

BACKGROUND

Energy supply security became a critical issue for Armenia in late 1991, when Azerbaijan shut down the main pipeline transporting Russian gas to Armenia. This meant that a smaller pipeline through Georgia, which was subject to disruption, remained the only source of natural gas used for electricity generation and heating. The ensuing energy crisis was the main reason for the Armenian Government's controversial re-opening of the Metzamor Nuclear Power Plant, shut down after the 1988 earthquake. This action alleviated the immediate energy shortfall, but despite the extensive safety improvements made in recent years, this Soviet-designed facility is considered inherently unsafe by international nuclear regulatory agencies.

While Armenia has significant hydroelectric power potential, increased output in this sector has resulted in the reduction of water level in the country's largest lake – Sevan – to ecologically dangerous levels.

The Heating sector has one of the largest potentials for energy efficiency improvement and for reduction of significant environmental externalities as a result of the collapse of the district heating systems in early 1990s, and the present heavy reliance on wood and electricity for residential heating purposes.

Energy end-use is where Armenia's energy sector is disfigured by inefficiencies, significant energy losses and degraded infrastructure, all of which contribute to a system that in the present shape is unsustainable from both the economic and environmental perspective.

CHALLENGES

National policy level: The main barrier at the national level is the lack of legal framework for the promotion of energy efficiency measures.

Local government: The key problems at the municipal level are related to lack of financial resources and poor energy management and planning practices.

Housing associations: In the residential energy sector where most of the end-use consumption is, the inefficient use of energy resources is mainly due to low capacity of the population to invest, as well as the poor organizational capacity and awareness of Home Owners Associations (condominiums).

APPROACH

The Alliance to Save Energy launched Municipal Network for Energy Efficiency (MUNEE) in Armenia in 2000. Since then, the Alliance has created a strong understanding of

flexible financing mechanisms for energy efficiency and heating projects with municipalities and housing associations, mobilized communities to initiate residential heating projects, trained municipalities and heating companies to design and seek financing for energy projects, brought together disparate energy stakeholders from all sectors to start energy policy dialogue and promote energy efficiency reform.

The MUNEE Program works in four key areas in Armenia: policy reform, residential energy efficiency and heating, education and awareness campaign, municipal energy efficiency networking.

RESULTS

The past and present accomplishments of MUNEE in Armenia are the following:

Policy Reform

- *Established the Armenian Energy Efficiency Council (AEEC)*, which brought together ministry officials, non-governmental organizations, academia, energy businesses and donors. AEEC aims at developing a dialogue on national energy policy issues and identify priority areas for energy efficiency reform.
- Provided technical assistance for the development of *Law on "Energy Saving and Renewable Energy"* of the Republic of Armenia which included:
 - AEEC roundtable discussions of intermediate drafts
 - Public hearing (NGOs and media)
 - Ratification of the law in December 2004
- Ongoing work on the development of secondary legislation and ordinances, including bylaws on *Conducting Energy Examinations, the National standard for determining the energy intensity of energy consuming equipment and processes* passed by the State Standardization Committee in March 2007.
- Current efforts focus on updating the *Construction Code on Building Thermal Protection*.
- *The National Program on Energy Saving and Renewable Energy (ESRE)* was developed and adopted by the Government of Armenia in January, 2007. The Program also included energy audits of all large energy consumers in Armenia, as well as assessment energy end use and efficiency potential in all sectors of the economy. As a result, the country-wide and sectoral

energy efficiency potentials were assessed and used to propose policy actions to utilize this potential.

Residential Energy Efficiency and Heating

- Conducted condominium surveys in a number of cities on energy efficiency and heating status, problem areas, needs and priorities in order to design training programs.
- Trained and mobilized condominiums for initiating loan-financed community operated heating projects.
- Researched, published and distributed analytic reports and leaflets on the following topics:
 - Heating Equipment and Service Providers Market Assessment
 - Decentralizing Residential Heating in Armenia: Review of Pilot Projects
 - Review of 22 Energy Efficiency Laws: Guide for Policy-Makers
 - Energy Efficiency Advice Booklet
 - Condominium Heating Guide
 - Current Energy Saving Status and Needs in Armenian Condominiums
 - Barriers to Residential and Municipal Energy Efficiency in Armenia
 - Participatory Assessment of Low-Income Household Needs and Financing Mechanisms in Community-Operated Heating Projects

Education and Awareness Campaign

- Conducted *Building Energy Efficiency Program* software adaptation and training for energy efficiency project design and business planning; trained 5 trainers from ACEE and 11 municipalities.
- Organized condominium trainings, workshops and day-to-day consultations on residential energy efficiency and heating highlighting:
 - technical and institutional solutions for energy efficiency
 - financing sources and mechanisms
 - low-income issues in heating projects
 - role of ESCO's and municipalities.
- Developed a renewable energy educational poster

for all schools in Armenia and held energy education workshops in high schools.

Project Financing

- Launched residential energy efficiency revolving funds in the cities of Gyumri and Vanadzor in collaboration with Third Nature NGO and the Lori Marz Condominium Center, respectively. The Revolving Funds in both cities are providing micro loans to condominiums for small scale building energy-efficiency projects. The projects have already covered over 600 apartments in 16 projects, which are yielding 350 MWh in annual savings.

Strengthening the Municipal Energy Efficiency Network in Armenia/Outreach to Cities

- Creating strong ties with local authorities and municipalities to discuss and share experiences on energy efficiency issues in Yerevan, Kapan, Yeghegnadzor, Tsaghkadzor, Ararat, Sisian, Hrazdan, Charentsavan, Sevan, Gumri and Vanadzor.
- Organizing study tours based on success stories in the field of EE within residential and municipal sectors (Poland, Lithuania, Ukraine).
- Provided training on EE financing tools (Yalta, Kiev, Puscha –Vodica, Ukraine); municipal energy planning training for 14 Armenian municipalities (Armenia, Moldova).
- Holding a dialogue with local municipalities on establishment of Municipal Energy Working Group to address energy efficiency financing and targeted social assistance to low-income households for heating purposes.
- Compiling and disseminating “Armenia – Energy News Review” electronic newsletter and publishing articles on housing EE in local newspapers.
- Contributing to the MUNEE.org website, providing regular updates on achievements in Armenia

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For More Information:

Astghine Pasoyan
apasoyan@ase.org
Yerevan, Armenia

www.munee.org

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