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REELIH
RESIDENTIAL ENERGY EFFICIENCY FOR
LOW-INCOME HOUSEHOLDS

RESIDENTIAL ENERGY EFFICIENCY FOR LOW INCOME HOUSEHOLDS (IN MULTI - APARTMENT BUILDINGS)

Fifth International Forum on Energy for Sustainable Development
Tunis-November 2014

Development rationale & objectives



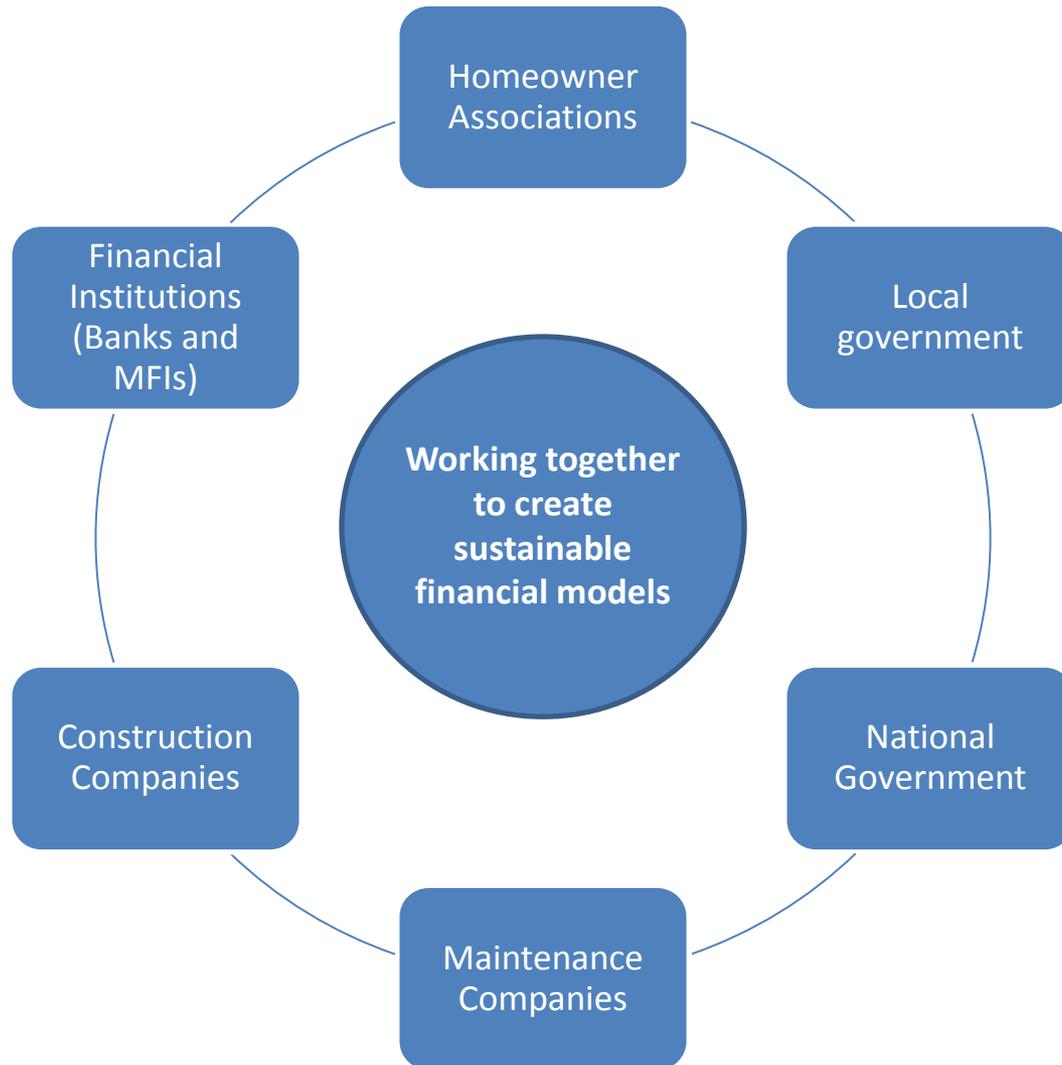
Rationale:

Price increases are necessary to allow energy sector reform but this requires a third social safety net for low income households. This can be provided through investment in residential energy efficiency.

Objectives:

1. **Improve the residential energy efficiency investment environment in the region,** through a regional platform for knowledge sharing, awareness raising and advocacy, addressing financing approaches, promotion of entrepreneurial solutions, job development, and appropriate technical information.
2. **Develop and test replicable financing model(s),** combining capital and subsidies for lower income households to decrease energy consumption and cost.
3. **National institutional capacity development:** Improve management and maintenance of collective residential units by HOA's and/or other stakeholders.

Market development



Armenia

- More than 50% of the population in Armenia lives in residential buildings (nearly **430.000** residential apartments).
- Approximately 75% of these buildings were constructed between 1951 and 1990.
- Nearly 23% of residential buildings in Armenia (4,328) are constructed with concrete panels.
- In the majority of buildings façade insulation did not take place.
- Families spend significant amounts of money for heating, especially during winter months (as much as 30-40% during winter)
- Energy prices are subject globally to a rising trend.

Bosnia & Herzegovina

- 19,6% the population in Bosnia and Herzegovina lives in residential buildings (nearly **206.000** residential apartments).
- About 80% of these buildings have been built between the years of 1950 and 1991.
- The majority of residential buildings in Bosnia and Herzegovina are built with a concrete frame and brick walls.
- In the majority of buildings extra heat insulation of walls was not implemented
- Families living in old buildings spend significant amounts of money for heating (as much as 30-40% during winter)
- Energy prices are continuously increasing

Project in numbers in Bosnia

Municipality	Number of buildings	Types of buildings	Number of apartments in the building	What kind of interventions are going to be done on the building	Investment per apartment without subsidy	Total investment	Percent of subsidy	Number of apartment who takes loan.	what kind of loan.
Banovici	2	red brick based standard building made for coal miners in 1950s	7 3	Insulate the walls and roof Insulation of walls	Ranging from 500 EUR to 2,000 EUR (size of apartments differs) 2,000 EUR	15.0000EUR 10,000 EUR	45% (6,750 EUR) 45% (4,500 EUR)	6 0	Commercial individual loan from local bank with interest rate of 8,21%. Two HOs will be co-guarantors to one low income family.
Zivinice	1	standard multi-apartment building built in 1960s. Standard light aired light bricks.	30	Insulation of the walls and roof	Ranging from 600EUR to 700EUR	26,000EUR	50% (13,000 EUR)	"6"	6 families have agreed with the construction company to pay their monthly installments directly to the construction company. This is another model for financing REE measures.
Tuzla	2	standard building of red brick made in 1950s.	40 10	Insulate the walls	875 EUR Ranging from 1300 to 1500 EUR	35,000 EUR 14,000 EUR	30%	No loan	No loan
Tesanj	1	standard building of red brick made in 1970s.	9	Insulate the walls	Ranging from 500 1,500 EUR	11,000 EUR	45% (4,950 EUR)	2	Standard commercial loan at 8,2% interest rate

Project in pictures in Bosnia



Key issues: Determining affordable subsidies

Bosnia & Herzegovina:

- Each municipality that we work with initially wanted to provide a different subsidy percentage. (Zivinice 35% + 15%, Banovici 30% + 15%, Tuzla 15% + 15% and Tesanj 15%). Home owners in Zivinice and Banovici were able to come to an agreement and in Tesanj only after they moved away from the 15% and accepted that their budget cap of 10,000 KM was applied to a small building, effectively bringing the subsidy percentage up to 45%. In Tuzla, where the percentage was set to 30% none of the buildings were able to reach agreement.
- Very preliminary estimates the total cost of renovating the apartment building stock in Tuzla municipality: 5,100,000 EUR for 212,708 m² of façade. At a 45% subsidy rate, 2,295,000 EUR subsidy would hypothetically be needed to renovate the entire apartment building stock.
- This would create an estimated 118.25 years of (seasonal) work in Tuzla.

Project in numbers in Armenia

Municipality	HOA	Number of buildings	Types of buildings	Number of apartments in the building	What kind of interventions are going to be done on the building	Investment per apartment without subsidy	Total investment	Percent of subsidy	Number of apartment who takes loan.
Yerevan	Ajapnyak-1	1	prefabricated concrete panel building	132 2 entrances	Installation of windows in common spaces, renovation of stairwells, insulation of ground floor/public area, insulated entrance door and updating of lighting system.	71.2 USD	9,400 USD	40%	The loan will be provided to HOA, tenants will not take any loan.
Yerevan	Avan 4	1	prefabricated concrete panel buildings	54	Installation of windows in common spaces and installation of insulated entrance door	58.7 USD	3,170 USD	40%	The loan will be provided to HOA, tenants will not take any loan. 3 apartment acting as a guarantees
Yerevan	Zartonq	1	prefabricated concrete panel buildings	36	Installation of windows in common spaces, renovation of stairwells, insulated entrance door	169.4 USD	6,100 USD	40%	The loan will be provided to HOA, tenants will not take any loan. 25 apartment acting as a guarantees

Project in pictures in Armenia



Key issues: Building trust in the financial sector

Armenia:

- Banks are reluctant to lend to condominiums: little history and condominiums usually cannot provide the required collateral. Home owners are very reluctant to provide guarantees to banks, in particular where it concerns their apartments.
- People indicate to be willing to pay but full façade renovations are unaffordable due to cost (2,775 USD/apartment, without subsidy).
- Condo's in principle have sufficient *collective* monthly income to provide as a guarantee for *one* building but the law does not allow this.
- Smaller interventions on common spaces are clearly more interesting (guarantee fund?)
 - REELIH project is *building trust* between the banks and the condominiums/home owners.
 - Home owners are learning about *alternative solutions for guarantees* that create investment opportunities in common spaces. (For example small group of tenants can provide guarantees for the entire building. This is easier when the investment amount is smaller.)

Participate: knowledge-sharing platform



In December, we will take stock of what we learned this year in Armenia and Bosnia and incorporate our lessons into our approach to facilitate a new cycle in both countries in 2015.

Our focus will be on:

- Facilitating the decision making process in home owner associations
- Discussing with banks which loan products are most supportive of the process
- Discussing with local governments how subsidies are best structured
- Convening all relevant market stakeholders to discuss which regulatory changes may be needed to create the most facilitative environment to scale up.

One way to stay connected is by joining our [LinkedIn](#) group:

“Energy Efficiency for Common Spaces”