



Innovative  
Financing  
solutions for  
social  
housing?

# Public responsibility in Prague

**Public  
Responsibility**

**Who should do what?**

**private  
initiative**



# GDR heritage in Lübbenau/Brdbrg



Insufficient insulation (convection – transmission)

Unattractive design of flats, but

Attractive placement in the city

# The framework for innovative financing ... in Eastern Europe

---

- Mistrust in social policies
- State policies on ownership
- Missing public responsibility
- Lack of money
- Subsidized energy prices
- Weak economies
- Lack of know-how
- Need of people



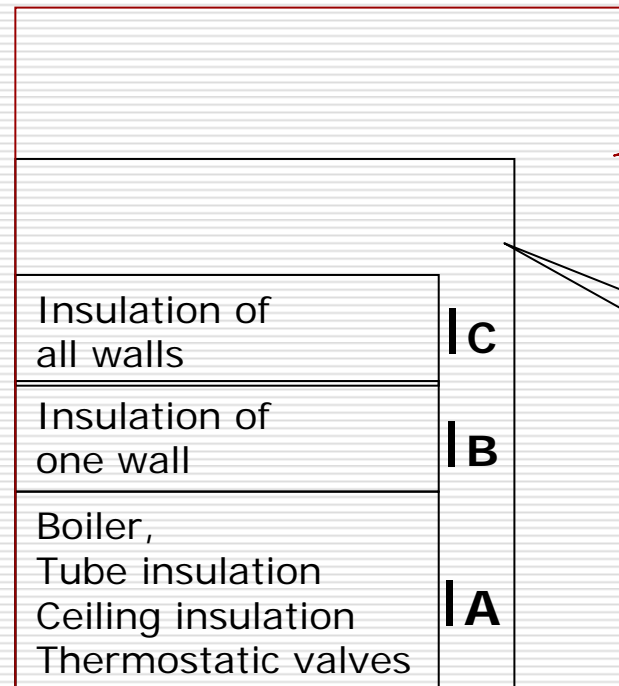
**well spread**



# What are we talking about

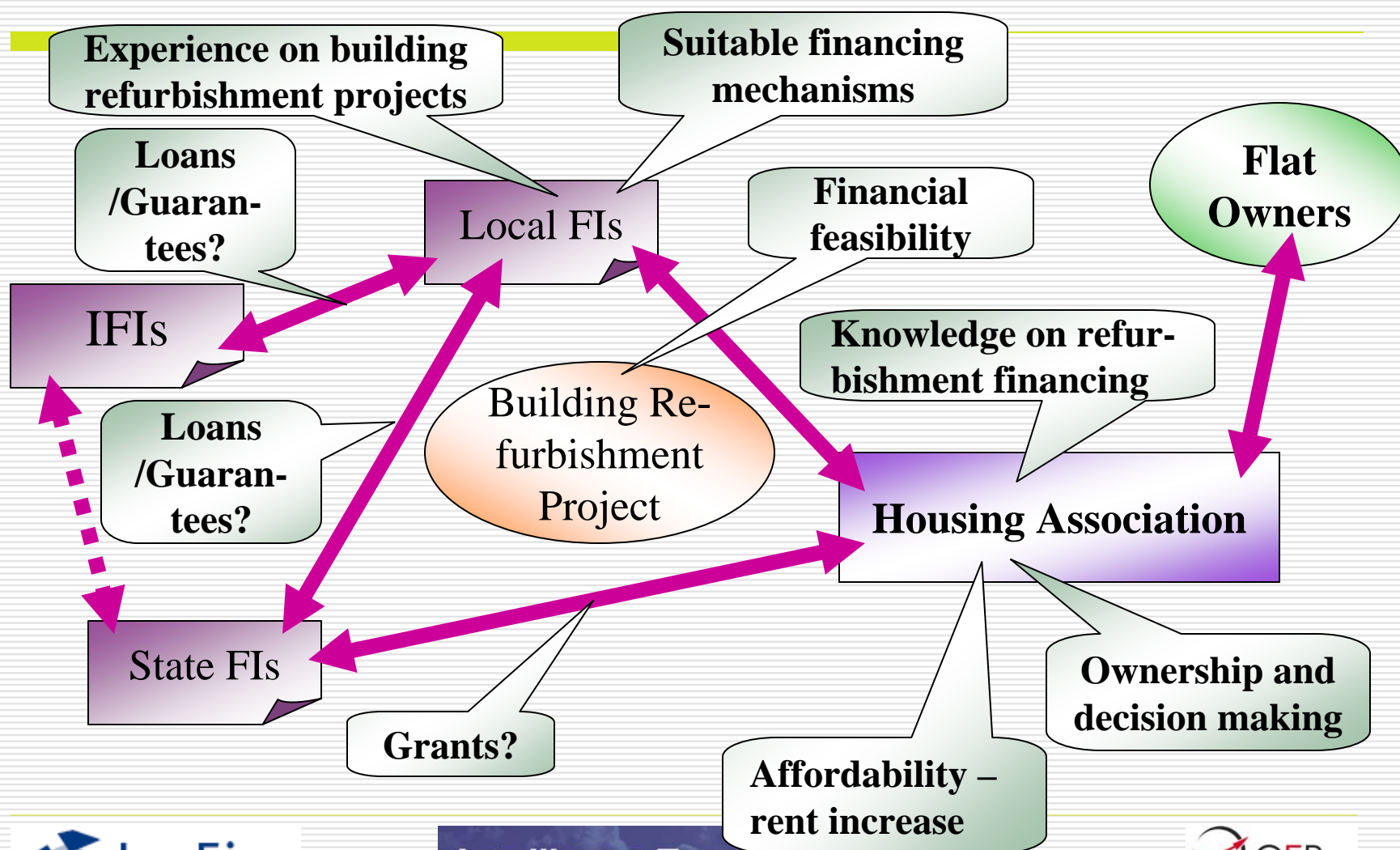
## Technology and economy in a social framework

Saving*	time
?	>20y
?	>10y
45%	5-10y
30%	5y



\*estimated effect on consumption in kWh/m<sup>2</sup>

# Building Refurbishment Barriers' Landscape



please keep in mind

---

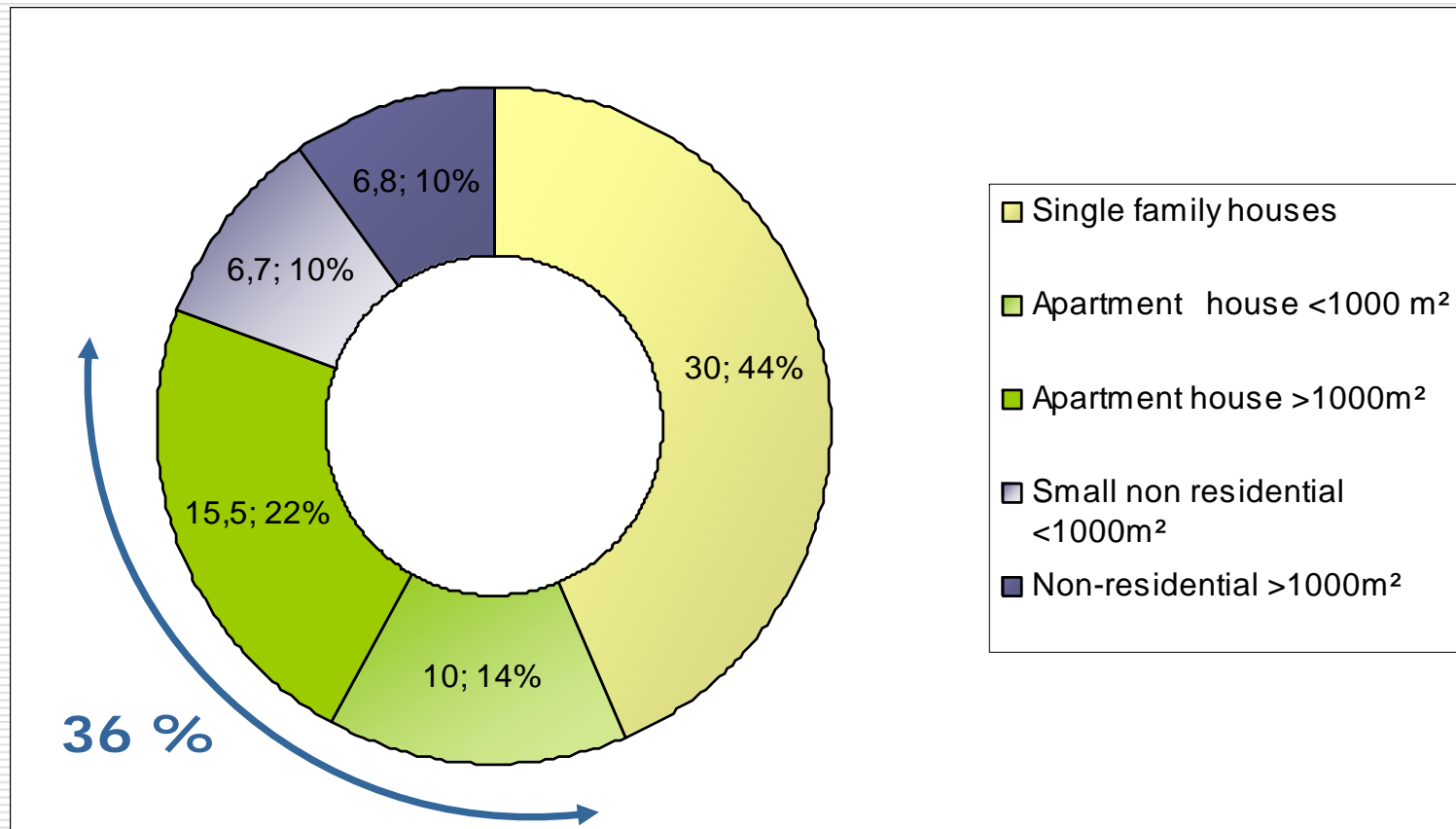
Certainly it is

- about technical improvement
- added value of people's property
- rising energy costs

but

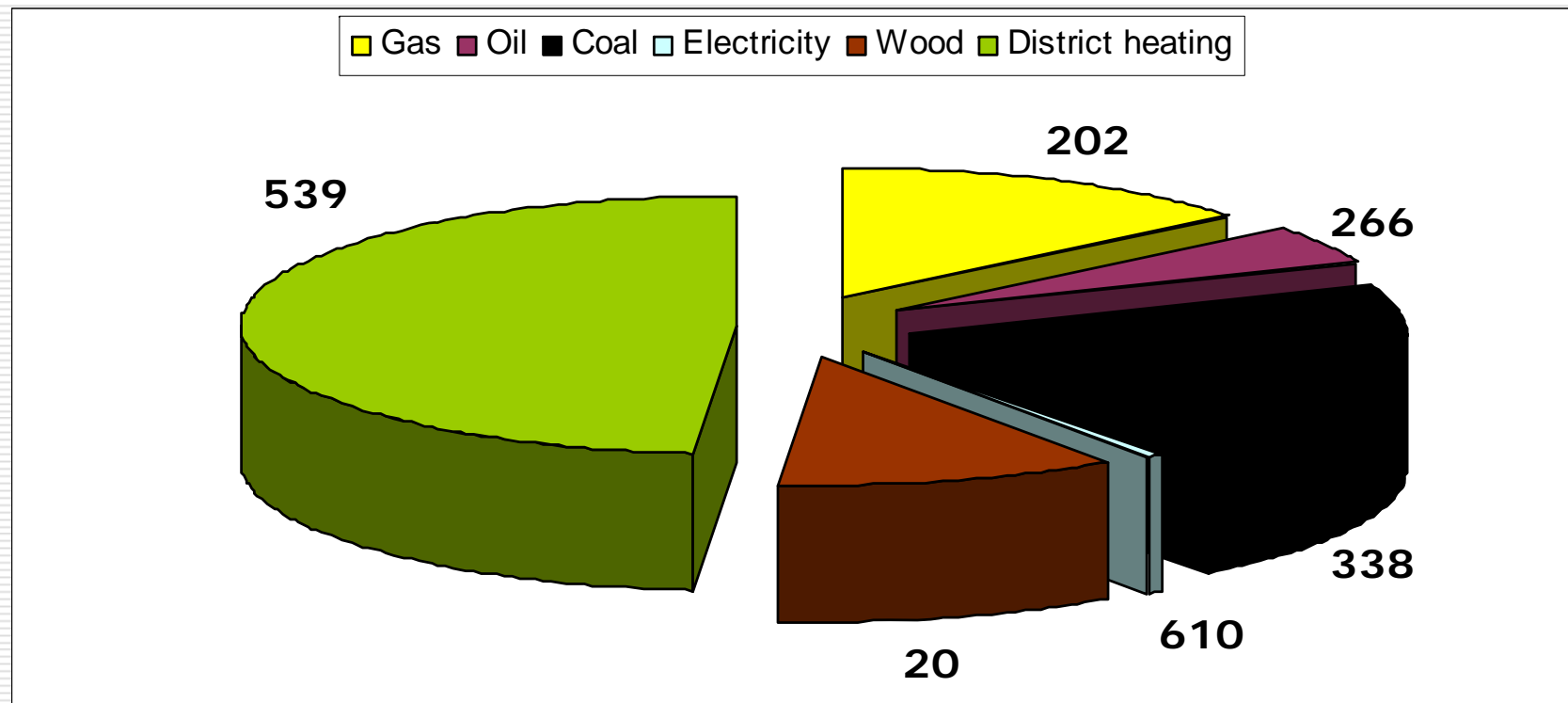
- it shall contribute to shift to sustainable patterns of living

The building sector in Poland is responsible for 69 Mt of Carbon dioxide (25% of total)  
One third is attributed to apartments



# Share of energy sources apartment houses

## Emission factors [kg CO<sub>2</sub>/MWh]



# Effects of the EPBD on CO<sub>2</sub> reduction

---

- 10 Mt of CO<sub>2</sub> could be avoided in Poland if the total building stock >1,000 m<sup>2</sup> would be refurbished.
- The respective costs would be 26 bi €.
- Annual capital costs (1.9 bi €) would surmount saved energy costs (1.2 bi €) by 56%. If only coupled refurbishment is calculated (0.84 bi €) saved energy costs are able to more than balance.

# Refurbishment rate must raise

- Usually only new buildings are constructed according to high standards at an annual rate of 1%. Demolition occurs to be 0.5%. Improvement of DH-systems may reach 20% in 2015. This could be called "Business as usual"
- If EPBD could raise the refurbishment rate according to its standards by 3% annually ( $>1,000 \text{ m}^2$ ) 50% of the total potential (9 Mt of CO<sub>2</sub>) would be avoided by 2015 in the New member states (without Romania and Bulgaria).
- For Poland it would need  $7.8 \text{ Mm}^2$  (117.300 flats), for Latvia  $0.43 \text{ Mm}^2$ , for Czech Rep  $1.7 \text{ Mm}^2$  and for Slovakia  $1.1 \text{ Mm}^2$ .
- 2.7 bi € need to be invested annually to reach these objectives (only 6.2% of the total building investments).

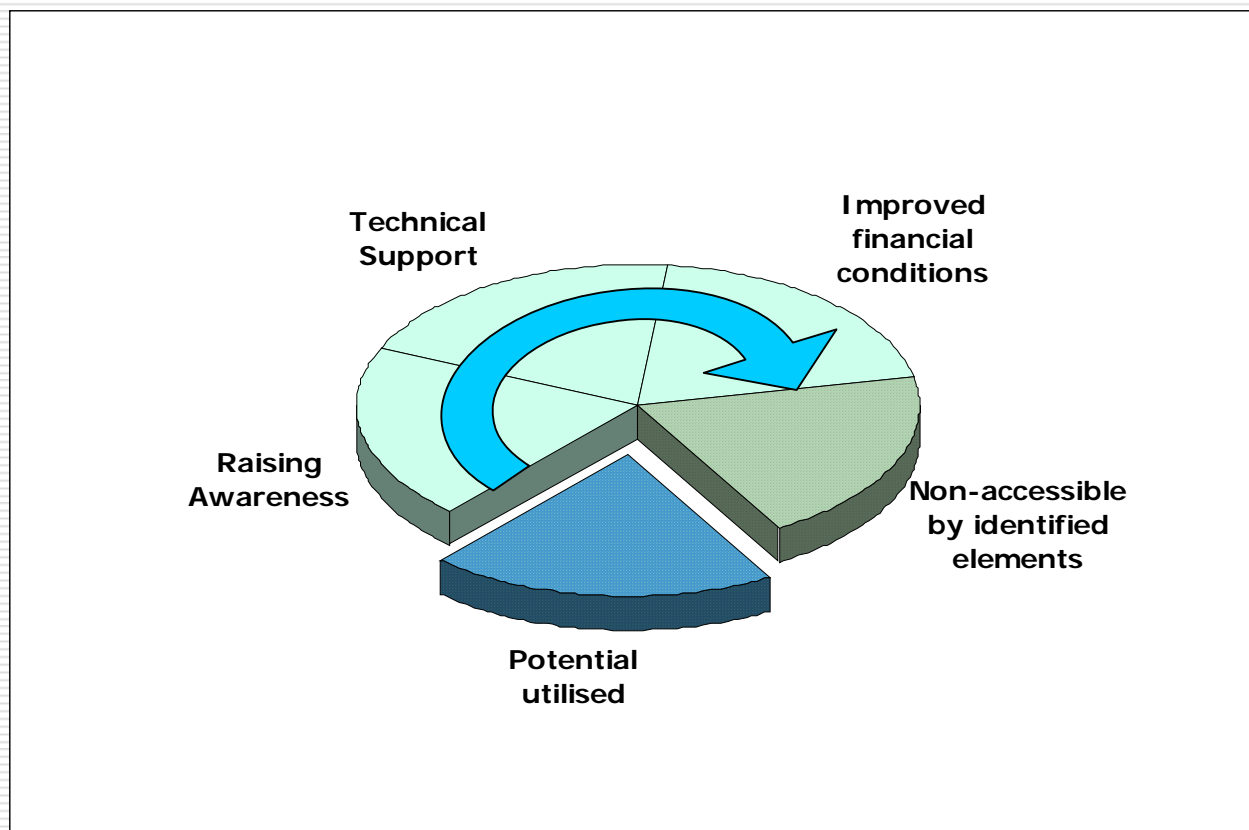
# Spending would pay off

---

- Annual energy related capital costs (=additional spending to necessary refurbishment) would raise from 0.12 bi € to 0.84 bi € in 10 years time.
- They would enable energy cost savings rising from 0.16 bi € to 1.2 bi € (only 1.5%/y raise of energy costs).

# Overall elements to overcome barriers

---

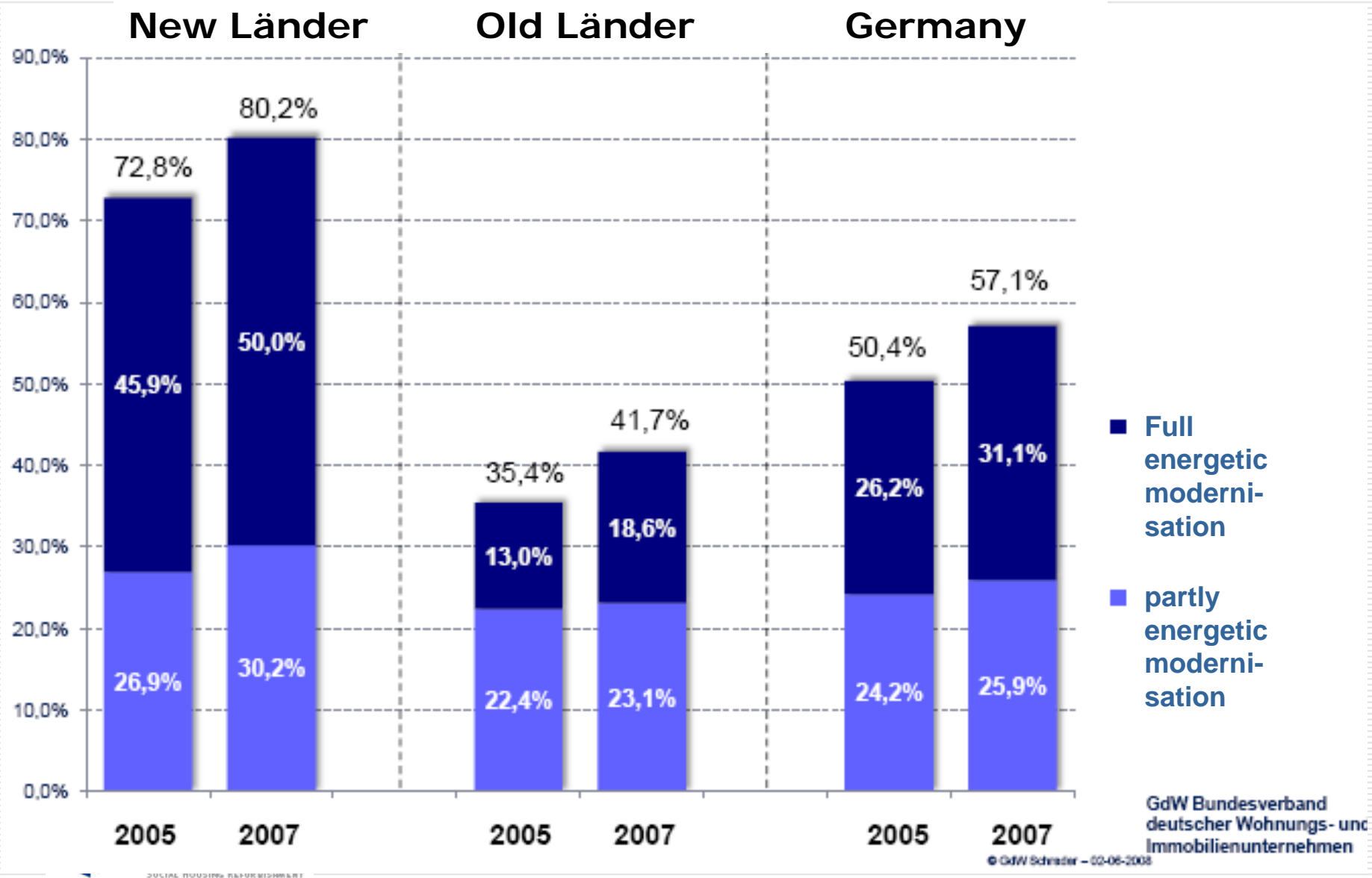


# Basic figures Germany (2004)

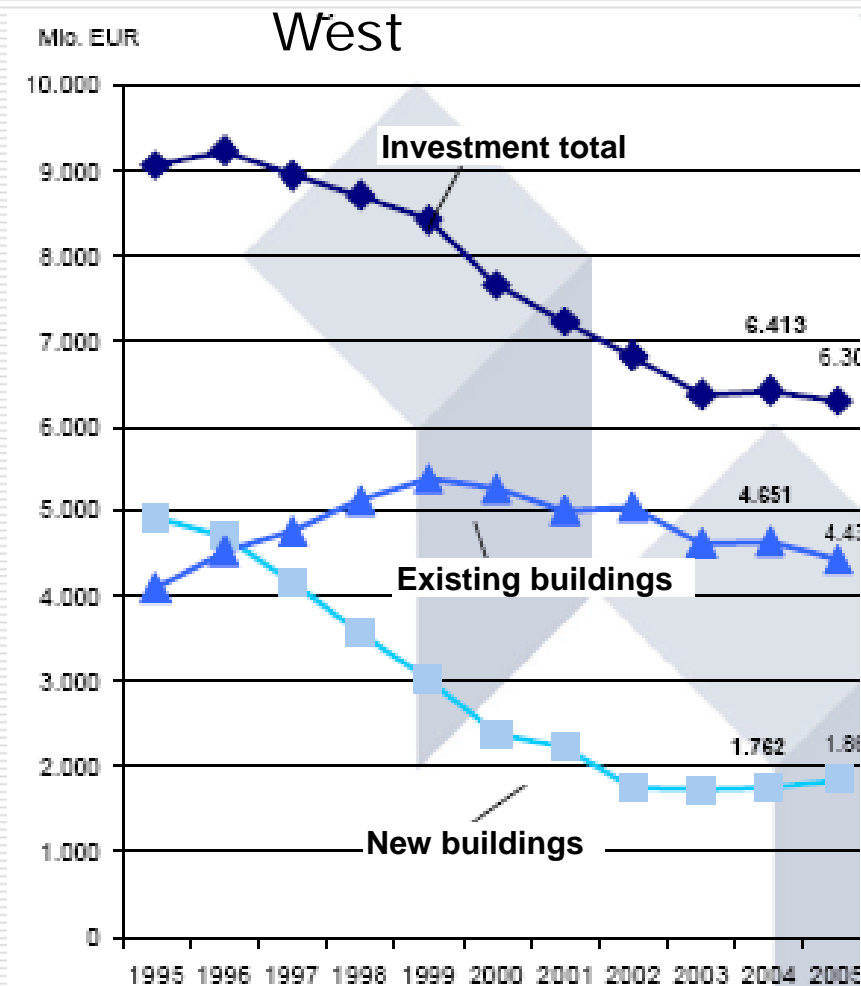
---

- 82.53 M inhabitants
- 39.12 M households
- 24% at risk of poverty before social transfer
- 38.58 M dwellings
- 53.9% in multi family buildings
- 55% (66% former GDR) at rent
- 12% at social conditions
- 2.57 M inhabitants in Brandenburg
- 1.25 M flats in Brandenburg (53,6% MF)
- 9.3% receiving housing (social) subsidies

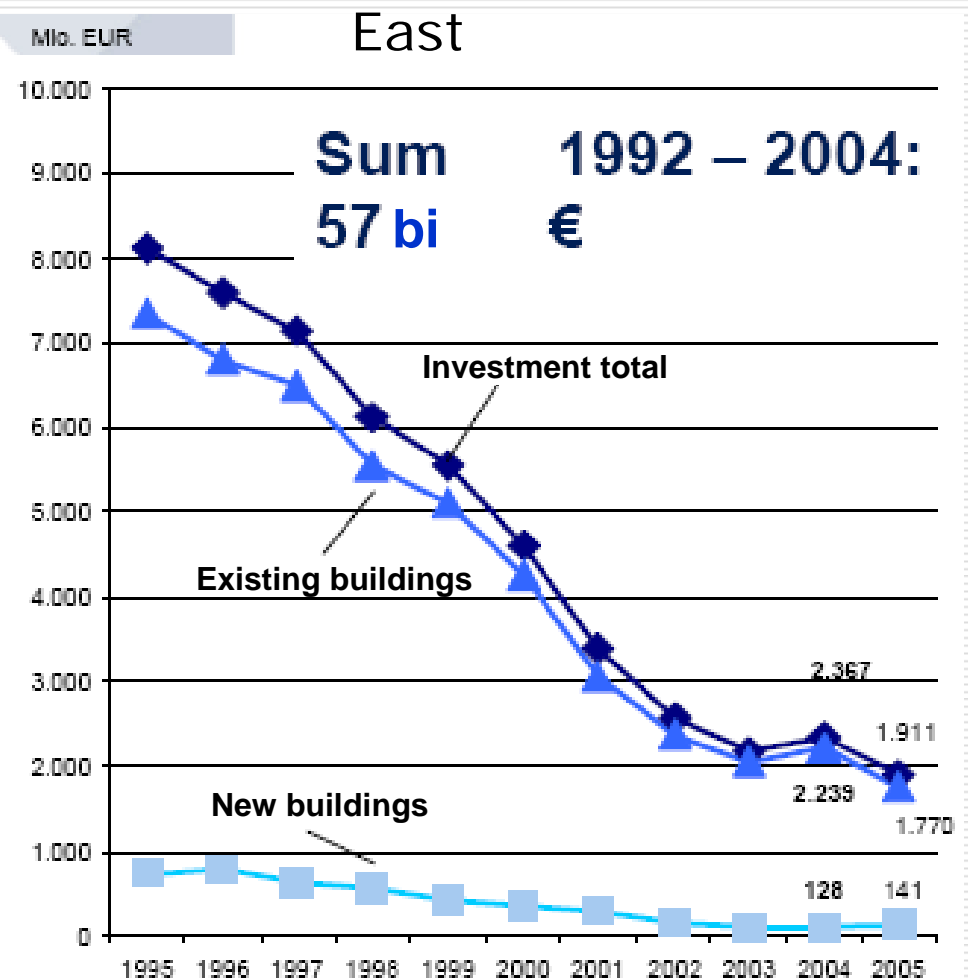
# Energy saving modernization measures 1990 – 2005/2007 members GdW



# Investment in West and East Germany 1995 – 2005 (members of GdW) differs considerably



Quelle: GdW-Jahresstatistik 2005, Jahr 2005 eigene Schätzung

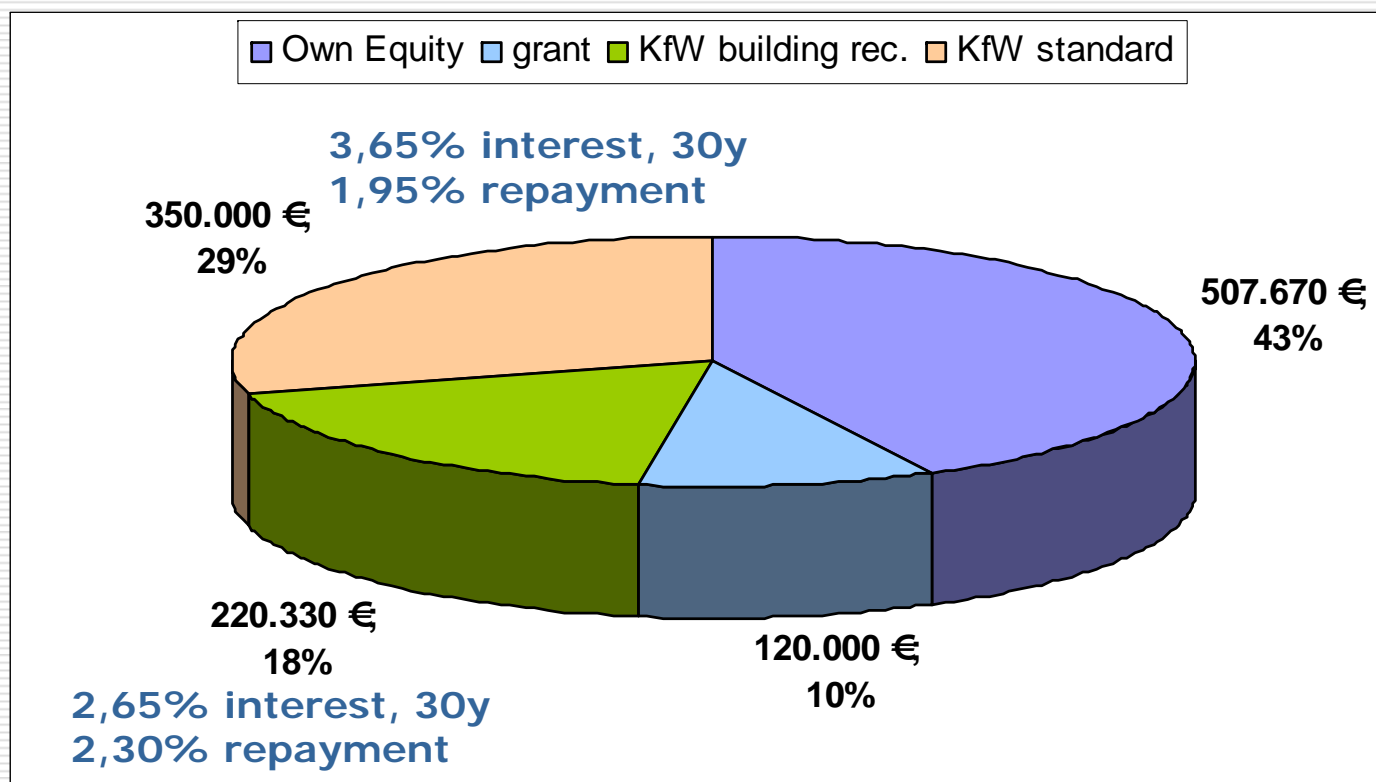


## Barrier free living Str. d. Jugend 31-33

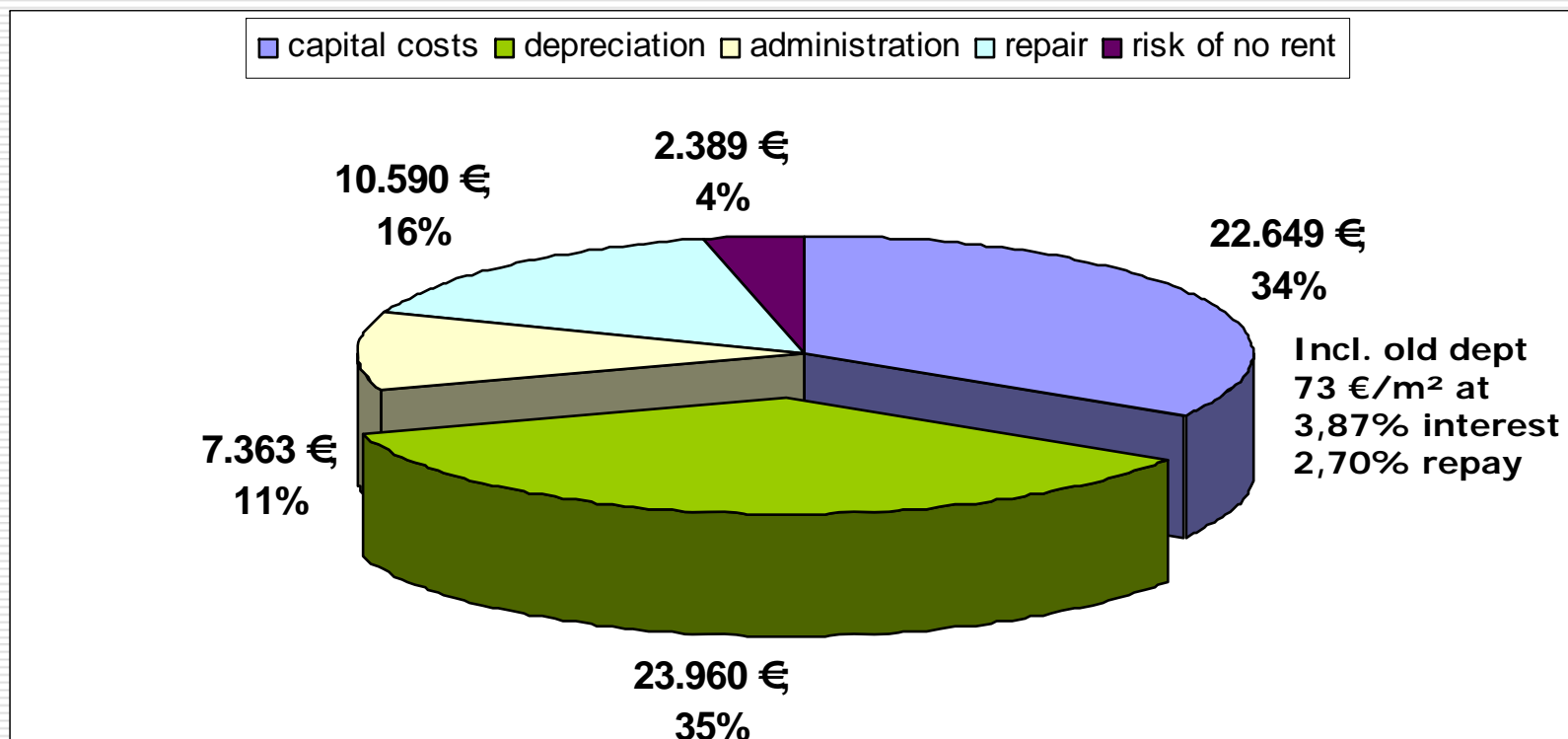
- 4 storey panel building (1960)
- Barrier free
- 4 flats for handicapped
- Changes in layout
- Grand scale entrance
- 1.2 M€ (56% equ)
- 18% energy related
- 135 -> 77 kWh/m<sup>2</sup>
- 4.65 € per sqm (+1 + 1€/m<sup>2</sup>)
- Grant for lift



## 1.198 M€ (839€/m<sup>2</sup>) refurbishment costs

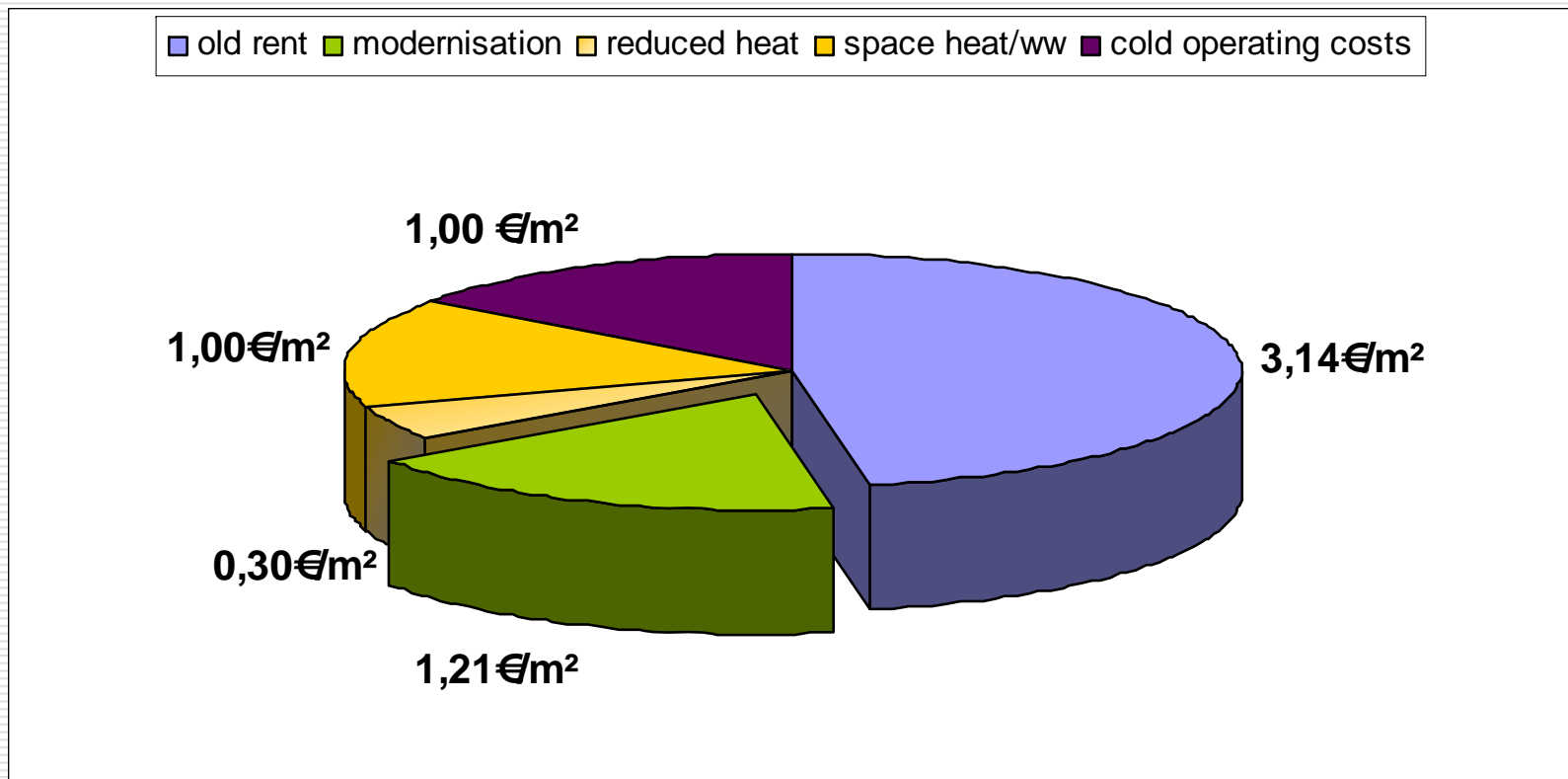


Costs sum up at 3,91 €/m<sup>2</sup> incl. depreciation  
Achievable rent 3,14 €/m<sup>2</sup>+1,51 mod.allocation



Depreciation may finance 60% more than repayment of 14,909 €

# Monthly costs for rented flat

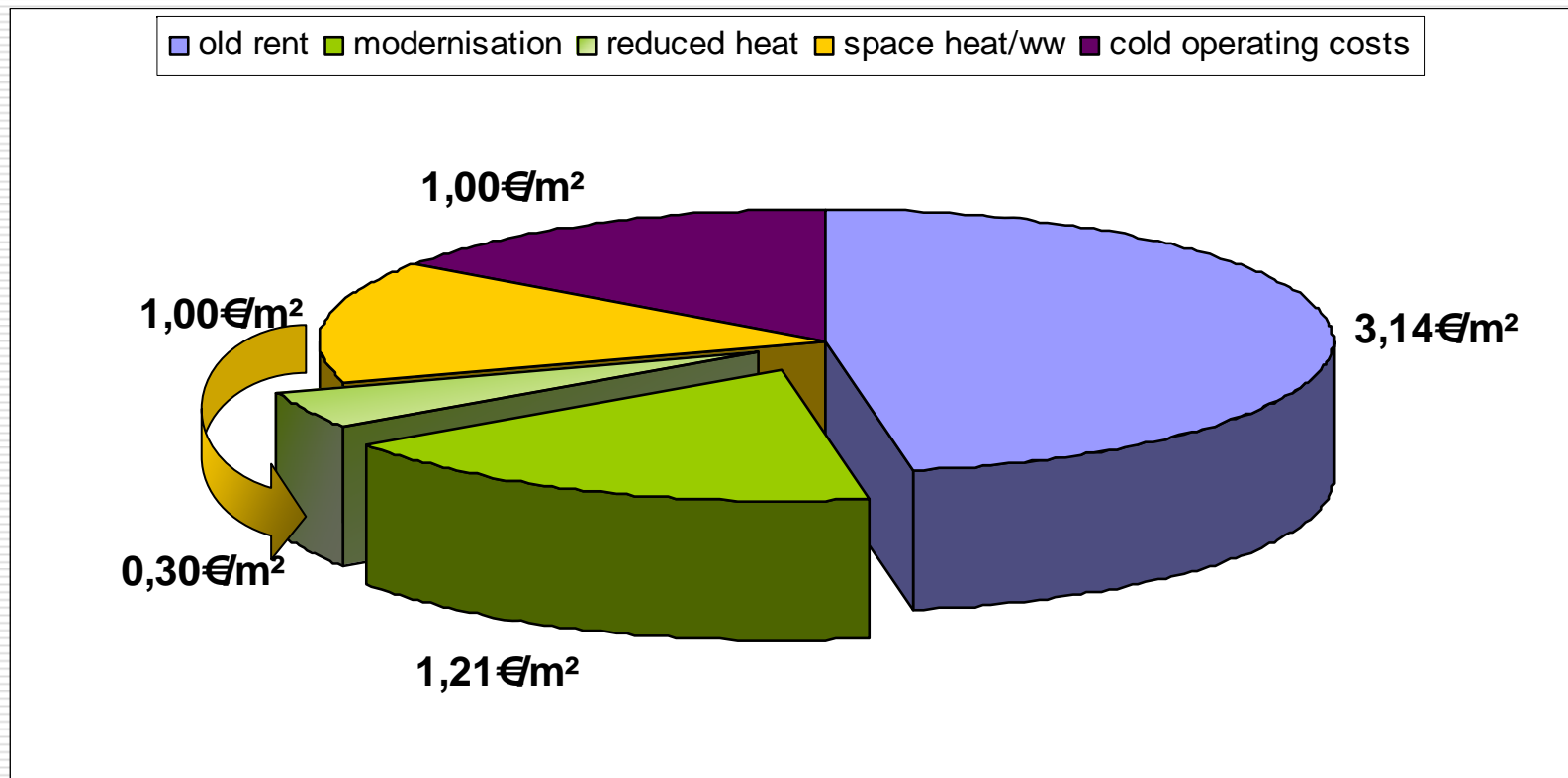


# Programme family of KfW bank

---

- CO<sub>2</sub> building refurbishment,
- modernise flats (ECO-PLUS) and
- ecological building
- added by the energetic parts of the infrastructure programs of KfW
- 220,000 loans till 2007 with 15.9 bi €
- 29 bi € investment were initiated in more than 440,000 flats
- 480,000 jobs in SMEs were secured
- 500 M€ energy costs avoided till end of 2008

# Substituting energy by capital



# Where to get the capital from?

## Influences

- monthly income
- refinancing
- Guarantee
- Political importance
- Long term contract
- Monthly income
- Rate of return

other owners

owner

bank

state

energy supplier

tenant

landlord

# A German Example

## Aspects

- on a home owners market refurbishment projects pay off
- On a rent market investments are not economic
- law on rents must be changed to enable tenants to pay for climate protection
- state must reduce taxes

other owners

owner

bank

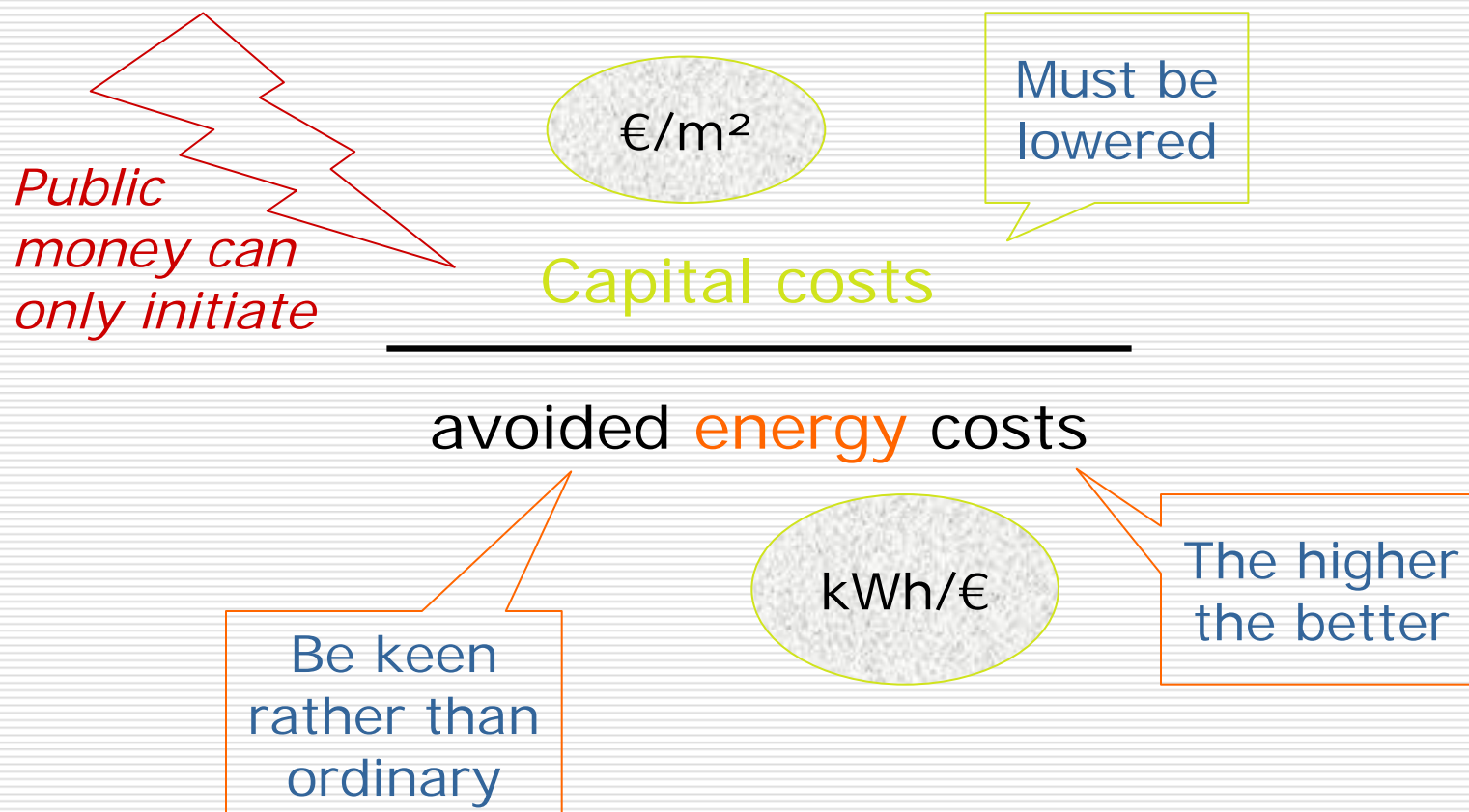
state

energy supplier

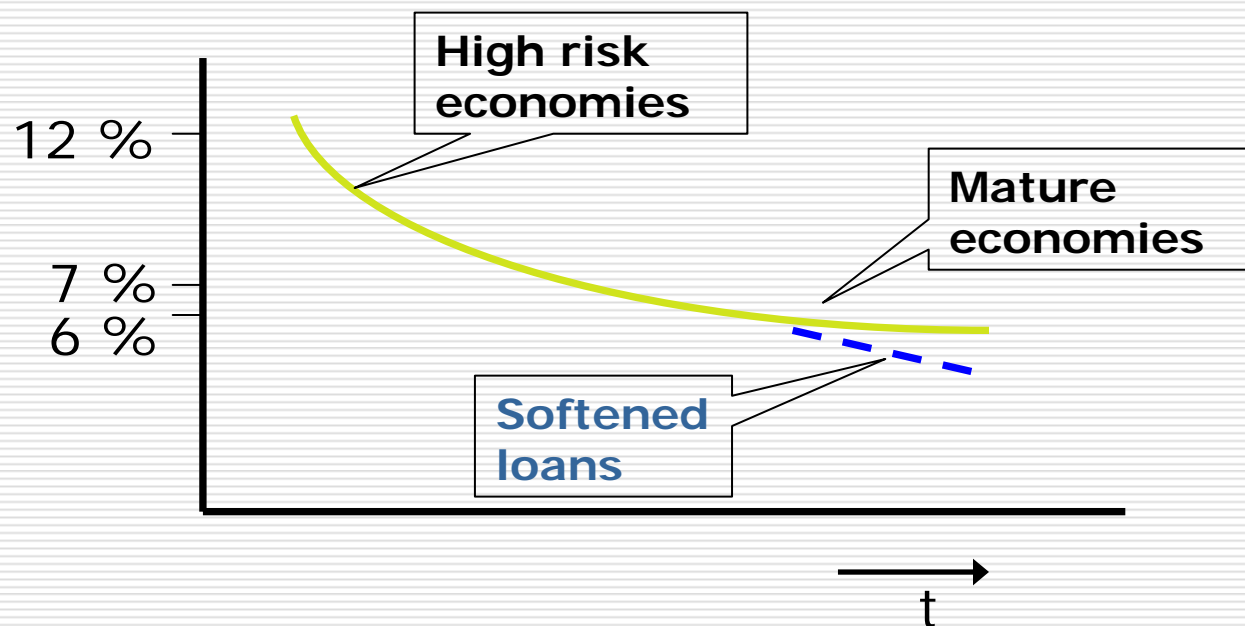
tenant

landlord

# Only one relation matters



# Development of interest rates



# Act on the **capital** side

---

- Competition among banks
- Secured savings reduce risk
- Mortgage/guarantee
- Maturity of financial system
- Competition on refurbishment market
- Reduced added value tax for building material
- Reduced company tax on refurbishment projects
- Rather pay for investment than for energy cost support
- Get the tenant on board through changes in the rent law

# Act on the energy side

---

- Choose the right standards
- No money without audit
- Don't neglect the carbon tax option
- Strengthen the emission certificate market
- Open housing market for emission trade
- Municipal standards for energy efficient facades, windows, roofs

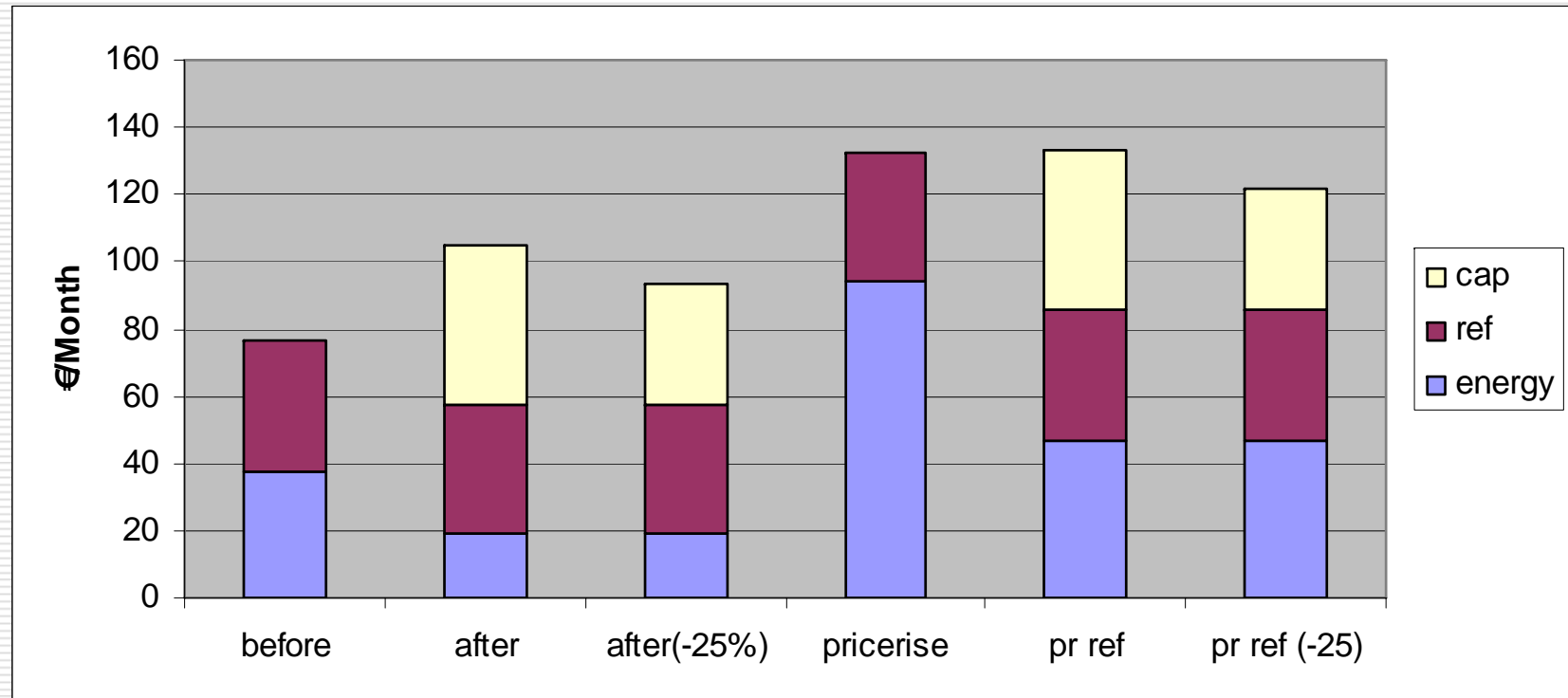
# Differing strength of the lever

Economic basis differs considerably: Energy costs in €/MWh

	BG	CZ	LV	Sk	PI
DH	28	44	32	44	35
Nat G.	34	34	21	29	32
Oil	97	44	36	41	68
Coal	12	13	8	17	25
Wood	10	11	9	9	15
Electr	75	38	62	42	

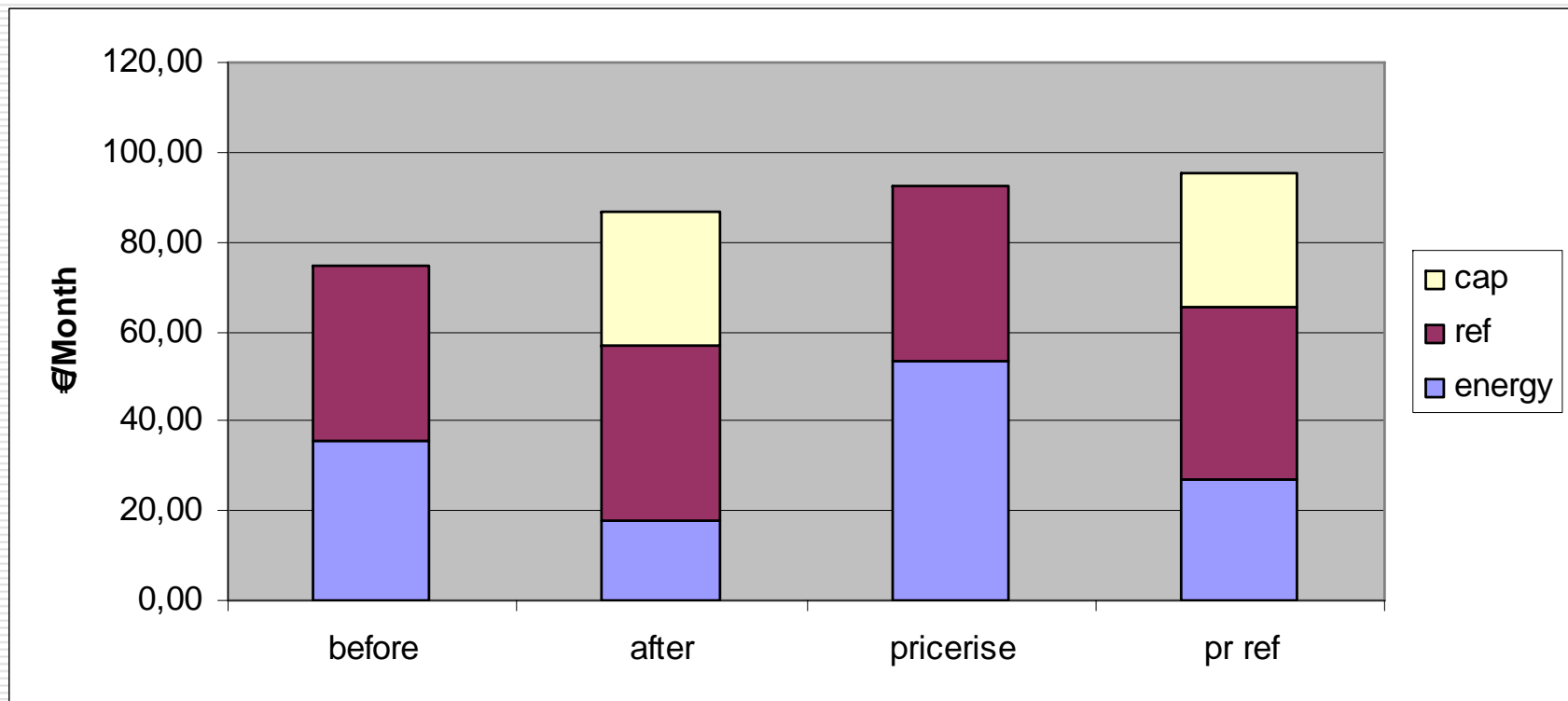
## ... a Polish example

65 m<sup>2</sup> flat with 200 kWh/m<sup>2</sup> at 34.6 €/MWh (37,5€/Mon) reduced to 100 kWh/m<sup>2</sup> by 75€/m<sup>2</sup> (47,5€/Mon, 15y,8%) resulting in savings of 18,7 €/Mon

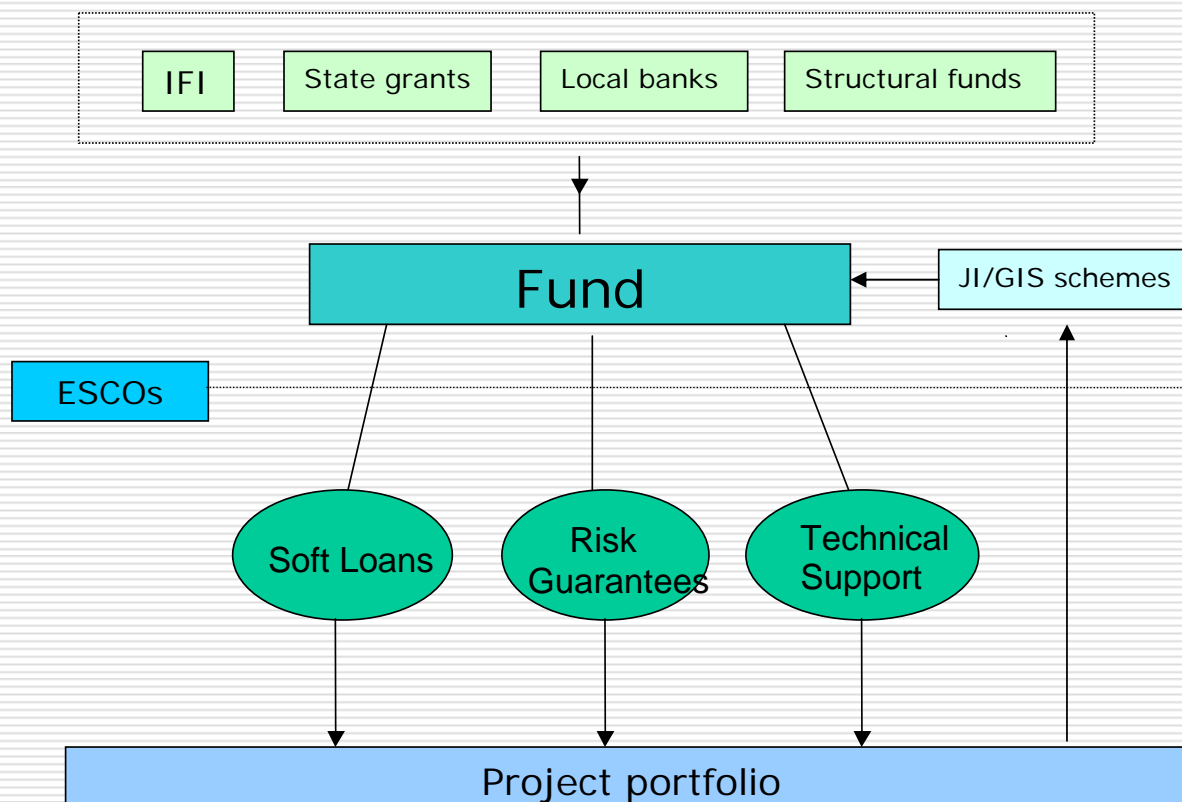


## ... a Latvian example

57 m<sup>2</sup> flat with 150 kWh/m<sup>2</sup> at 50 €/MWh (35,6€/Mon) reduced to 75 kWh/m<sup>2</sup> by 57€/m<sup>2</sup> (29,8€/Mon, 15y,7%) resulting in savings of 17,8 €/Mon



# Mixing the elements



## Four policy lessons

- **Both sides have to intervene**  
public-private partnership offers the best combination of the criteria and offers sustainable impact.
- **Multiple policies are more effective than single measures**  
No single policy instrument can fully resolve the problem
- **A market for energy efficiency is needed**  
weak demand requires few providers
- **Strong political will is required**  
Only private actors offer sufficient creativity and resources, they need political stimulation

**Thank you !**

**At your demand  
Hope it was worthwhile listening**



Prof. Dagnija Blumberga, Ekodoma Riga  
Bronislava Herdova, Energy Centre Bratislava  
Andrzej Rajkiewicz, National Energy Conservation Agency Poland  
Petr Sopoliga, Enviros Prague  
Evelina Stoykova, Sofia Energy Centre  
Nils Daugaard, Energy Consulting Network  
Casper Tigchelaar, Energy Centre of The Netherlands  
Georg Wagener-Lohse, CEBra GmbH Cottbus