

11th Meeting Eastern Partnership Platform III on Energy Security 23 – 24 June 2014, Brussels, Belgium

Project ESIB Energy Saving Initiative in Building Sector in Eastern Europe, Caucasus and Central Asia



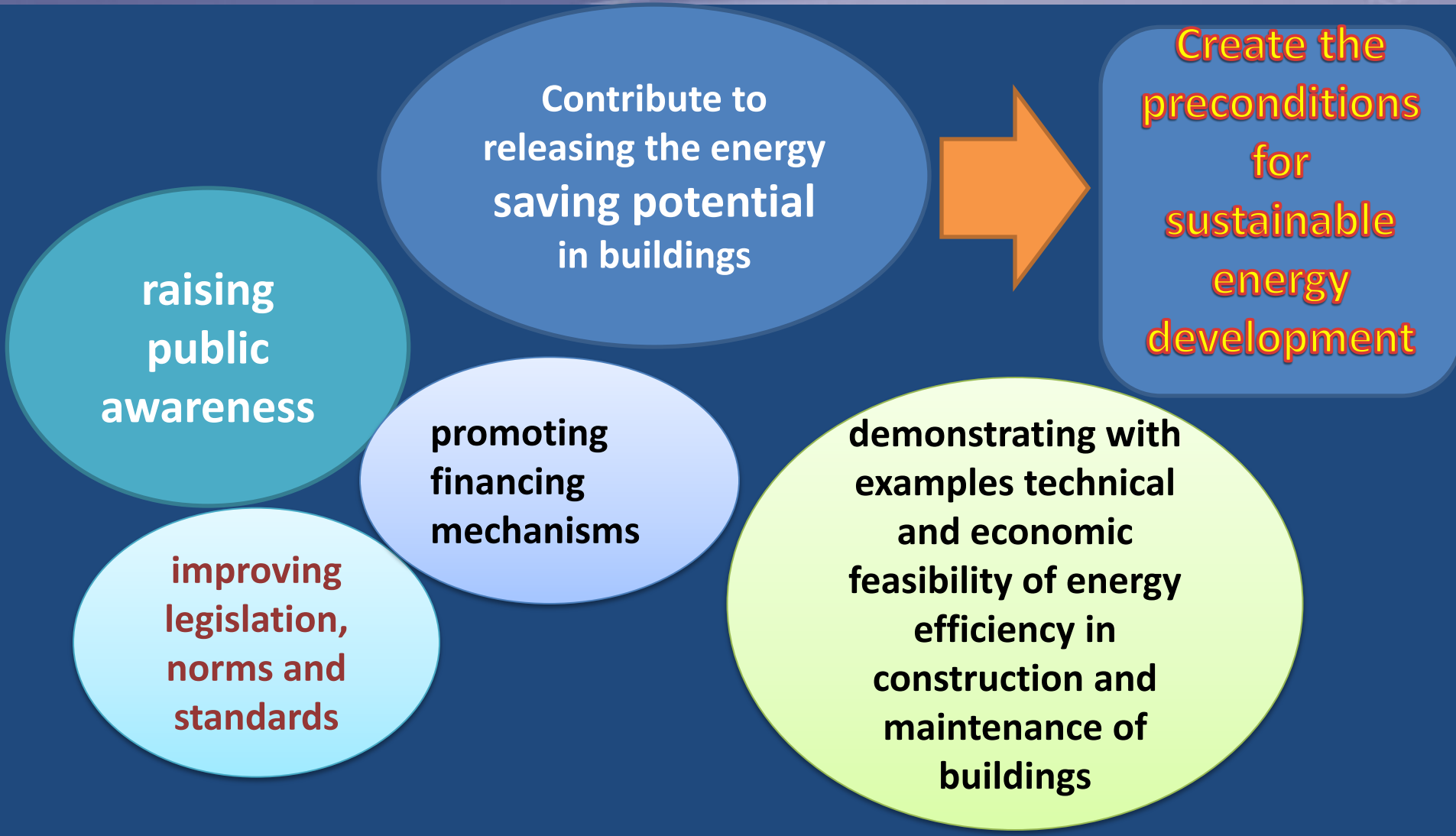
Project funded by
l'Union Européenne



Energy cooperation between the EU, the littoral States of the Black & Caspian Seas and their Neighbouring Countries

Energy Efficiency in buildings?

Why ESIB?



ESIB Results and Events

Awareness raising

- ESIB Webpage www.inogate-ee.org, +900 visitors/month
- 21 Webinars on energy efficiency topics, +40 attendants/webinar +800 participants
- Training of journalists on EE issues (Astana, Baku, Tbilisi, Chisinau, Kiev, Bishkek, +150 trainees)
- University students were trained as well as professional engineers and Energy Auditors



ESIB Results

Support to legislative development


- Energy Efficiency Legislation review in Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan and Ukraine
- Analysis of the legislation that regulates setting up of Home Owners Associations identify the main barriers to energy efficiency rehabilitation
- Setting up of condominiums in three countries: KG, UA and AZ.



ESIB Results

Banking & Financing

- Survey on EE lending on +20 commercial banks
- New eco-loan products proposed to banks for lending funds to homeowners
- Financing plans produced for +25 buildings subject to EE rehabilitation



ESIB Results

Capacity Building

- Template for Energy Survey and Audit Methodology including Energy Auditor Certification Regulation
- Energy audit techniques. Real building used for the training +300 trained technicians in 10 countries, 25 buildings.
- Catalogue of Energy Efficiency design solutions
- 6 buildings have gone thru physical EE rehabilitation

ESIB – Armenia project design, when EE starts

Changing orientation

Clustering the cottages into larger groups

Changing the direction of the roof inclination

Improving the building shape coefficient



13% increase in social housing space



22% reduction in construction cost, after covering incremental EE costs;

220, 361 kWh/year energy savings

ESIB - Armenia

Financing	Two banking sector surveys, conceptualized the ESIB project specific approach to promoting energy efficiency finance in Armenia. The ESIB team developed and presented selected banks with a summary assessment of housing EE lending market (HSBC, AmeriaBank, ACBA Credit Agricole, Anelik, INECO, Ararat, Byblos banks)
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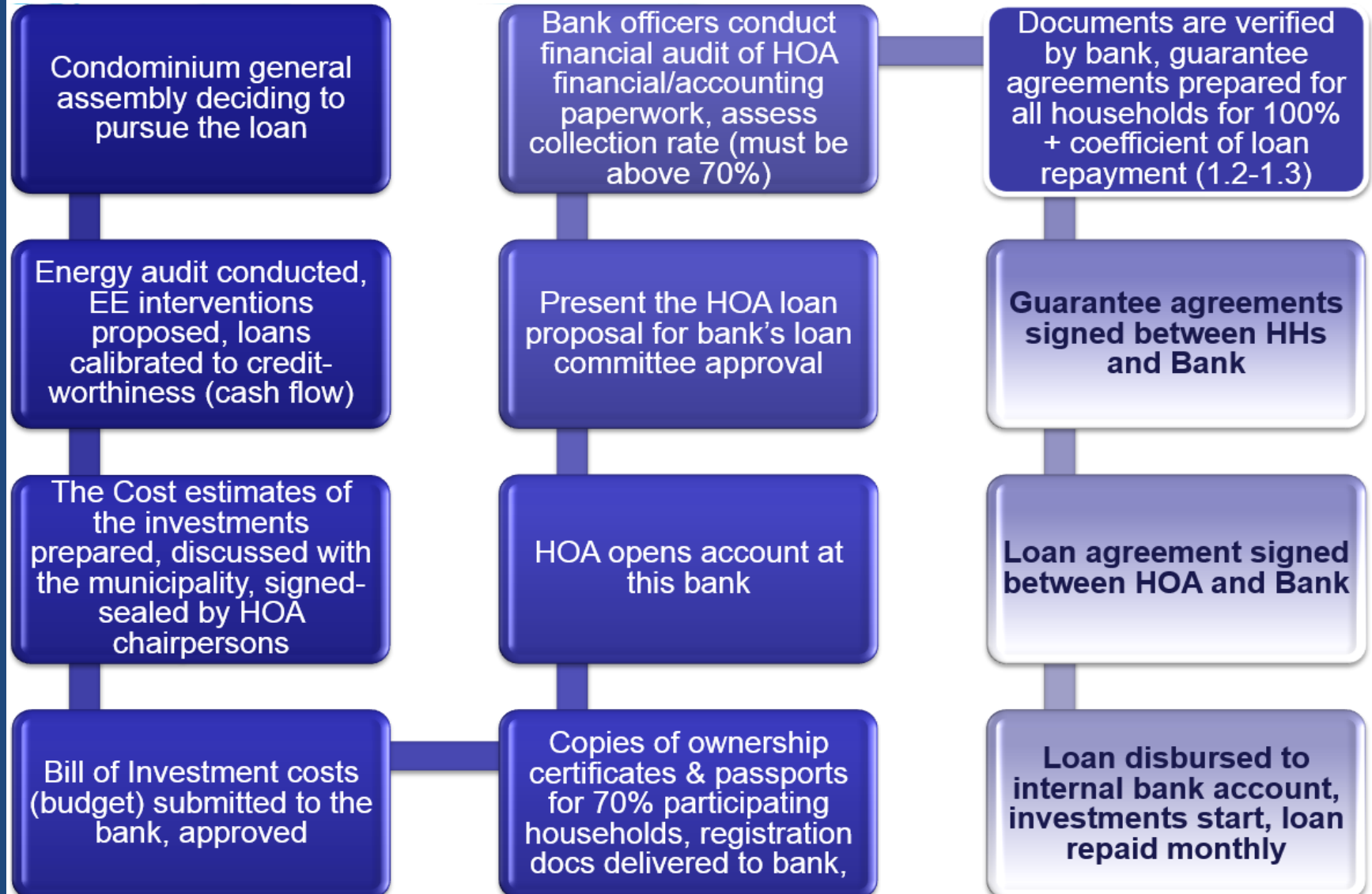
ESIB – Armenia HOAs EE

	UNITS	G.NZHDEH	MANANDYAN	I.SHENGAVIT	SHARURI
					
cost	Euro	4060	1940	3 610	4740
Energy Saving	kWh/year	23900	23300	34100	29400
	Euro/year	650	613	892	788
Payback	years	6.3	3.5	4.5	6

The EE retrofits would reduce the energy consumption in households by 15-20%, and the temperature in common spaces – by 3-6°C, which bring to 1-2°C increase in indoor air temperature within the apartments.

ESIB – Armenia HOAs EE

HOA Lending Process under HFHA-INECO Bank Scheme



ESIB – Azerbaijan Building Energy Management

<p>Legal – regulatory advocacy</p>	<p>Setup of a new condominium in 2013 in the 8th micro-region of the Binagadi sub-district of Baku city. On 30 December 2013 this condominium got a state registration as ‘Binagadi-1’.</p> <p>The activities in this area continue both in the Binagadi and other sub-districts of Baku city</p>
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ESIB - Azerbaijan

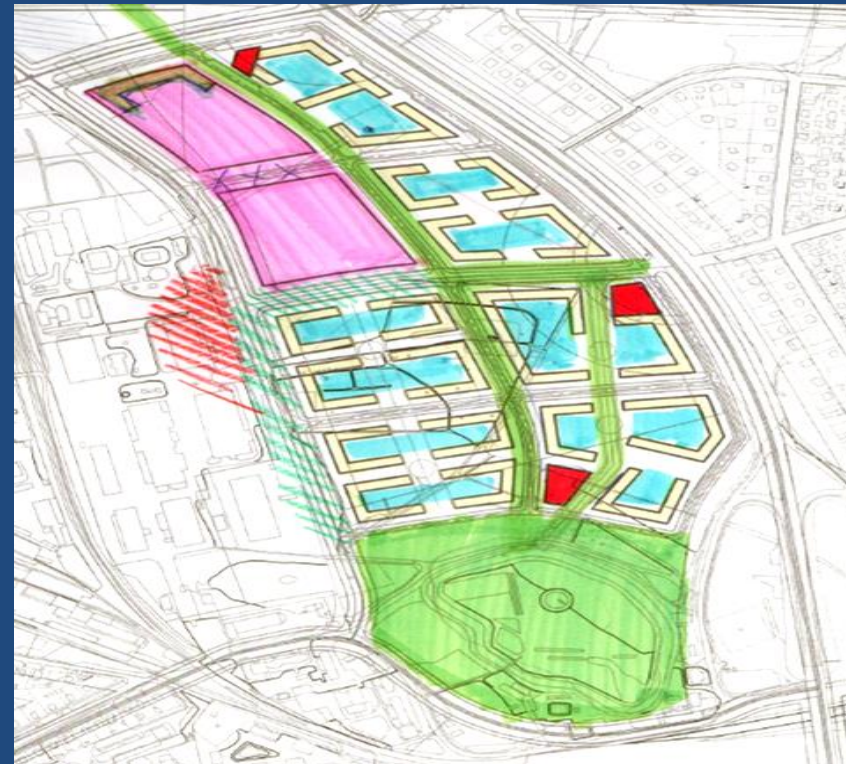


Indicator	Units	Parameter
Investments	EUR	580 000
Yearly energy saved	kWh	2 500 000
	EUR	70 000
Payback time at intern. Gaz price	years	8,3
Payback time at AZ prices	years	20
Cost per m2	EUR/m2	48
Reduction of emissions	Ton/year	440

ESIB – Belarus, beyond the single building

Pilot project in Brest Belarus

“Development of an Energy Efficient Urban Planning Concept and Typical Model of an Energy Efficient Urban District”. Pre-feasibility of energy efficient urban planning for the city of Brest, taking into account sustainable development criteria (OpenHouse assessment criteria).





Г. БРЕСТ
ВИЗУАЛИЗАЦИЯ ПРОЕКТНОГО РЕШЕНИЯ ЖИЛОГО РАЙОНА



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строчная энергоэффективная застройка



ESIB - Belarus

Energy effect:

saving of fuel and energy resources countrywide – 3.65 thousand tonnes of fuel equivalent;

Economic effect (investment efficiency):

net present value – EUR 12,500 thousand;
internal rate of return – 83.4%;
dynamic payback period – 2.40 years;
profitability index – 5.5 EUR/ EUR invested
benefit for the state – 550,000 EUR

Environmental effect:

reduction of CO₂ emissions – 6.31 thousand tonnes per year;
increased share of secondary raw material utilization – 60%.

Social effect:

increased comfort of living for people;
increased number of working places.

ESIB - Kyrgyzstan

Technical and professional capacity strengthening in energy efficiency and energy auditing

Within the framework of cooperation with the Bishkek City Development Agency with the objective of efficient management of condominiums and raising energy saving potential an energy audit was carried out in a multi-storied residential building to be followed by implementation of measures using the city grant and inhabitants' money. There is also a possibility to use credits for energy saving projects provided by local banks. The integration of the measures proposed will allow reducing heat and electricity use, diminishing the load and subsequent bills for heat and electricity.

ESIB - Kyrgyzstan

Bishkek's Housing Sector Metrics

Total apartment stock in city: 2503 buildings

Number of Apartments by HOAs: 1322 buildings

Number of HOAs in city: 949 HOAs

Average service fees for heating: 715 som (11 Euro)

Share of housing in HOAs: 90%



ESIB - Kyrgyzstan

EE MEASURES	SAVING		OPERATION	COST	PAYBACK
Heating Square total 4012m2	kWh/y	Euro/y	Euro	Euro	years
Insulation of walls	357 105	19 284		70 880	3.8
Replacement of windows	27 457	1 480		18 705	12.6
heating meter automatic regulation			200*	2 500*	
Total	384 562	20 764	200	89 585	4.3
The EE retrofits would reduce the energy consumption in households by 70%, where investment cost is 89 585 Euro with payback time 4.3 years					



ESIB - Moldova

Legal – regulatory advocacy

Review of a legal framework and technical norms on energy efficiency in buildings. ESIB team conducted a comprehensive comparison analysis of the whole regulatory framework including national legislative compliance with the requirements of EU Directives

Seminar on Energy Labeling and Eco-design about energy labeling regulatory practice and eco-design principles in the EU countries. Consultative assistance to the Ministry of Economy in developing a package of documents to create a system of energy labeling.

Assistance to the Energy Efficiency Agency in testing the Standard Model of the Building Energy Audit Report.

ESIB - Ukraine

Activity type	Specific interventions
Legal-regulatory advocacy	Review of the draft law on energy efficiency in buildings and presentation to a parliamentary committee before submission to the approval. Law never approved since 2009
	Support to the establishment of HOAs as entry point for the EE rehabilitation of residential buildings. Cities involved in the support campaign: Cherkassy, Kiev, Kharkov, Izium, Blizniuki, etc.
Financing	A group of five banks have initiated a new market policy for delivering loans without collaterals and with low interest rates. The campaign will have chances of success.
	Commercial buildings in tourism sector have been proposed for EE rehabilitation and financing (EBRD, NEFCO).
	Recommended ESIB Rehabilitation has been accepted by the hotel owner

ESIB - Ukraine

Blizniuki of Kharkov oblast

INDICATOR	SAVING		COST	SIMPLE PAYBACK	NPV Q
Heating Square total 3562 m ²	kWh/ year	Euro/year	Euro	years	
Insulation of walls	486 219	1 648	21 673	18,8	0,33
Insulation of roofs	99 630	2 563	51 188	50,3	- 0,7
Total	585 849	3 636	87 675	24,1	

ESIB - Ukraine

Blizniuki of Kharkov oblast

Financing of the pilot project will be done as follows:

- The loan amounted to 509 774 UAH (+ 17% of bank interest rate) for one year period. From this amount:
- 100% of the loan will be paid by households
- 17% (bank interest rate) will be covered by Blizniuki settlement council



INDICATOR	SAVING		COST	SIMPLE PAYBACK	NPVQ
Heating Square total 3104 m2	kWh/ year	Euro/ year	Euro	years	
Insulation of walls	265 615	1 648	21 673	13,1	0,9
Insulation of roofs	427 740	2 563	51 188	19,9	0,26
Total	693 355	4 303	74 382	17,3	

ESIB – Next Steps

Energy Efficiency is a state strategic decision, governments have to undertake a driving role:

- Proper primary and secondary legislation
- Special Taxation regime for EE materials and technologies
- Facilitating financing measures

Unlikely individuals in the residential sector will initiate EE projects unless:

- Information campaigns let households understand the basic principles of energy efficiency
- Financing facilitation measures are in place
- New acting legislation introduce enforcement measures
- Issuance of the relevant new Norms and standards

ESIB



Thank you for attention