Energy Efficiency in Housing for Sustainable Development

Doris Andoni MSc.
National Housing Agency
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Energy Efficiency in the housing sector

WHY DOES IT MATTER?
Buildings are responsible for:
Buildings are responsible

- 60% of global electricity use
- 40% of global energy consumption
- 24% of global CO₂ emissions
- 5-10% of national employment
- 10% of global GDP
Energy efficiency is the greatest energy source
Energy efficiency improvements

Opportunities

- More investments
- Public budget
- Resource management
- Development goals
- Market & social benefit
- Consumer surplus
- More investments
- Poverty alleviation
- Energy savings
- Energy security
- Energy efficiency improvements
- Asset value
- Job creation
- Climate change mitigation
- Industry productivity
- Consumer surplus
- Poverty alleviation
- Energy savings
- Energy security
- Energy efficiency improvements
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- Job creation
- Climate change mitigation
- Industry productivity
EU policies - “20-20-20 up to 2020”

- Reduction of GHG emission 20%
- Increase RES by 20%
- Reduce energy consumption by 20%

Actual level compared to the objective 2020:
- Reduction of GHG emission: -20%
- Increase RES: 20%
- Reduce energy consumption: -10%
EU and EE

- Targeting the Building sector, which consume 40% of energy;
- Policies to address the affordability;
- Some measures of the Action Plan:
  - Reduction of VAT for civil works, appliances, etc.;
  - All houses built according to the “passive” model after 2011;
  - All houses with “passive” heating/cooling after 2008(?)
Energy efficiency directive

- Mandatory 1.5% **savings** yearly
- **Energy audits** carried out in an independent manner
- 3% of public buildings to be renovated yearly
- Final consumers are provided with **individual meters**
- **Billing** to be accurate and based on actual consumption
ENERGY EFFICIENCY OF THE HOUSING SECTOR IN ALBANIA
The case of Albania – Some data

<table>
<thead>
<tr>
<th></th>
<th>Before ‘60</th>
<th>1961-1990</th>
<th>1991-2011</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>7%</td>
<td>24%</td>
<td>39%</td>
<td>30%</td>
</tr>
<tr>
<td>Tirana</td>
<td>6%</td>
<td>15%</td>
<td>57%</td>
<td>23%</td>
</tr>
</tbody>
</table>
Ownership: 99% private; 0,12% municipal housing

<table>
<thead>
<tr>
<th>Year</th>
<th>Tirana</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>83%</td>
<td>93%</td>
</tr>
<tr>
<td>2011</td>
<td>87%</td>
<td>90%</td>
</tr>
</tbody>
</table>
## Condition of the housing stock

<table>
<thead>
<tr>
<th>Condition</th>
<th>Tirana</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>In good condition</td>
<td>35.7%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Adequate for habitation</td>
<td>56.0%</td>
<td>63.7%</td>
</tr>
<tr>
<td>Inadequate for habitation</td>
<td>8.1%</td>
<td>10.6%</td>
</tr>
<tr>
<td>In construction (2008)</td>
<td>0.2%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Houses renovated since January 2004

- Tirana: 11%
- Total: 8.50%
Energy consumption

- Prodhimi i Ujit te ngrohte: 23%
- Ngrohja/freskimi: 40%
- Gatimi: 17%
- Ndricimi: 10%
- Paisjet elektrike: 3%
- Te tjera: 7%

Source: Co-Plan
Photo: D. Andoni
Energy efficiency in the housing sector in Albania - challenges

New housing developments
• Low demand for EE housing
• Low capacities to implement and/or enforce the law
• Lack of:
  – Building code and standards
  – Energy efficiency standards
  – Training and capacity building

Existing housing stock
• HOA non active
• Housing stock needs serious improvements
• Lack of:
  – Financial resources
  – Incentives
  – Information
  – Awareness
  – Capacities
  – Regulations
- The house is old
- Homeowners not organized
- Loan is expensive

- Housing is expensive
- Loan is expensive
- Should pay the manager

What collateral?

Lender

Management company

Developers

EE appliances

EE building materials
What should be done?

Work in parallel

• All new houses should be energy efficient:
  – Adapt and adopt Eurocodes
  – Need for a basis for construction and engineering contract specifications
  – Avoid speculation with the terminology (EE)

• Develop policies for retrofitting the existing housing stock
• Incentives for HO
• Pilot projects that engage HO and stimulate their demand
NHA is a self-financing, state enterprise, established in 1993. Its mission is to provide affordable housing.
NHA contribution to EE housing

• 2014 – projects for low-cost and energy efficient housing in 6 cities
• More than 300 apartments to be built between 2014 – 2016
• Typology of housing to be revised
Problems encountered

- Lack of regulations and standards for EE
- Lack of expertize
Conclusions

- Housing sector has a great potential for saving energy
- There are legal, financial and institutional barriers
- Building code and standards should be developed
- Incentives to stimulate demand for EE housing