Retrofitting Multi-Apartment Buildings (MAB) in Armenia

“De-risking and Scaling-up Investment in Energy Efficient Building Retrofits” GCF-UNDP Project

Sergey Sayadyan, Financial Incentive Task Leader, UNDP-GCF Project

Yerevan
22 November 2019
# Housing stock in Armenia (2017)

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of multi-apartment buildings, unit</td>
<td>19,195</td>
</tr>
<tr>
<td>Number of multi-apartment buildings in urban settlements, unit</td>
<td>12,266</td>
</tr>
<tr>
<td>Number of apartments in multi-apartment buildings in urban settlements, unit</td>
<td>417,915</td>
</tr>
<tr>
<td>Number of multi-apartment panel buildings, unit</td>
<td>4,383</td>
</tr>
</tbody>
</table>

"De-risking and Scaling-up Investment in Energy Efficient Building Retrofits" Project
### Improved health
- Reduced local air pollution
- Improved health and life expectancy by 1.8 years
- Reduced healthcare cost
- Reduced budget healthcare spending

### Reduced ambient air pollution
- Reduce CO2 emission by 2.6 M t/year
- Reduce CO2 social cost by 10.4 M t/year
- CO2 market value $7.3 M t/year

### Increased consumer saving and demand
- $401 per HH
- $63.5 M total
- Increased demand for other goods & services

### Improved energy security
- Potential 6% reduction of gas import
- 1.56 M m³
- Potential reduction of gas import by $23.4 M

### Increased value creation
- Saving 15% of total energy consumption
- Saving potential = 90% annual production of Yemenia TPP
- 1 KWH = $1.22 additional value
- Creating additional $136.4 M GDP

### Stimulated civic solidarity
- Participatory decision making
- Cooperation
- Immediate improvement of livelihood
- Healthy competition demand condominiums and other community units

### Enhanced institutions
- Condominium development
- Public-private partnership

### Business generation
- Demand for EE goods and services
- Creation of 10,000 jobs
- New economic opportunities
Indicative Retrofit Cost Estimate

- MAB - 9 stories / 36 apartments
- Cost of EE retrofit – $120,000 (VAT incl.)
- Normative energy savings – over 58%
- Actual energy savings – $5,650/year
  (monitored data for 3 heating seasons average, below 50% of normative comfort)

Daniel Varujan 6, Avan district, Yerevan

“De-risking and Scaling-up Investment in Energy Efficient Building Retrofits” Project
Business Model: Implementation by Public ESCO

Grants Subsidies
- Donors
  - GCF, EU
- Government of RA & municipalities

Decision making
- Board of Trustees/Steering Committee

Public ESCO (R2E2)

Contractor

Applicant
- (residential building representative, condominium, etc.)

Residential fund
- Grants
- State/municipal budget allocation/subsidies
- Contribution by applicants

Commercial banks (optional)

"De-risking and Scaling-up Investment in Energy Efficient Building Retrofits" Project
"De-risking and Scaling-up Investment in Energy Efficient Building Retrofits" Project
Financing by sources

- MAB Residents *(loan or own resources)*
  30% / $36,000

- Government of Armenia
  15% / $18,000

- Municipality of Yerevan
  15% / $18,000

- UNDP-GCF grant funds
  22% / $26,400

- Other donors financing
  18% / $21,600

Estimated investment of $120,000 per MAB (VAT incl.)

- MAB payment - > $4,320 / year
- MAB actual saving - $5,650 / year (below 24%)

Fee of 10$ per apartment/per month covers 30% of renovation costs (10 years discounted)

VAT exemption as an option (+ Subventions for regions)

From annual budget spending on MABs (for Yerevan only)

With higher contribution for pilots

EU / other contribution considered

"De-risking and Scaling-up Investment in Energy Efficient Building Retrofits" Project
Target of the GCF project - 290 MAB retrofits

<table>
<thead>
<tr>
<th>Total investment</th>
<th>$ 34,800,000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>out of which contribution by:</strong></td>
<td></td>
</tr>
<tr>
<td>MAB Residents</td>
<td>$ 10,440,000</td>
</tr>
<tr>
<td>Government of Armenia</td>
<td>$ 5,220,000</td>
</tr>
<tr>
<td>Municipality of Yerevan</td>
<td>$ 5,220,000</td>
</tr>
<tr>
<td>UNDP-GCF project grant funds</td>
<td>$ 7,656,000</td>
</tr>
<tr>
<td>Other grant financing sources</td>
<td>$ 6,264,000</td>
</tr>
</tbody>
</table>

"De-risking and Scaling-up Investment in Energy Efficient Building Retrofits" Project
THANK YOU!

www.nature-ic.am

“De-risking and Scaling-up Investment in Energy Efficient Building Retrofits” Project