



# UNDP-GEF portfolio on building energy efficiency in Europe and CIS

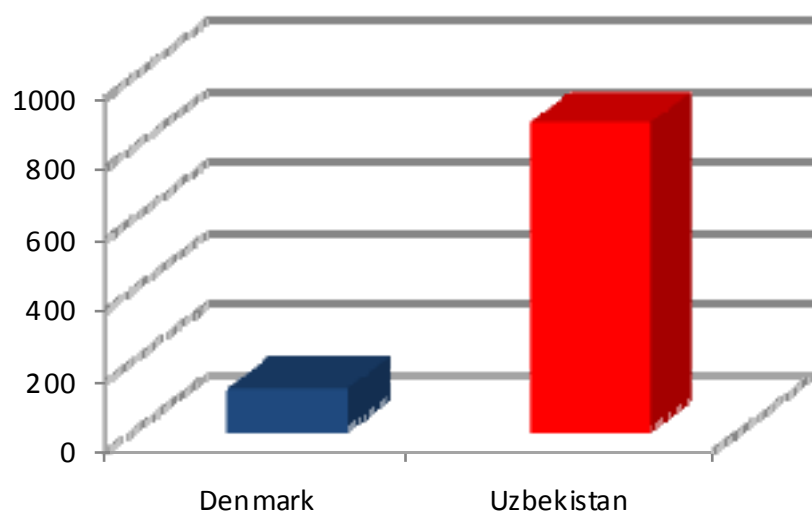
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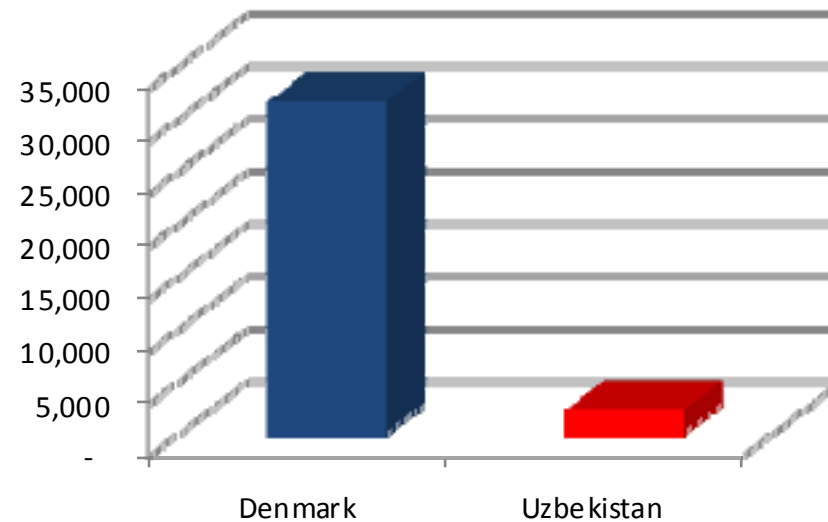
# Regional Differences: Income and Energy Use

**Energy Intensity, toe/US\$ PPP**

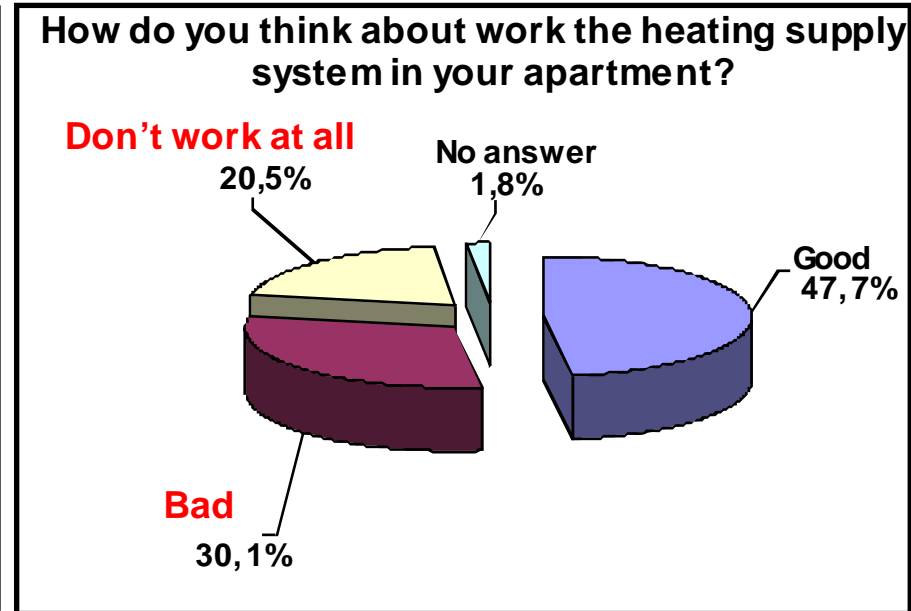
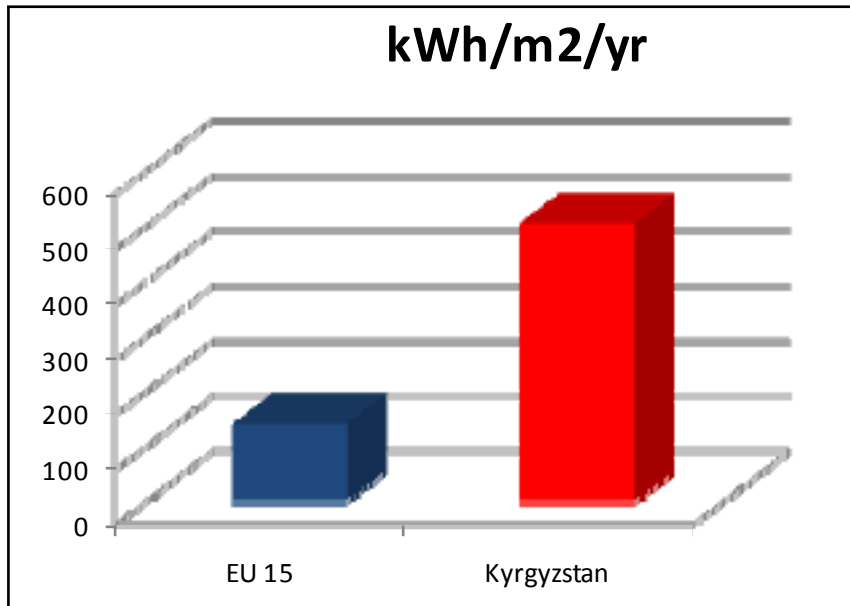


■ Denmark  
■ Uzbekistan

**GDP per capita, US\$ PPP/cap**



# Regional Differences: Energy Use in Buildings



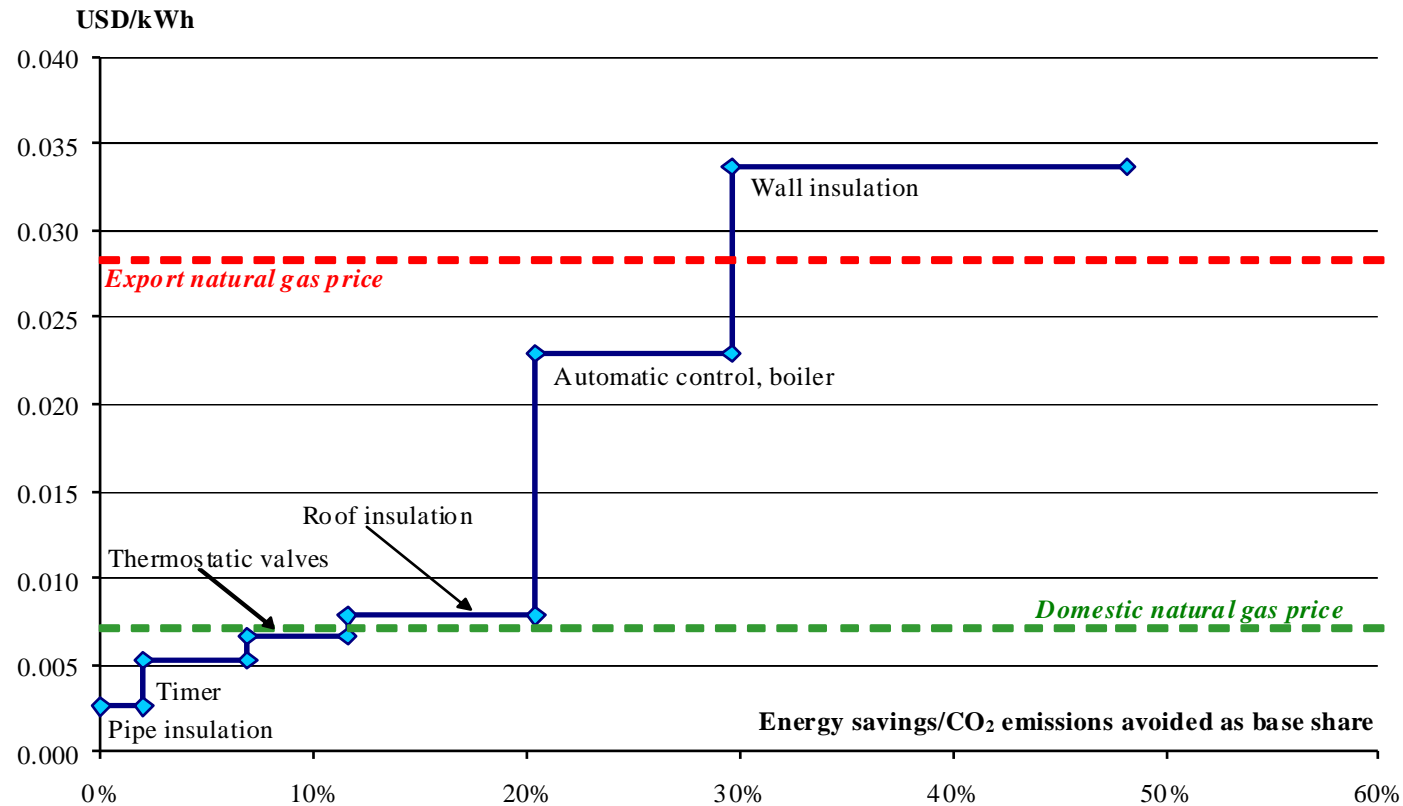
- Existing building stock **2-3 times less energy efficient** than EU 15
- Heat bills account for **7%** in an **average** household income (Fuel poverty threshold in US - 6%, UK - 10%)
- **50 % households** are not satisfied with heat supply system

## Regional Differences: More Barriers

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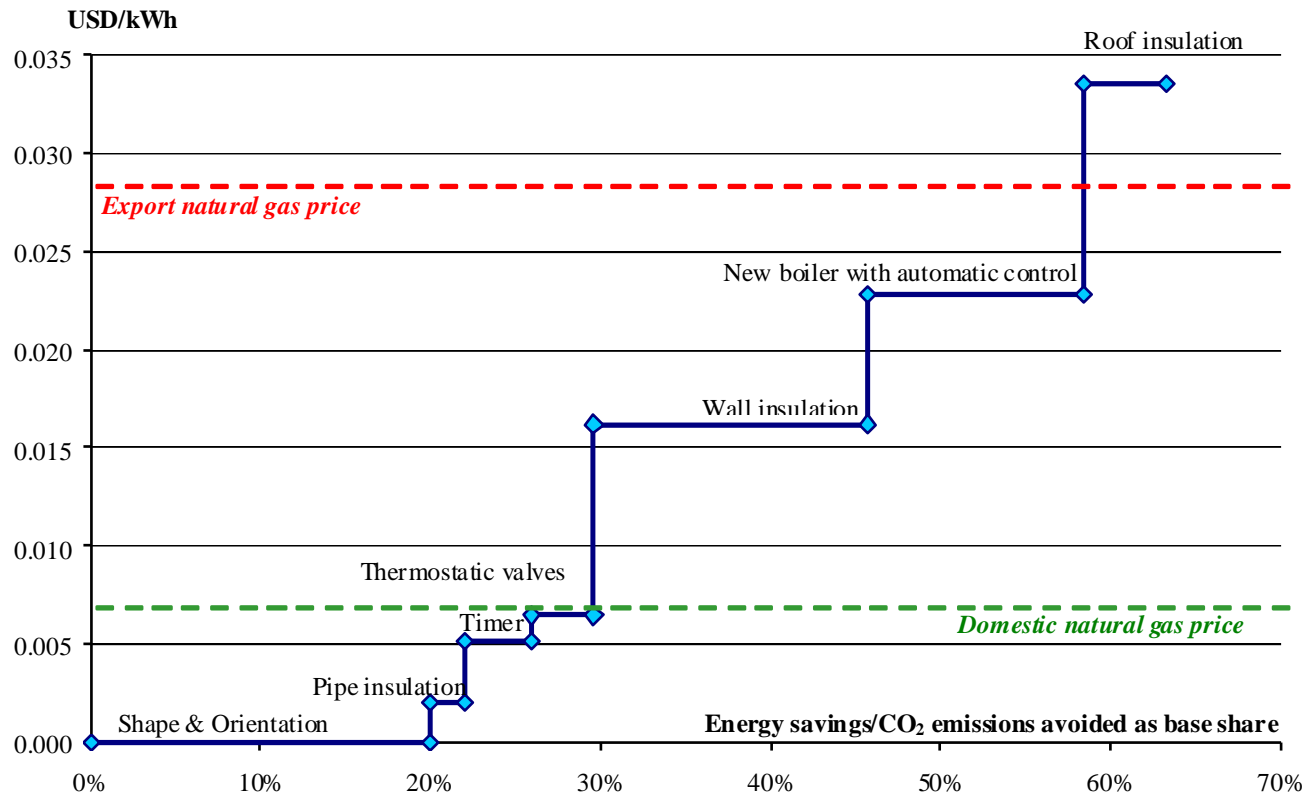
- **Policy:**
  - **Mandatory EE Standards: Russia, Kazakhstan, Ukraine, Kyrgyzstan**
  - **Enforcement ???**
- **Financing:**
  - **State-Funded Construction (Kazakhstan) – max 400 \$/m<sup>2</sup>**
  - **Reconstruction programs ???**
  - **Dedicated EE funds – Belarus (state), KAZ/UKR (EBRD) – do not cover housing sector**
- **Housing Associations:**
  - **Collective property management ???**
- **Reliable or any statistics on energy use in buildings ???**
- **Institutional gap – is someone in charge ???**

## Cost-effectiveness: EE measures in existing school building



- **10% saving is cost-effective at domestic gas prices**
- **30% saving is cost-effective at export gas prices**
- **50% saving is cost-effective at EU gas prices**

## Cost-effectiveness: EE measures in new school building



- 30% saving is cost-effective at domestic gas prices
- 60% saving is cost-effective at export gas prices

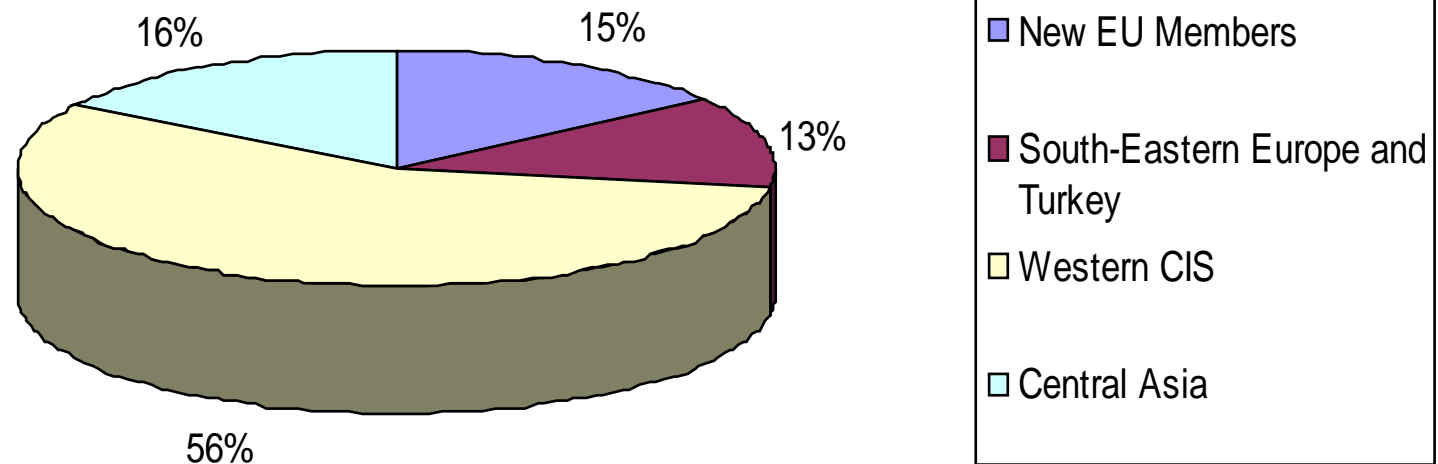
## UNDP's priority: Energy Efficiency in Buildings, Heat Supply and Appliances (including Lighting)

### ✓ Funding level (1999 – 2009):

✓ GEF: 82 mln US\$

✓ Other sources (public/private): 290 mln US\$

### ✓ Geographic coverage:



# Project example: District Heating (DH) in Armenia

**New legal and regulatory framework** for rehabilitation of DH systems

**USD 10 mln** direct foreign (private) investments leveraged into new DH system (Avan district of Yerevan, 213 buildings, 30.000 residents);

System features **combined heat and power facility**, reconstructed network and **apartment level metered** and regulated system

**400 new contracts** signed between customers and heat supply companies in the demo/pilot areas based on apartment level heat meters.



Multi-apartment panel building with exhaust chimney from gas heater installed in one apartment (not financed by the project!)



Heat meter installed at the entrance to an apartment in Avan district of Yerevan

# Project example: **Municipal EE in Croatia**



Energy Efficiency Information Center

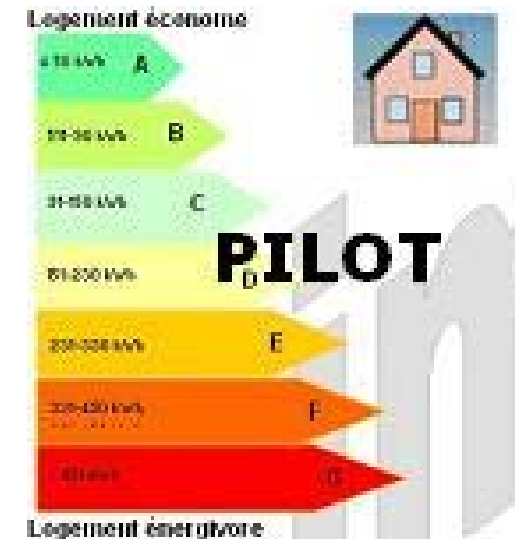
Energy Charter



- Policy-level support: **National EE Master-plan** with the Programme of Implementation 2008-2016
- **Energy Charter**: signed by ALL towns and counties in the Republic of Croatia
- **28 mln US\$** of public financing leveraged for energy efficiency measures in 30% of local government buildings and 50% of central government buildings.
- **63% of households** switched to the use of CFL bulbs
- Project budget: 13 M US\$ (on-going) with UNDP/GEF contribution 4.6 M\$

## New EE Building Portfolio: ARM, KAZ, KYR, UZB, TKM, TUR

- Six projects worth **GEF 15.7 mln US\$** focusing on:
  - New **Energy Efficient Building Codes** to provide for up to 30% more energy efficient buildings
  - Enforcement System: **Energy Passports**
  - Education and Awareness Raising: new university curricula and vocational training
  - Demonstration: **50-100,000 m<sup>2</sup>** to be built following integrated building design approach
    - **10 schools and hospitals** in Uzbekistan and Kyrgyzstan
    - **10 multi-rise residential buildings** in Kazakhstan, Turkmenistan and Armenia
  - Co-financing: **50 mln US\$** from public and private sector construction programmes



## Final Remarks

- Major regional differences need to be taken into account
- Insufficient mechanisms for knowledge transfer within ECE region
- Financing is an issue, but so are many other barriers which have to be comprehensively addressed
- Important: political leadership and mandate for EE

Thank you!

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