Experience & Lessons Learned From USAID Energy Efficiency Projects in Eastern Europe

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USAID Infrastructure Workshop
December 16, 2010
ORGANIZATION OF PRESENTATION

- E&E Energy Efficiency Priorities and Approach
- Creating an Enabling Framework in the Region
- Summary of Current USAID/E&E Regional Program
- Success Story
- Critical Success Factors
- Future Challenges
USAID/E&E CLEAN ENERGY ACTIVITIES

• REGIONAL
  – Strategic Planning for Renewables and Energy Efficiency
  – Regional Assessment of Renewable Energy
  – Energy Efficiency in Residential and Public Buildings
  – Regional Transmission Planning: SE Europe, Black Sea
  – Regional Energy Market and Regulatory Development
  – Low Emissions Strategies and Clean Energy Development

• BILATERAL
  – Macedonia
  – Bosnia & Herzegovina
  – Ukraine
  – Georgia
  – Armenia
  – Moldova*
USAID INTEREST IN ENERGY EFFICIENCY IN EUROPE AND EURASIA

• Energy costs are increasing, leaving less money for buying other items.
  – Energy costs represent significant share (>10%) of a family’s budget.
  – Energy cost impact is greatest among the lowest income groups, which pay a percentage two-to three times greater than average households.
  – Energy represents a substantial percentage of municipal expenses, limiting the ability to provide high quality public services.
• Energy costs can be reduced 20-40% through cost-effective projects.
• Important indirect benefits:
  – Improving comfort
  – Improving the quality of services
    • schools and hospitals can buy more text books and medicine;
    • school attendance increases;
    • hospitals have lower re-infection rates;
    • streets are safer.
• Environmental/climate benefits including lowering emissions of greenhouse gases and other harmful pollutants: lowest cost solutions.
• Energy security/reduce imports: lowest cost solutions.
# RESULTS: USAID-FUNDED ENERGY EFFICIENCY PROJECTS

<table>
<thead>
<tr>
<th>Type (#)</th>
<th>Countries</th>
<th>Cost Range (000’s)</th>
<th>Average Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals (16)</td>
<td>Bulgaria, Serbia, Lith., Czech</td>
<td>$40 - 380</td>
<td>2.9 yrs</td>
</tr>
<tr>
<td>Schools (18)</td>
<td>Serbia, Macedonia, Bulgaria Hungary, Poland, Czech, Ukraine</td>
<td>$1.8 - $127</td>
<td>3.1</td>
</tr>
<tr>
<td>Housing (5) (apartment buildings)</td>
<td>Albania, Poland, Slovakia, Ukraine</td>
<td>$3.6 - $163</td>
<td>3.5</td>
</tr>
<tr>
<td>Street lighting (20)</td>
<td>Serbia, Poland, Bulgaria</td>
<td>$5 - $450</td>
<td>3.9</td>
</tr>
<tr>
<td>Municipal buildings (6)</td>
<td>Bulgaria, Serbia</td>
<td>$83 - $362</td>
<td>3.1</td>
</tr>
<tr>
<td>District heat distribution (2)</td>
<td>Serbia, Bulgaria</td>
<td>$44- $393</td>
<td>2.8</td>
</tr>
<tr>
<td>Senior center (2)</td>
<td>Serbia, Macedonia</td>
<td>$5 - 173</td>
<td>2.0</td>
</tr>
</tbody>
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USAID/E&E REGIONAL ENERGY EFFICIENCY EFFICIENCY PRIORITIES

• Areas of Focus
  – Public buildings
  – Residential/low income/affordability

• Approach
  – Stimulate and assist Governments development of effective energy policies and plans
  – Overcome barriers and improve investment climate to stimulate financing (including non-governmental)
  – Combined focus: regional templates; bilateral opportunities
EE IN RESIDENTIAL & PUBLIC BUILDINGS REGIONAL PROGRAM COMPONENTS

• Stocktaking of Laws, Policies, Institutions
• National and Municipal Planning/Program Design
• Legal and Regulatory Support
• Project Preparation
• Awareness
• Financing and Business Development
ENERGY EFFICIENCY POLICY FRAMEWORK

- Establish Responsibilities and Inputs
  - Government Ministry or Agency
  - Roundtable/Coordination Process with NGO Participation
- Funding Mechanisms
  - IFIs, Private Lenders/Guarantees, Funds with Independent Management
- National Energy Efficiency Action Plans (NEEAPs)
  - Sector-specific targets and implementation programs
  - Monitoring/Reporting/Verification
- Public Awareness
- Government Leadership by Example
  - Public buildings, equipment procurement
ENERGY EFFICIENCY LEGAL FRAMEWORK

- Energy Efficiency Law, Secondary Laws
  - Codes, Standards, Labeling (including enforcement)
  - Energy Auditing Procedures and Certification
  - Heat Metering and Consumption-Based Billing
  - Municipal Energy Planning and Authority to Borrow
  - ESCOs and Energy Performance Contracting
  - Private Sector Participation in Municipal Utilities
  - Homeowner Associations, including Ability to Contract Utility Services and Implement EE Projects
  - Social Safety Mechanisms for Vulnerable Households
  - Incentive Mechanisms
  - EE Fund Operating Procedures and Eligibility Criteria
ACTIVITY 1: NATIONAL AND MUNICIPAL PLANNING/PROGRAM DESIGN

• Assist Ministries in Developing National Energy Efficiency Action Plans and Programs for Buildings
  – Build capacity in Energy Community Ministries
  – Provide best practice examples, templates, guidelines:
    • NEEAP building sector preparation and monitoring/evaluation
    • National building sector EE strategies and programs
    • Low-income EE programs
    • Financial mechanisms and private sector participation
  – Selected country activities:
    • Municipal EE planning and networks
  – Implemented by IRG/ASE and EnEffect workshops and advising Ministries and local NGOs.
ACTIVITY 2: LEGAL & REGULATORY SUPPORT

• Develop Enabling Framework for Investment.
• Focus on Selected Countries, to Provide Regional Models.
• Develop Templates for Key Secondary Legislation
  – Energy audit procedures, guidelines, certification
  – Building codes/standards/labeling
  – Homeowner/Condominium Association management
  – Guidelines for Funds/mechanisms
  – EE equipment financial incentives
  – Private sector participation and ESCO performance contracting
  – Municipal energy planning
ACTIVITY 3: PROJECT PREPARATION

• Municipal and residential project in selected countries
• Technical and financial analyses.
  – Prefeasibility studies.
  – Preparation of business plans; presentation to lenders.
• Projects must have potential for high replicability to help meet goals of national programs.
• Performed by EnEffect working with local NGOs.
ACTIVITY 4: AWARENESS

- Raise EE awareness and knowledge levels in Government and civil society.
- Focus on selected countries, to provide regional models.
- Build on earlier ASE Serbia EE public info campaign.
- Include media, Green School curricula, municipal energy planning guides.
ACTIVITY 5: FINANCING AND BUSINESS DEVELOPMENT

• Develop Tools to Promote EE Business Opportunities
  – Operational guide to sustainable financing schemes
  – Green Directory of vendors, service providers, financing mechanisms
  – Case studies of successful financial schemes

• Develop Regional EE Business Network
SUCCESS STORY: DEVELOPMENT CREDIT AUTHORITY

- USAID partial loan guarantee (<= 50%) for commercial lenders
- Loans issued by lenders following their approval process
- Supports non-sovereign lending (private sector and municipal)
- Addresses insufficient donor funds by leveraging limited development assistance with private capital
- Overcomes lender reluctance by reducing risk, increasing their willingness to extend loans
- Addresses barriers to borrowers: reduced collateral requirements, increases size of loans
- Well-suited for energy efficiency and renewable energy: short paybacks enable borrowers to repay
- Helps establish creditworthiness among newly eligible borrowers, e.g., Macedonia municipalities.
DCA PROJECT IDENTIFICATION AND PREPARATION

• USAID or other donor-funded technical assistance identifies projects and prepares technical and financial analyses

• Important to get understanding, trust from borrower and lender

• Requires additional development assistance funding
SUCCESS STORY: BULGARIA DCA

• Partner Bank: UBB
• Partial Loan Guarantee
  ➢ Initially 50%, subsequently lowered to 30%
  ➢ Leveraging started at 12:1, improved to 20:1, later 40:1
  ➢ Reduced risk to lenders; reduced collateral requirements; increased size of loans; extended terms of loans
BULGARIA DCA RESULTS

• Initial $10 million Lending Facility
  ➢ 33 projects financed
    • 22 municipal, 11 industrial
  ➢ Annual savings: 400 GWh electricity; 1.419 TJ fuel and thermal; and 530,000 tons CO2
  ➢ 100% repayment rate (vs. pre-DCA default rate of 4.5% among total loan portfolio)
  ➢ Maximum terms: 5 years municipal, 10 years industrial (vs. 1-3 years non-DCA)
  ➢ TA <10% of loan amounts
BULGARIA DCA ACCOMPLISHMENTS

- For years, DCA was the only lending source for energy efficiency of any sort.
- DCA was only source of municipal loans.
  - Demonstrated right and ability to borrow
  - Established right to borrow beyond electoral term
- DCA opened the market for small loans
  - Average loan: $250,000
  - 39% of loans <$100,000
  - Only 12% of loans >$500,000; 6% >$1 million
- Paved the way for BEEF (WB/GEF), EBRD, other IFIs
OTHER COUNTRIES WITH DCA FACILITIES

- **Macedonia** — $10 million Lending Facility
  - UniBank, NLB Leasing
  - 50% guarantee
  - Municipal and residential projects; EE and RE
  - ESCOs eligible as borrowers

- **Bosnia & Herzegovina** — $10 million Lending Facility
  - Raiffeisen
  - Guarantee may be <50% at Raiffeisen discretion
  - Municipal and residential projects; EE and RE
  - ESCOs eligible as borrowers
CRITICAL SUCCESS FACTORS FOR EE LENDING

• Lending Environment
  – Tariff and bill-paying discipline; consumption-based billing; cost-reflective energy tariffs
  – DCA fits niche lending environment

• Lender Commitment, Motivation

• Legal, Creditworthy Borrowers
  – Concerns with municipalities, Home Owner Associations

• Good Project Preparation Meeting Lender’s Needs

• Capacity Training Among Lenders

• Awareness Raising Among Eligible Borrowers
SUSTAINABLE PROJECT PREPARATION

- Phase I: Donor-funded TA (<10% of loan amount)
- Phase II: Include Costs in Loan Repayment
  - Initial TA paid as part of borrower’s share
- Phase III: ESCO Included as Part of Comprehensive Turn-key Package
FUTURE CHALLENGES FOR EE LENDING

• Lending to ESCOs
• Residential Energy Efficiency Lending
  – Microfinancing
  – Revolving funds
• Concerns:
  – Creditworthiness, lack of borrowing history, Homeowner Associations
  – Better terms from IFI soft loans
• Requires Innovative Approaches
THANK YOU!

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