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National
Association of
Regulatory
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Affordability of cost covering tariffs

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presented at

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in Market Economies**

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Center for
Energy and Natural Resources

Plan of the lecture

- subsidies and cross-subsidies
- definition of affordability
- poverty and inequality
- affordability of utility services in the region
- social protection schemes
- comparison of different approaches

Subsidies and cross-subsidies

May 23, 2008

Why do countries subsidise energy?

- Protect industry
- Ensure employment
- Protect environment
- Promote technology
- Improve energy security
- Social welfare, equity, re-distribution of income
- Ensure access to fuel for poor
- Fixing market imperfections, energy technology

Consequences of undervalued energy prices and subsidies

- distorted economic structure,
- economic efficiency loss, resulting in loss of GDP,
- higher energy consumption and waste of energy,
- discouraging energy efficiency investments,
- promote irrational consumer behaviour
- higher air pollution
- unprofitable operation of the energy sector
- threat to the viability of the energy sector

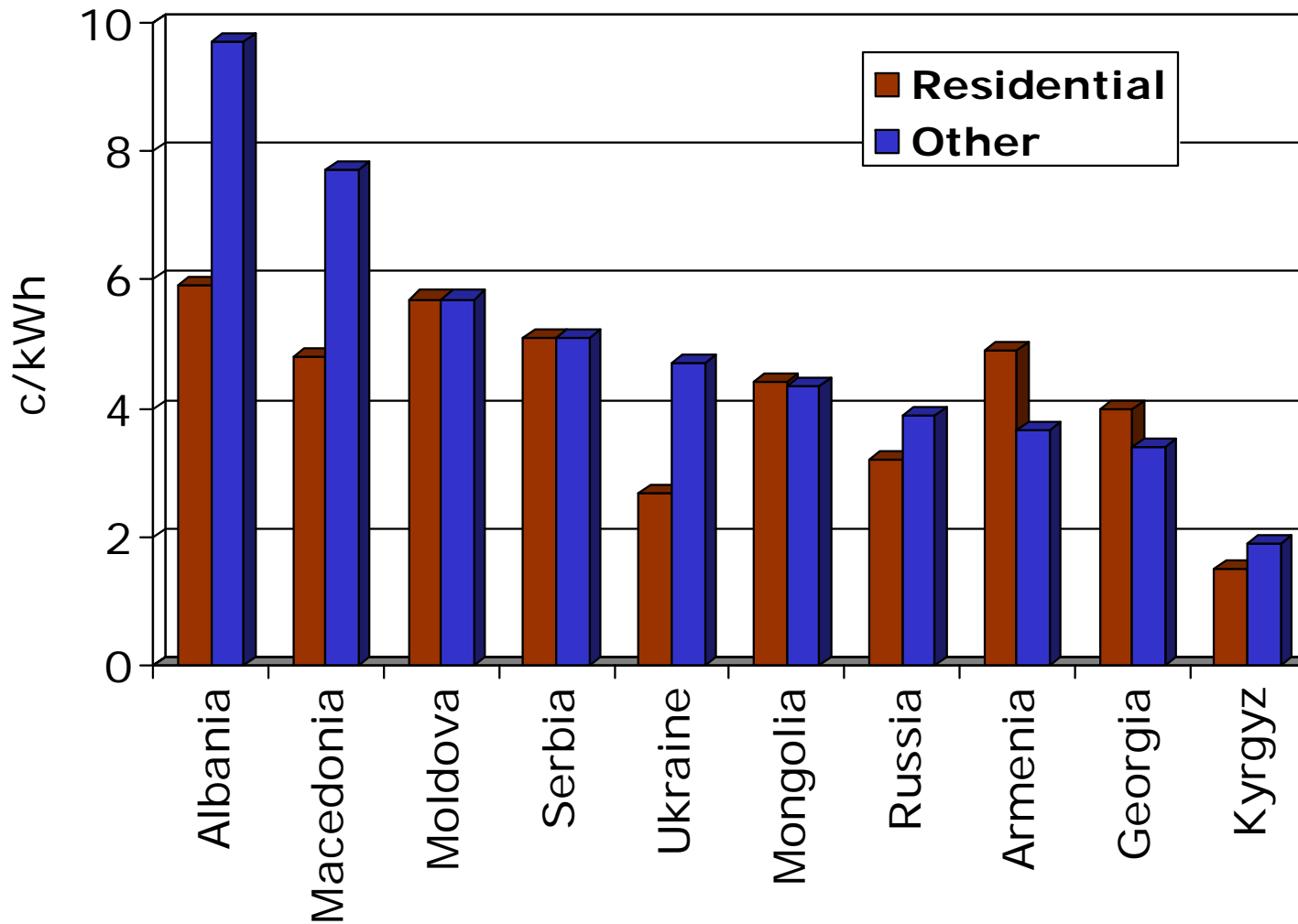
Subsidies and public service obligations

- subsidies usually are not acceptable as they distort the market
- but support for low-income, vulnerable, remote consumers, protection of environment, support of the strategic goals of the country , security of supply, etc. could be accepted
- EU Directives allow various public service obligations, but require that they were transparent, fair, well-defined
- almost all countries support renewables, co-generation, etc.

- cross-subsidies mean that certain consumers, consumer groups are paying for other consumers or consumer groups
- example: in Ukraine, Russia industrial consumer for electricity pay more than the residential ones – clear social cross-subsidy
- cross-subsidies provide wrong signals to consumers
- they are unfair to certain consumer groups
- they discourage private investments
- in the long run may lead to shortages

Residential and non-residential electricity prices in the non-EU ERA countries

(without taxes)



Example: problems in district heating in some CIS countries

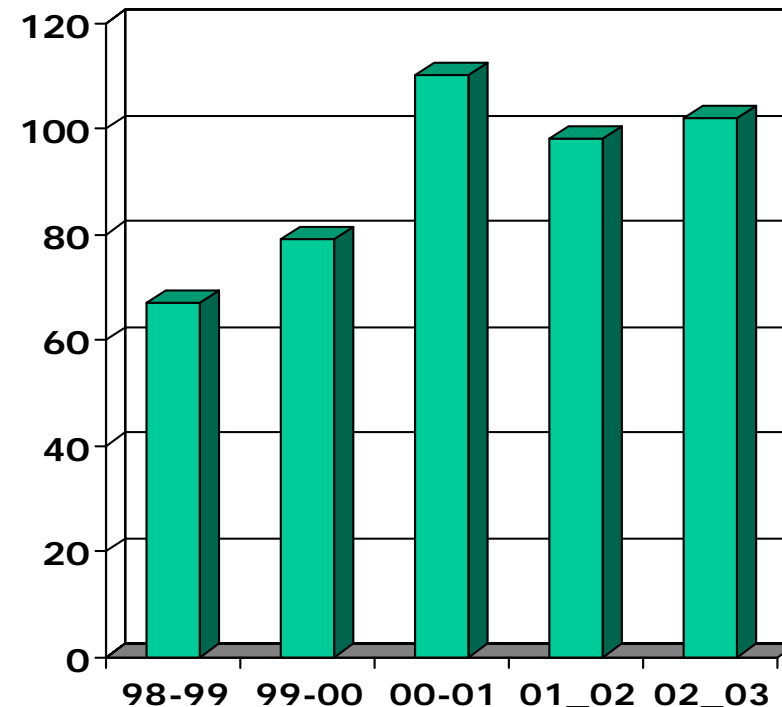
- district heating in Armenia, Azerbaijan, Georgia, Tajikistan and Kyrgyzstan in smaller towns has deteriorated to such state that they have been discarded
- even in capital cities the systems need extensive rehabilitation and serve a greatly reduced customers group
- people switched to natural gas heating (where available) or electrical heating (it causes new problems to the electrical grid)

Source: WB

Example: problems in district heating in Russia

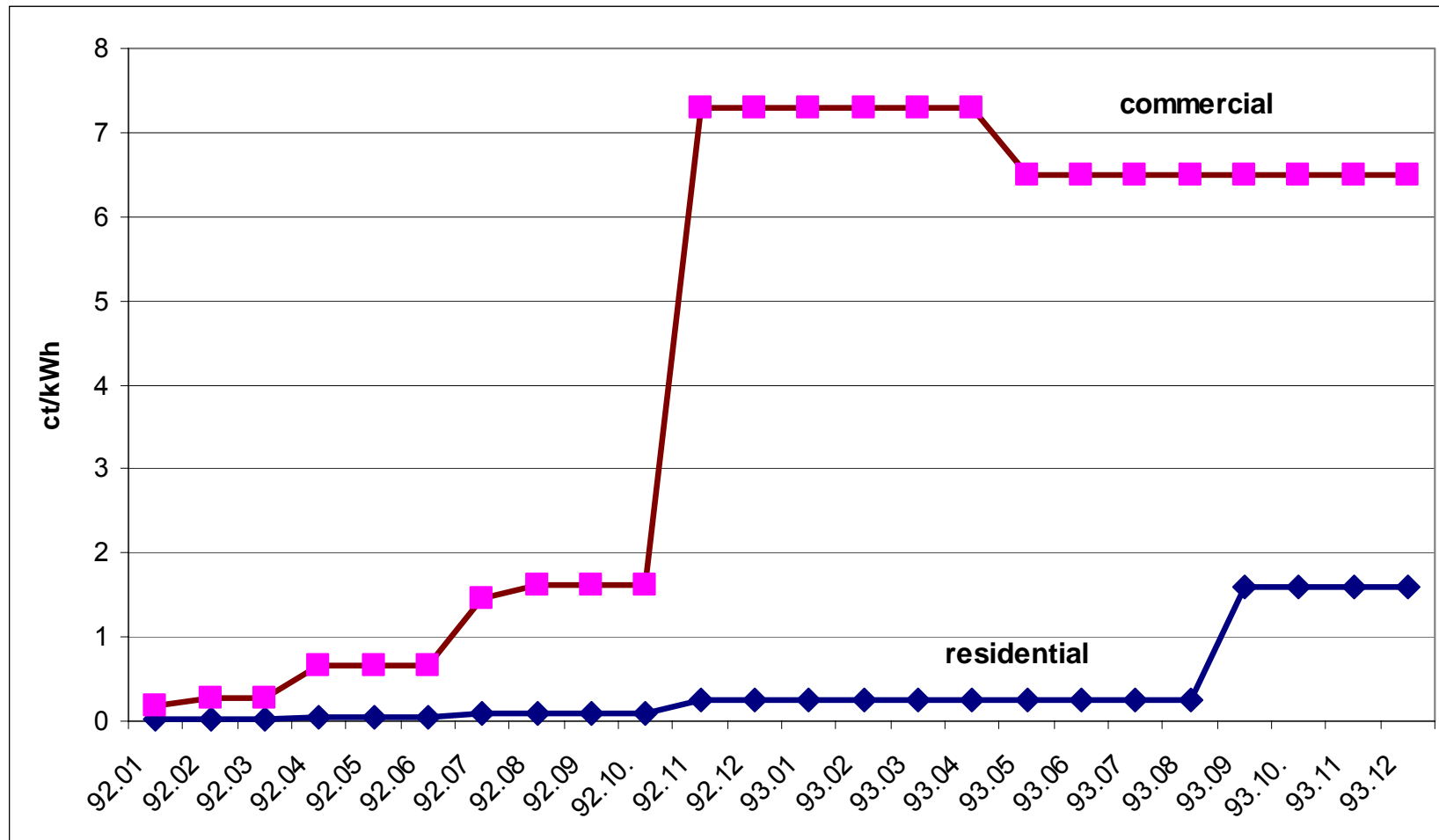
- dilapidation of networks and equipment
- lack of preparation for winter (no fuel)
- improper operation
- natural disasters

Number of breakdowns and stoppages



Source: WB

Example: sudden, steep increase in district heating prices in Lithuania



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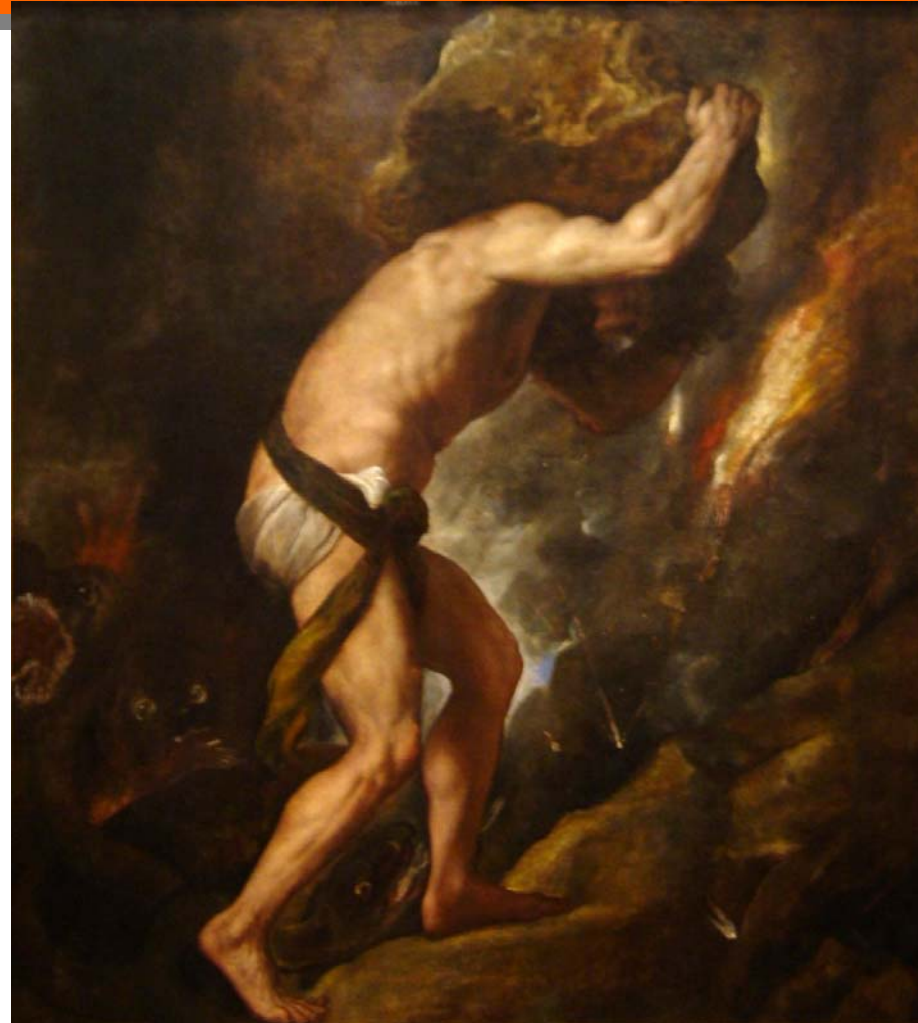
Definition of affordability

Definition of affordability

- at its simplest, affordability (or the affordability ratio) is defined as the share of monthly household income that is spent on utility services, such as electricity, district heating and water
- alternatively, and often more accurately, affordability may be expressed as the share of utility payments in total household expenditures
- using household expenditures rather than income tends to provide more accurate information, as household income data rarely capture all sources of revenue
- in less developed countries expenditure is a more reliable indicator of the resources available to households

Affordability is a problem

- for some consumers in many countries
- for many consumers in some countries



Benchmarks used to measure affordability

Source	Electricity	Heating	Water
WB (2002)	10-15		3-5
IPA (2003)	10	20	
UN/ECE		15	
UK gov.		10	3
US gov.		6	2.5
Lithuania		20	2

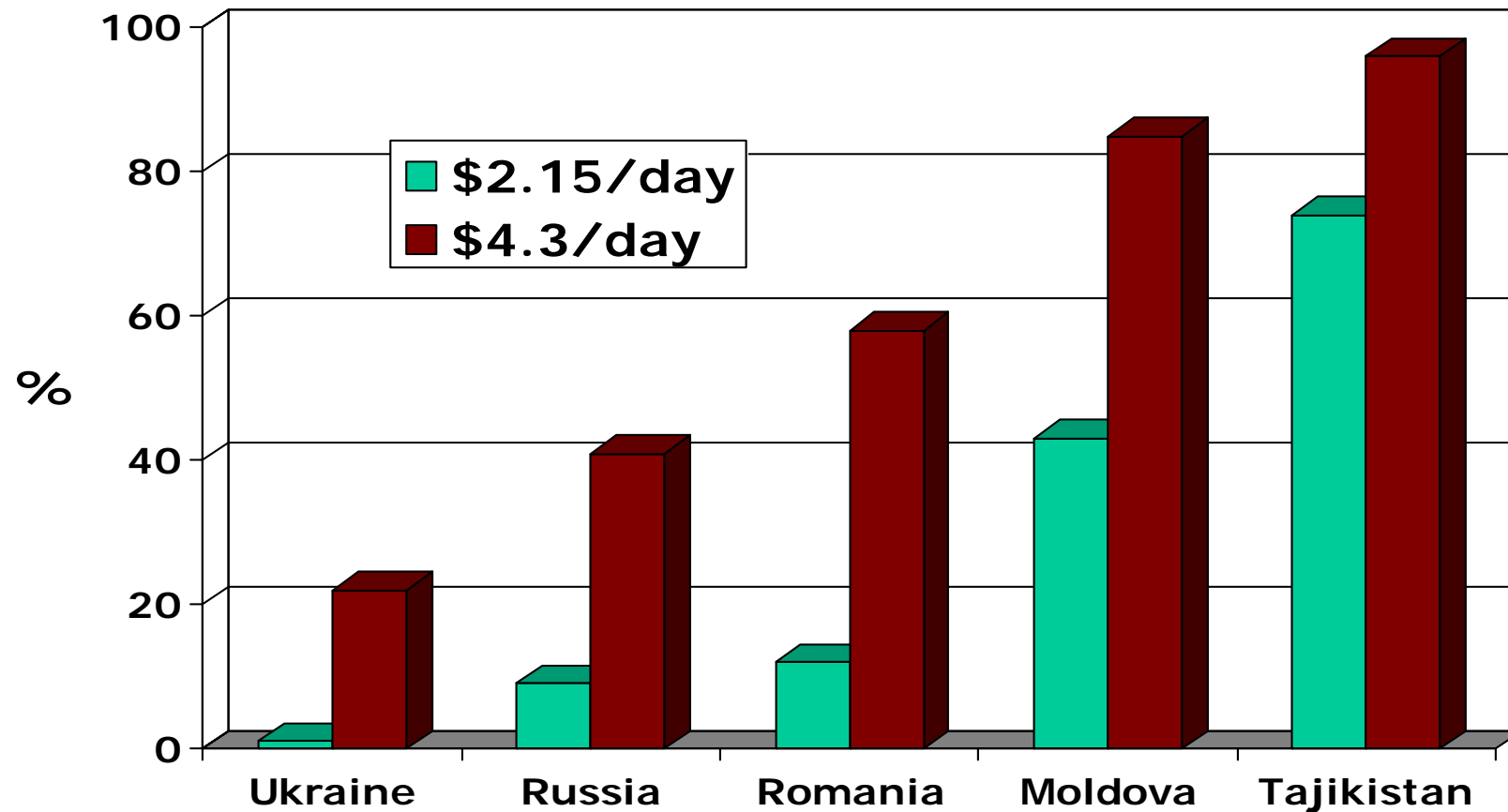
Measure of household resources

- average employment income
- consumption deciles
- national poverty line
- absolute poverty line (WB: absolute poverty \$1 per person per day, poverty \$2/pppd)
- vulnerable consumer income

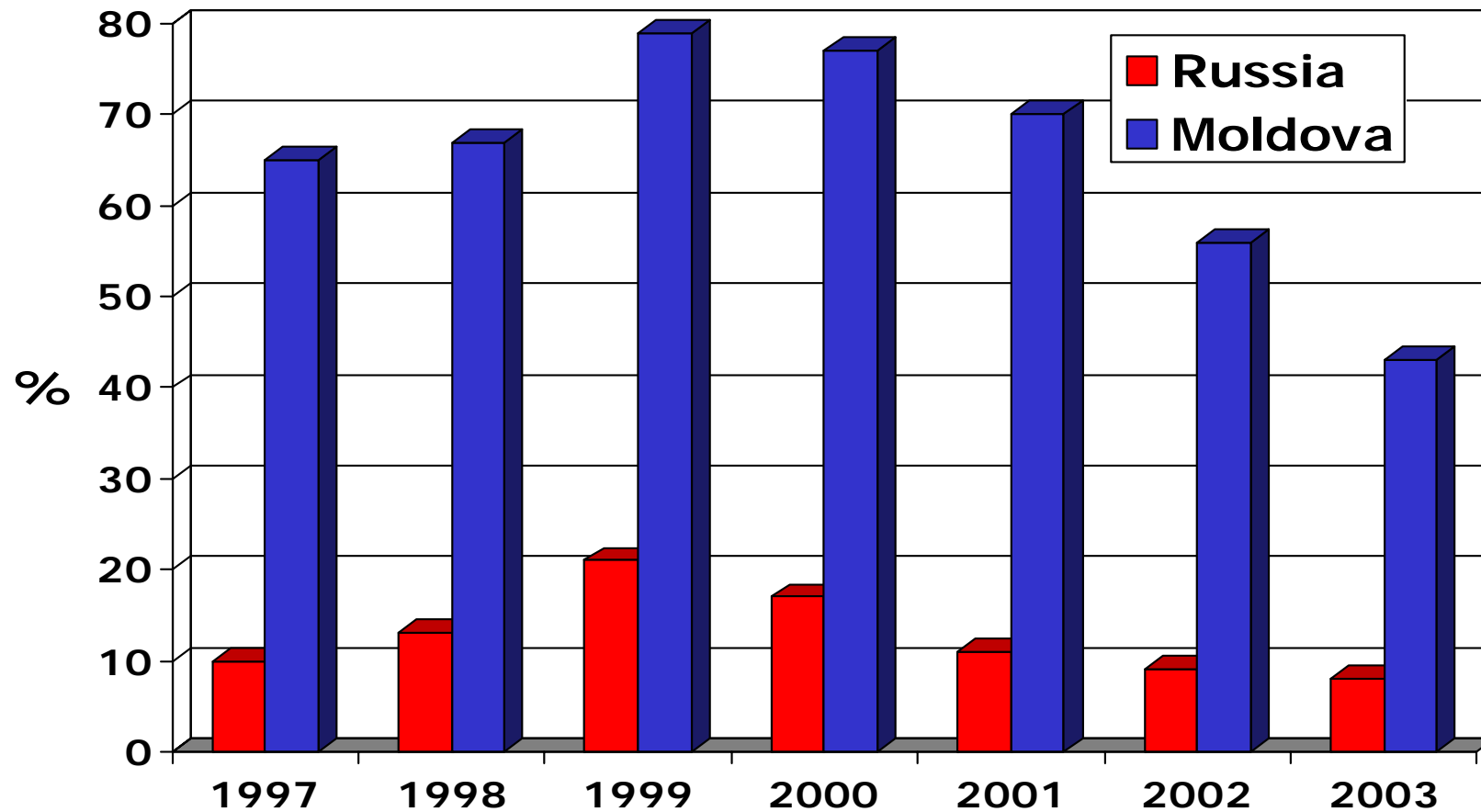
Poverty and inequality

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Poverty rate in 2003 (WB)



Poverty (less than \$2.15) rate



Inequality (household expenditure or income by deciles, 2002, €)

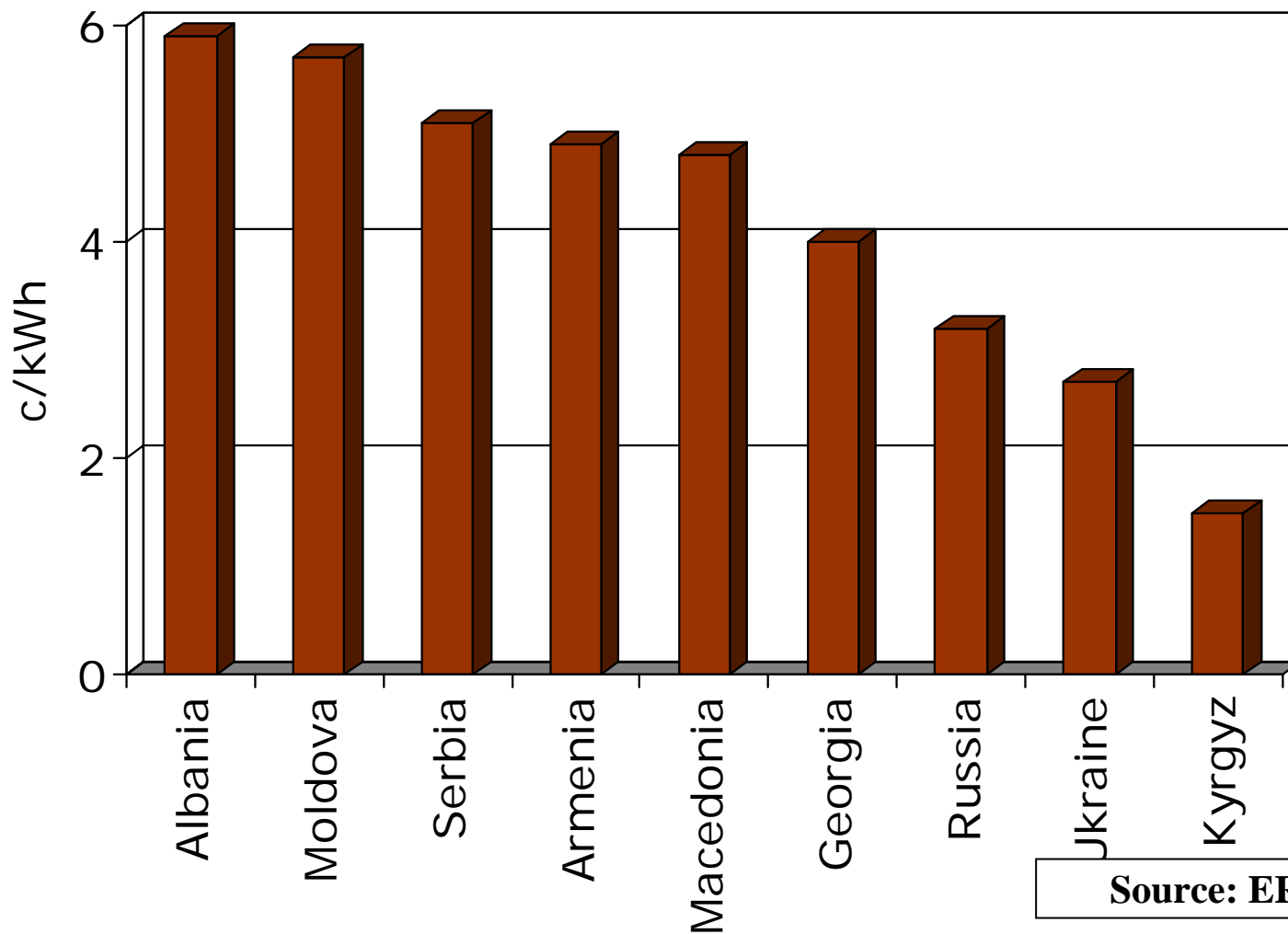
	1	2	3	4	5	6	7	8	9	10
Mo	15	24	30	37	44	52	64	78	104	188
Ro	130	136	144	155	168	175	192	225	262	398
Bu	43	72	95	117	140	171	208	252	319	502
Se	145	212	249	287	332	386	424	496	595	896
Cr	231	303	379	434	563	687	857	936	1041	1429

Source: EBRD

Affordability of utility services in the region

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Residential electricity prices in the non-EU ERRA countries (2006)



Affordability of utility services

(average household, % of total expenditures)

	Electricity	Heating	Water
Slovakia	3.5	7.9	1.3
Estonia	3.2	5.4	1
Bulgaria	7.3	1.2	2.5
Romania	4.8	2.5	3.1
Armenia	6.2	0.1	0.5
Azerbaijan	1.8	0.9	0.6
Moldova	3.5	1.2	0.4
Ukraine	2.1	2.4	1.2

Source: EBRD, 2005

Affordability of utility services

(bottom decile household, % of total expenditures)

	Electricity	Heating	Water
Slovakia	11.4	18.6	4.3
Estonia	8.2	15.4	2.4
Bulgaria	8.5	0.4	2.7
Romania	4.1	0.3	0.2
Armenia	6.1	0.0	0.1
Azerbaijan	2.4	0.0	1.1
Moldova	5	0.4	0.3
Ukraine	2.6	0.4	0.6

Source: EBRD, 2005

Example: Fuel poverty in the UK

- A fuel poor household is one that needs to spend more than 10 per cent of its income on fuel to maintain a satisfactory heating regime
- In 2001 approximately 3 million households in the UK were in fuel poverty, about than 1 in 8 households, and around 2 millions of these were vulnerable households, containing people who are elderly, sick, disabled or children

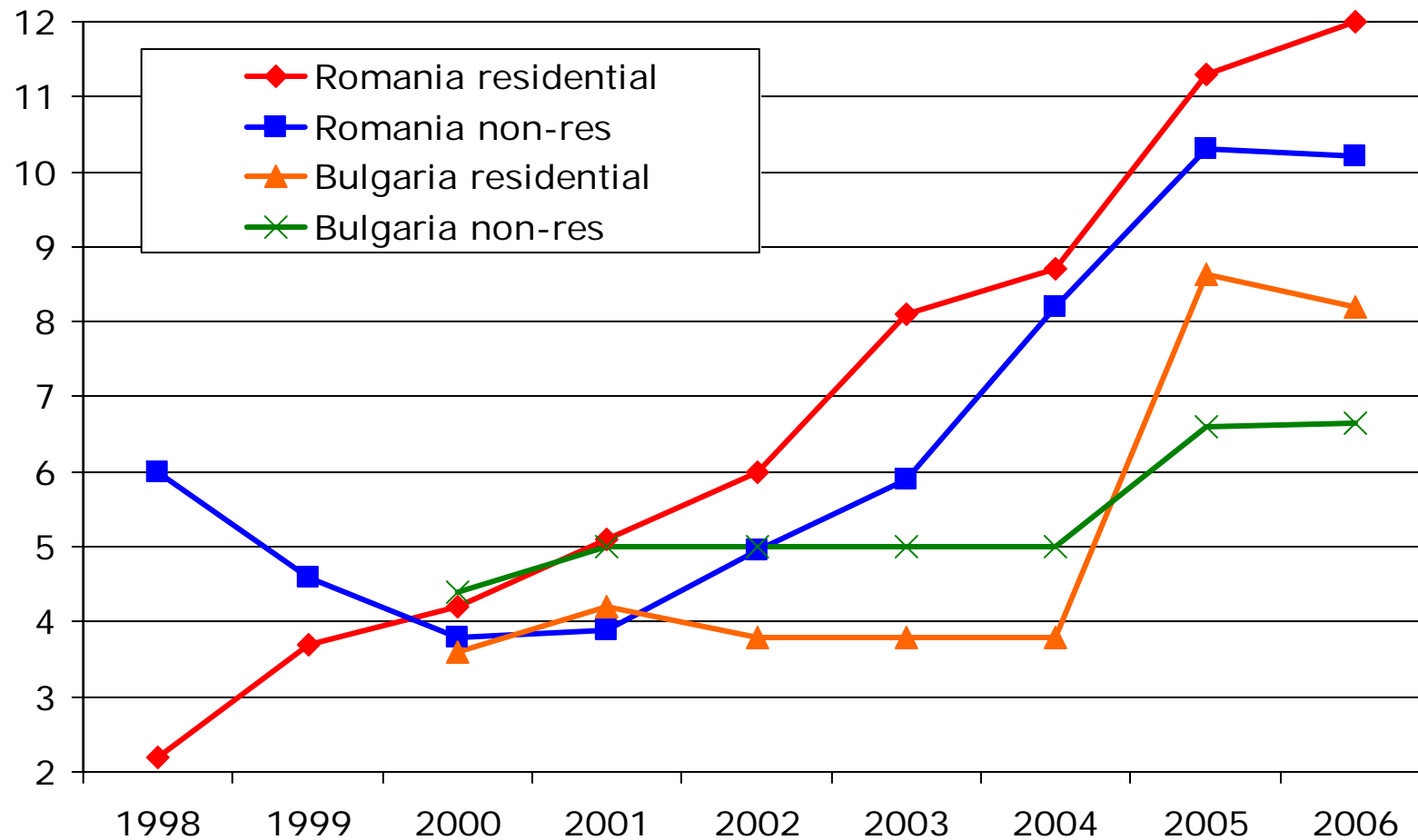
Example: categories of consumers in Moldova spending more than 10% of income for electricity (50 kWh/month)

- single pensioners and single unemployed
- households with over 2 members receiving social assistance
- households in the bottom expenditure decile
- individuals classed as absolutely and relatively poor (WB definition)

Electricity affordability

- low income and high tariffs reduce electricity affordability
- it is a problem for the poorest population
- high tariffs press residential consumers to reduce demand (average household monthly consumption in Moldova is 55 kWh only)
- low, not covering cost tariffs cause serious problems for the quality of supply and threats for the continuity of supply

Fast increase and re-balance of tariffs in Bulgaria and Romania



Social protection schemes

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Mitigation strategies: making energy affordable

- reducing cost of energy supplies
 - lifeline tariffs,
 - energy discounts,
 - energy subsidies,
 - privileges
- compensating consumers for the cost of energy supplies
 - compensation up to a certain benchmark
 - cash and in-kind transfers
- reducing demand for energy
 - discounts on energy efficient equipment
- improving access to energy supplies
 - lower connection charges
 - relaxed disconnection procedures

Social subsidies should be

- **well-targeted**—subsidies should go only to those who are meant and deserve to receive them;
- **efficient**—subsidies should not undermine incentives for suppliers or consumers to provide or use a service efficiently;
- **soundly based**—subsidy programmes should be justified by a thorough analysis of the associated costs and benefits;
- **practical**—the overall amount of the subsidy should be affordable and the administration of the subsidy programme should be at a reasonable cost;
- **transparent**—information on the amount of government money spent on the subsidy and on subsidy recipients should be disclosed;

Reducing costs of energy supplies

- lifeline tariffs are the most popular
 - two and three block tariffs
 - transparent, predictable and easy to administer
 - but poorly targeted
 - directly distort prices
- discounts and privileges
 - can be applied directly to bills
 - administratively complex and open to corruption
- energy subsidies are non-transparent and indirect

- direct compensation up to given benchmark
 - requires good information about which households are in need
 - does not distort prices
 - administratively complex, unpredictable and open to corruption
- cash transfer programs
 - similar to direct compensation measures but are not linked to actual energy expenditure
 - administering cash transfer programs typically requires more information and administrative purposes

Reducing demand

- demand side measures have received higher attention due to growing fuel prices and worries about climate change
- energy efficiency measures have shown to reduce energy bills by 20-40% - an effect equal or greater than that achieved by subsidies
- but there are the principal barriers
 - availability of finance
 - lack of awareness and coordination at the Government level
 - lack of public awareness of energy efficient technologies
 - lack of metering, etc.

Social protection mechanisms in the SEE region

Country	Block tariff	Subsidy to consumer categories	Subsidy to welfare benefic.	Seasonal subsidy	Non-disconnection
Albania	×				×
Bulgaria	×			×	×
Croatia					
Macedonia				×	×
Moldova	×	×			
Romania	×				
Serbia	×		×	×	×

Source: EBRD

Lifeline tariffs in the SEE region

	Block design	Optional or compulsory	Differenti-ation
Albania	two block	compulsory	none
Bulgaria	two block	compulsory	time of use, seasonal
Moldova	two block	optional	none
Romania	two block	optional	none
Serbia	three block	compulsory	time of use

Source: EBRD

- compensation of district heating expenditures exceeding 20% of the household's income
- money are allocated from the state budget and administrated by municipalities
- costly administration
- not very well targeted
- the scheme was recently changed to evaluate the households personal estate

WB comparison of different social protection schemes

- no disconnection of the non-payers
- across-the-board household price subsidies
- lifeline tariffs (2 or 3 blocks)
- price discounts provided to households (occupation, medical history, etc.)
- compensation for the share of utility bill that exceeds a given percentage of the monthly households income
- other earmarked cash transfers to households
- non-earmarked cash transfers to poor households

WB comparison. Evaluation criteria

- coverage (extent to which the poor are reached)
- targeting (the share of subsidy that goes to the poor)
- predictability of the benefit to the poor
- fiscal impact
- impact on the fiscal position of the utility
- price distortions
- administrative simplicity

WB comparison. Results

Criteria	No disconnection	Subsidy from budget	Cross-subsidy	Lifeline 2 blocks	Lifeline 3 blocks	Lifeline floating block	Discounts to privileged	Burden limit	Other earmarked cash transfer	Non- earmarked cash transfer
Coverage	1	1-2	1-2	1-2	1-2	1-2	1	1	1	1
Targeting	0	0	0	0	2	1	1	0	2	2
Predictability	0	2	2	2	1	2	2	1	1	1
Fiscal cost	-1	-2	0	0	0	0	-1	-1	-1	-1
Cost for com.	-2	0	-1	-1	0	-1	0	0	0	0
Pr. distortion	-2	-1	-2	-1	-2	-1	-1	-1	-1	0
Adm. cost	0	0	0	0	0	-1	-1	-2	-2	-2
Total	-4	0-1	0-1	1-2	2-3	1-2	1	-2	0	1

Conclusions

- tariffs should cover costs otherwise there are serious problems for the quality of supply and threats for the continuity of supply
- each of the social protection schemes has its advantages and disadvantages
- political will is essential
- the needs are country specific
- good communication among the regulator, Government (ministry of social protection) and ESCOs is necessary

THANK YOU FOR YOUR ATTENTION!

REKK was established at the Corvinus University of Budapest in December, 2003. The mission of REKK is to contribute to the creation of working energy markets and the establishment of efficient regulation by carrying out applied research, training and quality consultancy activities for all those interested persons and organizations that are active in the field.

We think that the experiences that Hungary and some other Central and Eastern European countries have gained through the restructuring and re-regulation of their energy markets are valuable and relevant for all transition economies. This is why the Centre intends to put a special emphasis on the research and dissemination of the regional experience and intends to become a regional research and training centre.

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