of billed electricity.

# ELECTRICITY CONSUMPTION IN FAMILY 1985-2008

Services provided by the use of electricity for family needs

a- For electric lighting	100 % of households
b- For family cooking	80 %
c- For sanitary hot water	95 %
d- House heating	30%
e- For cooling (air conditioners)	
f- For storing food (refrigerator)	100 %
g- Washing clothes with washing machine	100 %
h- For information & visual education with TV	100 %
i – For common areas	

# ANALYSIS OF HOUSEHOLD CONSUMPTION FOR 2008

Consumption interval	Number of household consumers for each consumption interval		Billed energy for each interval		Average consumption / family for each interval
kWh/Month	Consumer	%	kWh	%	kWh/Month
0	181,291	21.3	0	0.0%	0.0
1-100	128,627	15.1	106,631,572	4.9%	69.1
101-200	189,048	22.2	352,335,434	16.1%	155.3
201-250	73,983	8.7	203,378,238	9.3%	229.1
251-300	81,388	9.5	280,421,174	12.8%	287.1
301-400	85,820	10.1	372,729,455	17.0%	361.9
401-500	44,450	5.2	245,624,134	11.2%	460.5
501-600	31,468	3.7	213,728,469	9.8%	566.0
>600	36,286	4.3	413,284,925	18.9%	949.1
<b>Total</b>	<b>852,361</b>	<b>100.0</b>	<b>2,188,133,401</b>	<b>100.0%</b>	<b>213.9</b>



# ANALYSIS OF HOUSEHOLD CONSUMPTION FOR 2008

- Excluding consumers with zero monthly consumption, the average specific consumption results 271.7 kWh/month
- Actual average consumption that takes into account the non-technical losses (759 GWh) results 365.9 kWh/month
- Excluding customers with zero consumption, 473 thousand subscribers consume up to 300 kWh/month or 55.5%.
- 317 households or 37.3% consume up to 200 kWh/month.
- We think that consumers with low income participate in the level of household consumption up to 200 kWh/month.

# STRUCTURE OF HOUSEHOLD ELECTRICITY CONSUMPTION

## Preceding studies

- Study conclusions of National Energy Agency
  - 220 kWh/month - minimum energy necessary for vital needs (cooking, lighting, washing machine, audio-visual information, fridge).
  - 300 kWh/month - minimum energy beyond which begins its use for house heating.
- Conclusions of Decon study
  - In 2001 the normal demand for electricity, excluding house heating and sanitary hot water for a family in Tirana was 254 kWh / month (277 kWh/month with NTL) in the village of 147 kWh / month (170 kWh/month NTL).
  - In 2015 the estimated maximum energy needs for households in Tirana will be 317 kWh/month and in the countryside 277 kWh/month.

# METHODOLOGICAL PRINCIPLES FOR THE STUDY OF ERE

- Study of ERE - the product of a joint work with institutions that deal with social policy and protection of people in
- INSTAT, through "Living Standards Measurement Survey-LSMS -2008," provides a broad database on the economic situation of people in need.
- ERE addresses the study for household electricity consumption from the perspective of financial capability of people in need to pay electricity bill.

# METHODOLOGICAL PRINCIPLES FOR THE STUDY OF ERE

- Through the mechanism of electricity price, ERE aims to discourage the use of electricity for house heating and for cooking.
- Combining the Government subsidizing policies with differentiated tariff system by the level of electricity consumption according to the electricity consumption.
- Evaluation of the electricity need for household consumption is based on family structure today in Albania average of 4 persons (INSTAT).

# METHODOLOGICAL PRINCIPLES FOR THE STUDY OF ERE

- Part of the study is the measurement of specific electricity consumption for some appliances that enables the determination of the quantity of these services within the limits of the first block and within the limits of energy consumption without heating and cooking.
- We respect the reasoning of the WB and NAE that energy for cooking is essential part of the family needs for electricity.

# STUDY FROM ERE

ERE has seriously considered:

- 1- Energy policies for protection of household consumers in need.
- 2- Present-day governmental policies for vulnerable consumers protection.
- 3- Benefiting categories (no income, disabled, retired, wage under the limit)
- 4- Determination of financial compensation.
- 5- Subsidy scheme.
- 6- Conditioning of the subsidy benefit for electricity payment.
- 7- Statistical indicators of the family budget for electricity.

# STUDY FROM ERE

## (Statistical Indicators for Electricity Household Budget )

- According to data from the project: "Living Standards Measurement Survey - LSMS-2008" conducted by INTSAT, the family monthly budget for electricity is;
  - Families with low income 1,775 leke/month or 7 %
  - Families with no low incomes 2,385 leke/month or 5.3 %
- Monthly amount of electricity that households with low income can pay is 211kwh/month;  
 $(a \times 7)1.2 = 1775$   
a—monthly quantity needed for electricity in kWh  
7— electricity tariff for the first block 7leke/kwh  
1.2 - value of VAT (20% of value)

# STUDY FROM ERE

## (Analysis)

- In the analysis made up to now the review of minimum essential need for electricity to consumers with low income:
  - Is considered from the social and economic-financial point of view (the relationship between these consumers, financial support from the Government, the average monthly income, expenses for electricity and the amount of electricity consumed )
  - Are analyzed the DSO data (the relationship: number of family consumers - electricity consumption for each interval 0-600 kWh)



# STUDY FROM ERE (Analysis))

According to the Billing Register in DSO for 2008						
Monthly Consumption	Number of Household Subscriber		Average Billed Consumption		Average Real Consumption	
kWh/Month	Subscribers	%	GWh/Month	kWh/Month	GWh/Month	kWh/Month
Up to 250	391,658	46.00	55.19	141	65.10	166
According to the Ministry of Labor and INSTAT for 2008						
Up to 250	272,000	34.40	57.39	211		

Social category of households with low income group is part of DSO consumers with average monthly consumption up to 250 kWh / Month

## STUDY FROM ERE

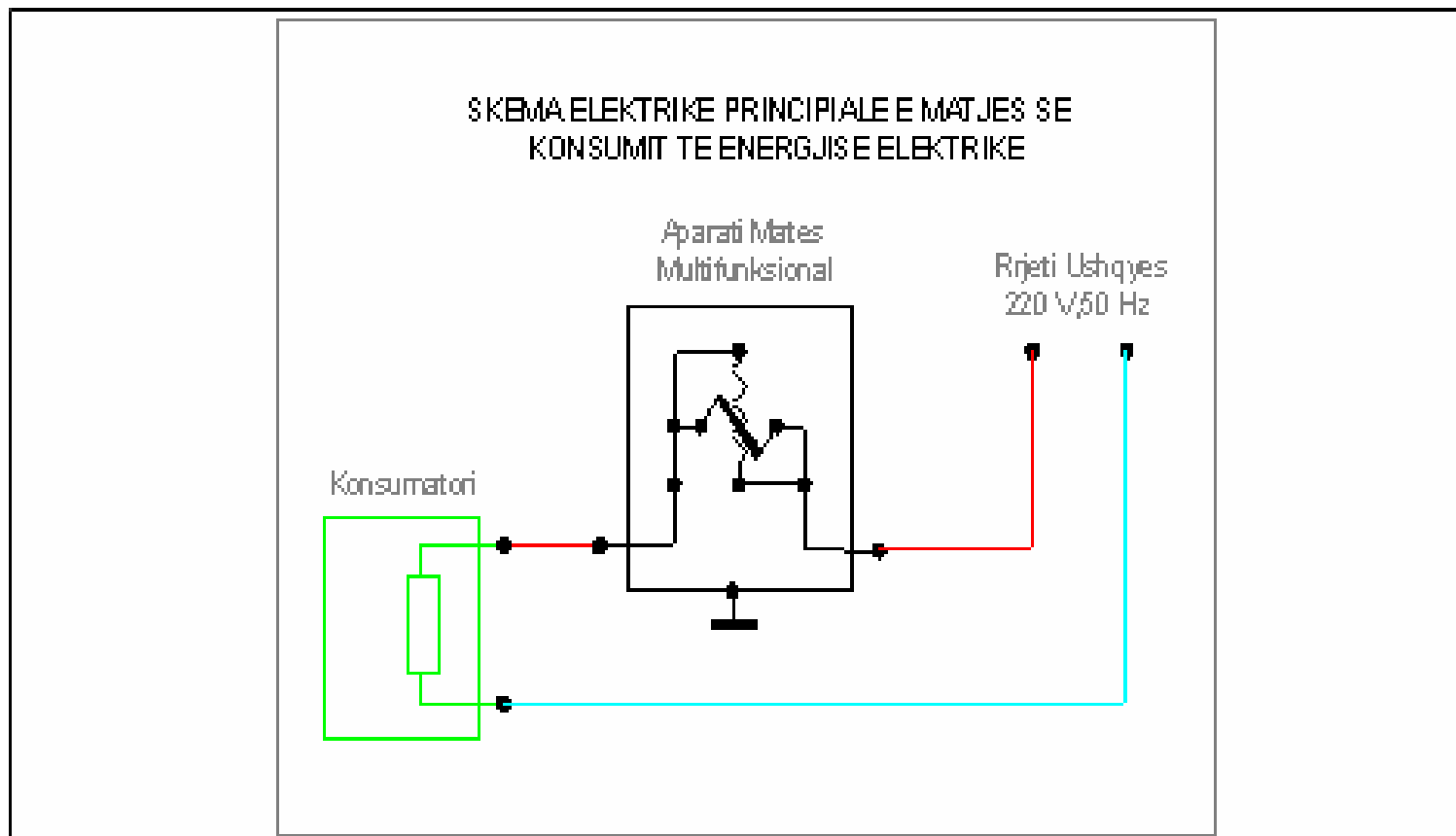
### (Household Electricity Consumption)

- Electricity bill (including VAT) for the consumption of existing first block of 300 kwh / month results in 2520 leke.
- Average monthly budget that is paid by families in need is 1775 leke /month.
- Existing block of 300 kwh/month as determined by ERE for which starts the use of electricity for heating and which aims to discourage the use of electricity for heating is higher from that which according to the analysis should serve only to families in need.
- From the payment ability of the families in need, the first block would be reasonable to be in the amount of 210 kwh/month.

Type of service	Monthly consumption			
	%	KWH	%	KWH
Electric lighting	24.2	50	11.6	35
Cooling with refrigerator	9.57	22	10.69	32
TV & video information	8.49	18	9.63	29
Information with satellite receiver			2.01	6
Sanitary water heating			19.33	58
Washing machine	12.85	27	10.05	31
Cooking with electricity	27.45	58		
Common areas	8.07	17	7.07	21
Audio system information			3.76	11
Ironing	3.20	7	3.38	10
Cooling with fan	6.17	13		
Vacuum cleaning			2.52	8
Air conditioning			12.11	36
Dish washing			4.17	14
Computer use			2.84	9

Specific weight in  
% of  
electricity for each  
type of service to  
vs total electricity

# STUDY FROM ERE



Principal electrical scheme of the multifunctional metering device

# STUDY FROM ERE

## Conclusions

1. ERE has the duty to treat very carefully the reform of the electricity price, keeping the proper balances for costs recovery of electricity supply, increasing performance and maintaining achieved level of the citizens life quality.
2. Under the conditions when the consumption of electricity for household needs versus electricity billed is influential (57%), importance takes rational consumption and efficiency of this energy. The level of technical losses is mainly attribute of family consumers, leading to the unjustified increase in electricity prices

## STUDY FROM ERE

3. ERE activity should remain a regulatory activity while protection policies for social categories remain the responsibility of state institutions, aiming mechanisms of direct subsidies from the state.
4. Through studies of household electricity consumption, for the ERE is created the basis to adopt the price structures which aim to consider all the factors influencing the setting as rational and fair prices and electricity tariffs.

# STUDY FROM ERE

## Recommendations

- Encourage the use of thermal solar panels at a cost as low to benefit sanitary hot water.
- Use of electric lamps for lighting with high efficiency as well as the use of all appliances with high efficiency affects the increase of energy efficiency and demand reduction.
- Aiming that the direct subsidies from the state is to focus only on the group of consumers in need after the lists of these consumers are specified.

Thank You For Your Attention