

Financing Building Energy Efficiency in Armenia

Micro Loans for Building Energy Efficiency Projects

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Municipal EE Financing Forum

Astghine Pasoyan, Senior Program Manager
Municipal Network for Energy Efficiency/USAID
Alliance to Save Energy



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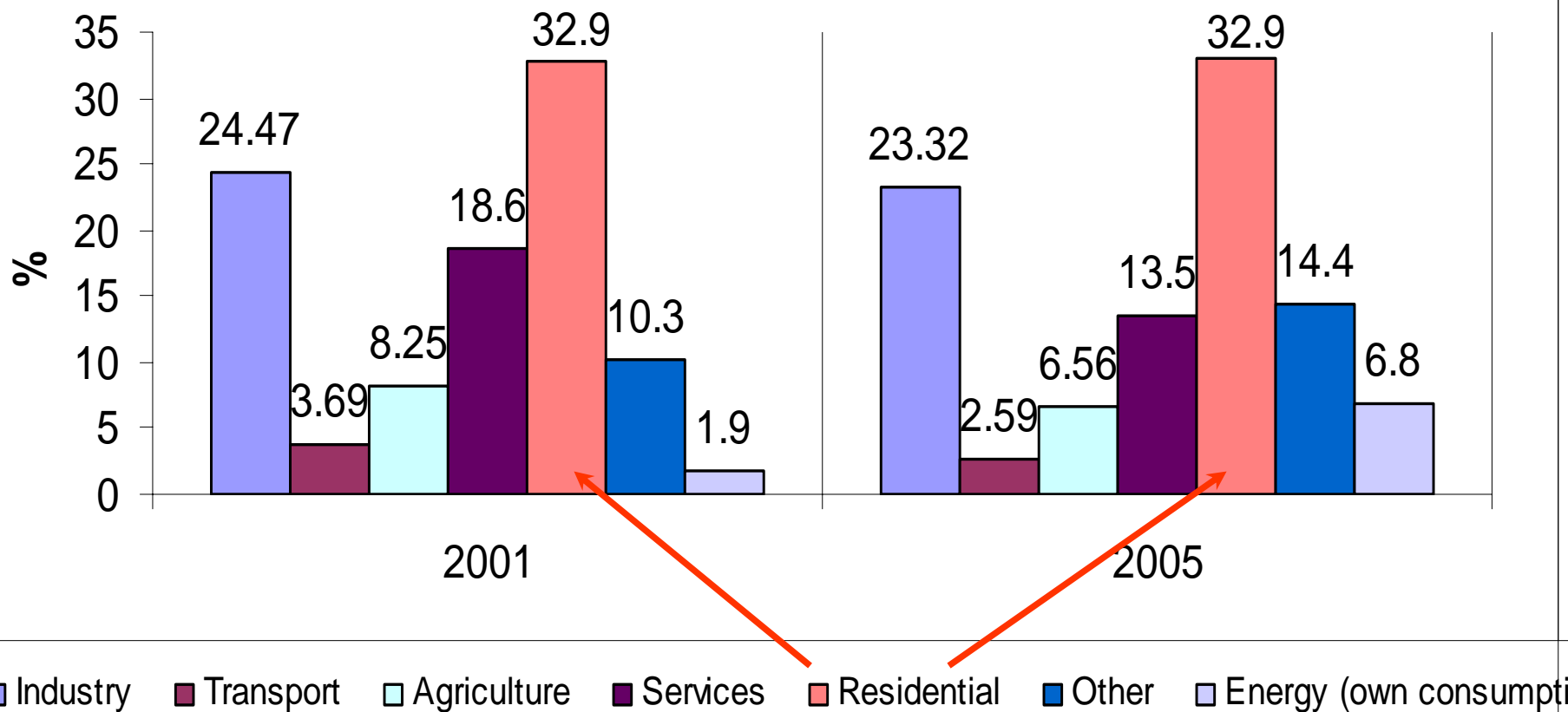
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Armenia: Current sectoral electricity consumption



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Share of Electricity Consumption by Sectors (%)

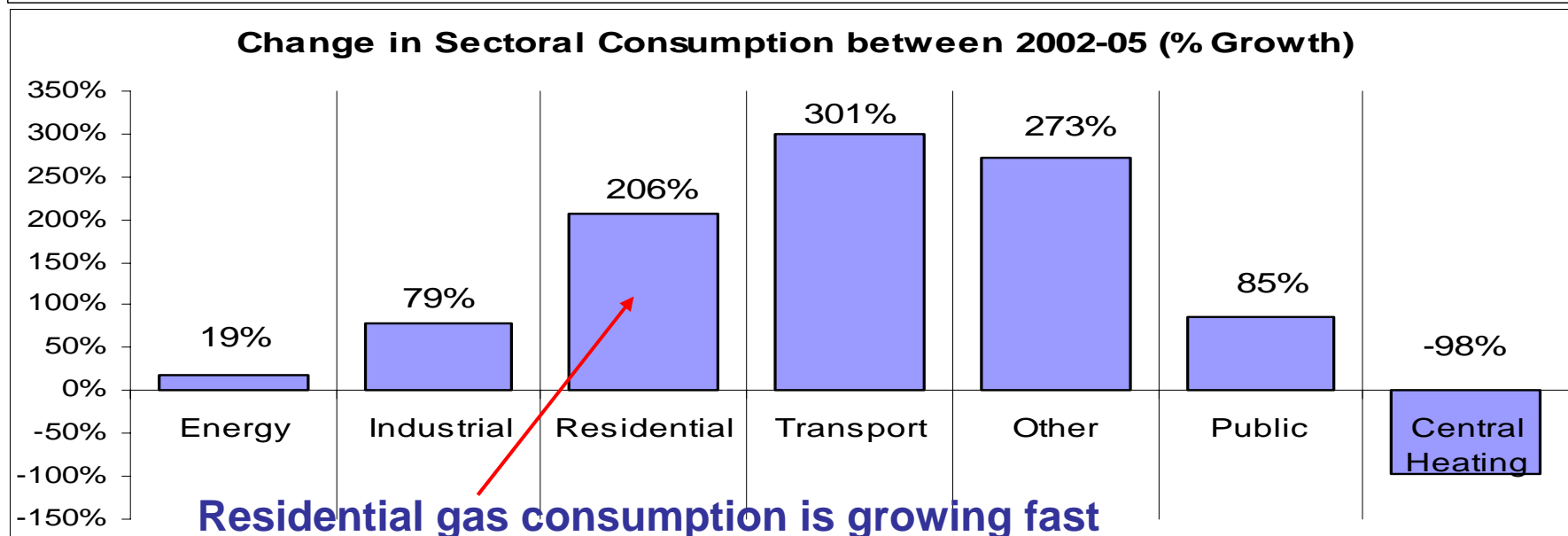
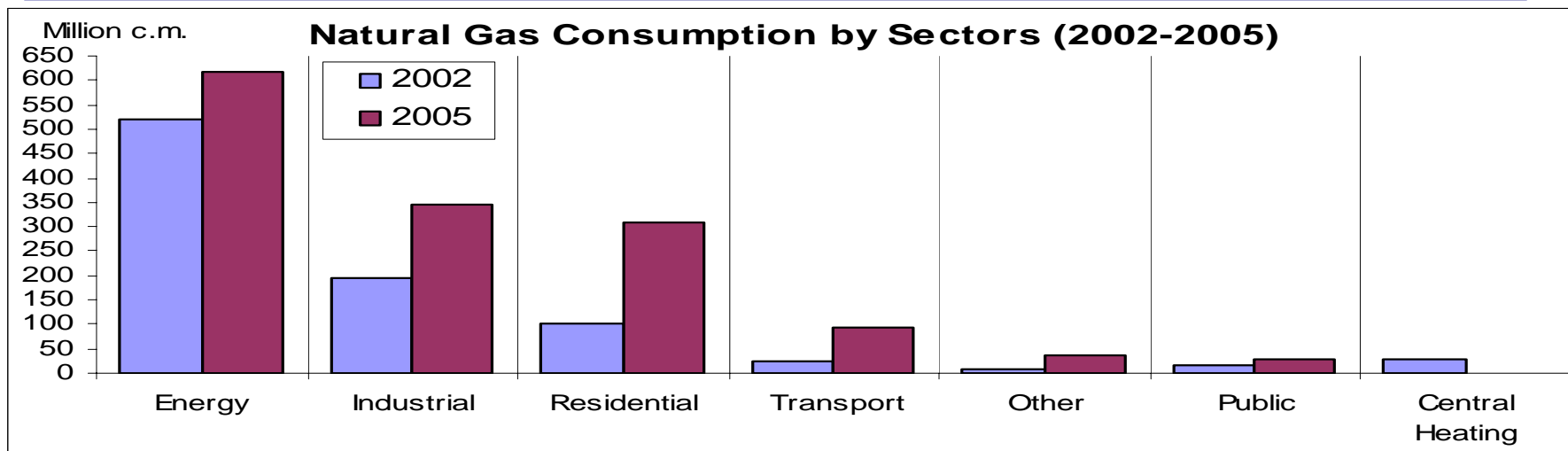


Residential sector is consistently is the largest electricity consumer

Armenia: Current Structure of Gas Consumption



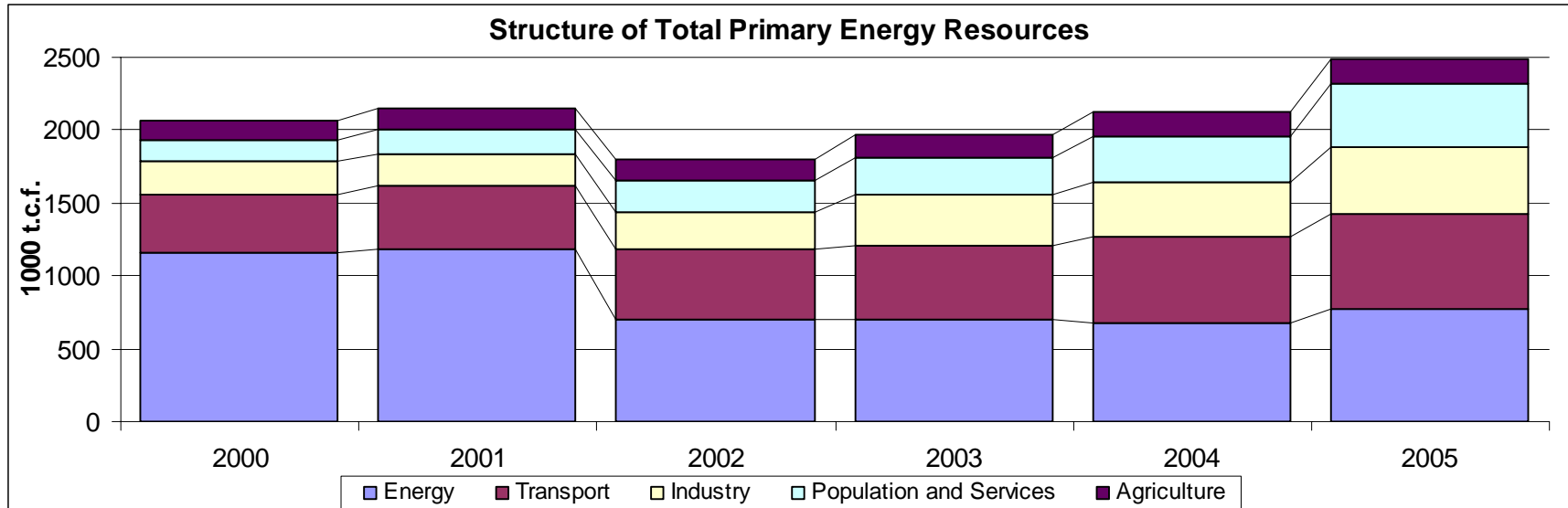
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Areas with Largest Energy Conservation Potential in Armenia



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1. Electric and heat power generation and distribution
2. Drinking and irrigation water supply
3. Electric lighting
4.

Role of municipalities



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- **Reduce space heat losses in buildings / building energy efficiency;**
 - Reduction potential: Weatherization can cut residential heat energy consumption by 30% (or 3.35 mln GCal in residential and 0,67mln GCal in public buildings)
- **Improve efficiency of urban heating**
 - *Note: since DH has predominantly collapsed, efficiency improvements in heating systems are not reviewed*
 - Promote rehabilitation of centralized heating instead of individual heating solutions
- **Improve efficiency of street-lighting;**
 - Potential: 470 mln kWh/year
- **Improve efficiency of water supply**
 - Watergy (35%)

Alliance program for Building EE



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Support the energy efficiency in buildings based on common space renovation & maintenance projects, including:

- Insulation and optimization of building's heating system;
- Weatherization of entrance doors and windows;
- Repair of roofs;
- Leak reduction and insulation of water supply and sewerage systems;
- Improved efficiency of electrical lighting: automated regulation, efficient replacement of inefficient light-bulbs;
- Implementation of other energy efficiency measures in the common use areas of the building.

Program Approach



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- Involvement of nation-wide and/or local public groups dealing with building conservation and condominium capacity building issues (local NGOs)
- Own advance contribution to the investment costs by beneficiaries (>10% investment cost)
- Commitment from municipality to cover the share of low-income households in capital investment costs (up to 20%)
- Small size of projects (\$500-600) with 6-12 month repayment

Active in: Gumri (2nd phase), Vanadzor (1st phase) and Hrazdan (start-up phase)

Institutional Schemes



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LENDER:
NGO

BORROWERS:
condominiums

Model 1: Gumri

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LOW INCOME
ASSISTANCE
Municipality

LENDER:
NGO

BORROWERS:
condominiums

Model 2: Vanadzor

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LOW INCOME
ASSISTANCE
Municipality

LENDER:
MUNICIPALITY
(from independent account)

BORROWERS:
Condominiums
(looking at the legislation
for Lending to municipal
Buildings)

Model 3: Hrazdan

Current Small Building EE Project Pipeline



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2005

■ **GUMRI: 2 projects**

[2 HOAs, 2 buildings, 4 entrances, 142 apts]

2006

■ **GUMRI: 4 projects**

[4 HOAs, 9 buildings, 24 entrances, 402 apts]

■ **VANADZOR: 3 projects**

[3 HOAs, 3 buildings, 10 entrances, 134 apts,
506 people]

PENDING

➤ **HRAZDAN: 10 HOAs working on applications**

Investments and Savings



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- **Alliance contribution to the revolving funds:** **\$3,150**
 - Leveraged investments from residents: **\$ 500**
 - Municipal investment on behalf of low-income: **\$ 350**
 - Revolved Funds from the first phase: **\$1,000**
- TOTAL INVESTMENT TO DATE:** **\$5,000**

year	Annual Savings (MWh)	Financial Savings (if gas heating)	Financial Savings (if electric heating)
2005			
2006			
2007 (expected)	350.8	\$6,503	\$23,262

Other Outcomes



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The achieved and expected outcomes include:

- Increased building energy efficiency, improved comfort and maintenance of buildings,
- Extended building lifespan
- Improved payment discipline of the residents
- Increased capacity of condominiums in building maintenance and management
- Long-term availability of the Revolving Funds
- Increased attractiveness of the city for future larger-scale investments
- Building credit history of borrowers

Next Steps



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- Monitor project performance
- Increase single project size to \$1000-1500 to allow for roof renovation works
- Introduce interest rate
- Attract other housing finance institutions to enter this market

Lessons learned



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- Awareness and explanatory work crucial
- Involvement of municipalities in building EE projects necessary to eliminate low-income barrier
 - Social funds used to reduce utility bills (instead of covering them)
- Gradual increase of lending to each borrower helps build confidence in this fragile lending sector
- Role of champions instrumental (*e.g. saga of Aparan city*)
- Experience can be replicated to design a larger building EE lending facility



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Thank you

Astghine Pasoyan

MUNEE Senior Program Manager

Alliance to Save Energy

Tel: 37491 415677; Fax: 37410.547312

E-mail: apasoyan@ase.org