Workshop 4: Case studies on energy efficiency financing and promotion of advanced energy efficiency technologies

Kyrgyzstan, 12 September 2012
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UNDP
Energy efficiency and conservation: $80 m (GEF) + $340m in co-financing

Renewable energy (on-grid, off-grid, thermal): $30 m (GEF) + $133m in co-financing

Sustainable urban and transport systems: $14 m (GEF) + $96m co-fin
UNDP’s approach

• Low Emission Climate Resilient Development
  • Basis and anchor of the strategy
  • Starting point for improving energy for development with focus on the poor

• Achieving market transformation to catalyze finance
  • Creating enabling policy & regulatory frameworks
  • Using barrier removal approach

• Innovative Public Private Partnerships
  • to reduce investment risks, optimize the use of both sources of finance and pool public and private sector talents and strategic capabilities
  • Rapid scale up of energy access
National Energy Efficiency Program - Croatia

- Potential for Savings: 20% = 4% of GDP = 2.5b USD

- 6 years, 4m GEF grant, now Government run and funded programme

- Energy Charter: signed by ALL towns and counties in Croatia

- $40m of public financing leveraged for EE measures in 30% of local gov buildings and 50% of central gov buildings

- Programme has reduced public spending by an estimated $18m/year

-10,000 Croatian civil servants have benefited from specialized energy-efficiency training

Source: UNDP-GEF Project in Croatia
Energy Efficiency Retrofits - Bulgaria

- Residential building sector 23% of nat. energy consumption; High electricity and heating bills due to energy inefficient construction

- 28 voluntary associations of condominium owners for renovation and future maintenance created;

- 50 multifamily buildings fully renovated

- Annual energy saving: 50-75% due to EE retrofits

- Project awarded EU Sustainable Energy Award: http://obnovendom.com

Source: UNDP/GEF Project Booklet, Bulgaria
Energy Efficiency in Heat & Hot Water Supply - Kazakhstan

- 200 associations of apartment owners trained in EE building management

- Private Energy Saving Company (ESCOs) supported in city of Karaganda

- Law on Energy Saving, amendments to the Housing Law (to partially compensate the costs of heat supply upgrade projects for low-income families) adopted

- Leveraged co-financing: National Program on housing and communal sector renovation and reform: 2.4 b $ till 2020 (incl building thermal upgrade)
Energy Efficient District Heating - Armenia

- New legal and regulatory framework for rehabilitation of DH systems, including feed-in tariff for co-generation-based power

- USD 10 m 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

- 640 new contracts signed between customers and heat supply companies in the pilot areas based on apartment level heat meters.

Source: UNDP-GEF Project Report, photos by Grant Ballard-Tremeer
Energy Efficiency in Public Buildings - Kyrgyzstan

New Building Code "Thermal Engineering (Thermal Performance of Buildings)“ entered into force in January 2010:

- Requires on average 40-50% less thermal energy consumption in buildings as compared to current practice, i.e. 60-90 kWh/m²/year compared to 120-150 kWh/m²/year

School in Osh (pictured) is being constructed following integrated building design approach:

- cost of construction up by only 3.6% (cost of pilot school ≈ 550 US$/m²)
- energy consumption down by 45%
Energy Efficiency in Buildings

**Legislation, regulation and institutions**
Laws: on Energy Saving, Housing Relations, Public Procurement
New Energy Efficient Building Codes to provide for up to 50% more energy efficient buildings (already adopted in Kazakhstan, Uzbekistan and Kyrgyzstan) + Enforcement System: Energy Passports

**Technology demonstration**
50-100,000 m² of public and residential space is being built/retrofitted following integrated building design approach:
- 10 schools and hospitals in Uzb & Kyr
- 10 residential buildings in Kaz, Tkm and Arm

**Financing**
National, regional and municipal construction and energy saving programmes: 50 mln US$
Residents: building-level revolving funds/accounts
Private Sector: Energy Service Companies (ESCOs) - KAZ

**Capacity building**
Association of apartment owners and tenants: low-cost EE measures
Municipal energy managers: energy audits & master plans
Architects, engineers, students: new university curricula and vocational trainings
Lessons Learnt

Huge, yet untapped potential for energy efficiency and renewable energy across the region

Building sector boasts the largest and most cost-effective potential for energy saving yet faces a complex set of barriers

Financing barrier can be overcome via partnership with State-funded programs, Banks and Private sector

Many non-financial barriers have to be comprehensively addressed: awareness, capacities, policies and regulations

Extremely important: political leadership and commitment for energy efficiency and renewable energy at the highest level

This is not just an issue of “technology fix” it involves a complex process of behaviour change and incentive systems
SG Initiative “Sustainable Energy for All (SE4ALL)”

Objectives
• Universal access to modern energy
• Double the rate of energy efficiency improvements
• Double the share of renewables in energy mix

Approach
• Developing countries: commitments to SE4ALL objectives
• Developed countries: financing based on agreed targets and results
• Private sector: technologies and investment

SE4ALL in Europe and CIS
• Tajikistan, Kyrgyzstan, Montenegro, Armenia and Moldova engaged with the Initiative
• Other interested partners: UNDP, World Bank, EBRD, Private Sector
• Pilot countries to adopt commitments:
  • meaningful targets for energy access, energy efficiency and renewable energy
  • commitment to adopt clear, predictable and socially-oriented policies for renewables and energy efficiency