

RETROFITTING OF HOUSING AND ENERGY EFFICIENCY MEASURES

EXPERIENCE OF LITHUANIA



Daiva Matonienė

Former Vice-Minister of the Ministry of Environment in Lithuania

Member of EU CoR

Member of Šiauliai City Council in Lithuania

Expert of EU instruments TAIEX and Twinning

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75% of EU's housing stock is currently not energy efficient.



***Vice-President of Energy Union
Maroš Šefčovič***



THREE MAIN QUESTIONS



1. Why building renovation is so important in every country?

2. How to achieve the best result with limited resources?

3. What is the main reason for success?

RESIDENTIAL ENERGY EFFICIENCY



Lithuania key statistics:

- Population – approx. 3 mln.
- 66% of population lives in multi family buildings built before 1993
(> 38,000 multi family buildings and > 800,000 apartments)
- 97% privately owned, only 3% municipal rental stock
- 65% of buildings supplied by district heating system

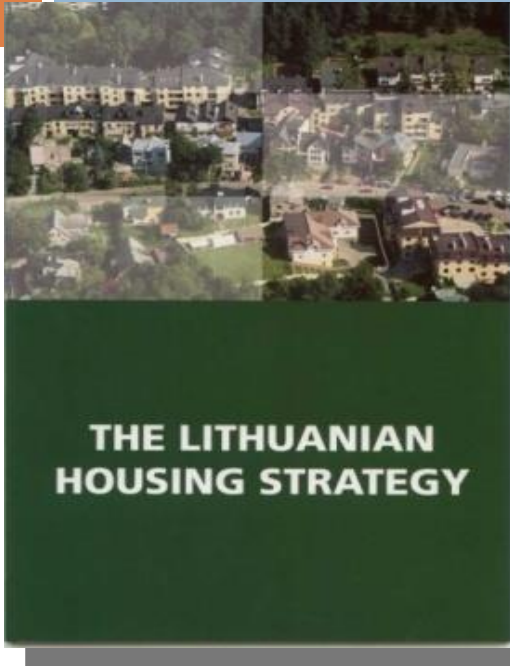
Problems:

- poor Soviet construction standards and little maintenance
 - inefficient heating systems and engineering equipment
 - bad quality windows, roofs, seals between panels
 - huge energy losses
- most buildings in poor condition, lack of proper management

> most of Lithuanian households are not satisfied with their homes



THE LITHUANIAN HOUSING STRATEGY



Approved at January 21, 2004 by the
Lithuanian Government
English version available
on the internet site www.am.lt

- Program for modernization of
multifamily buildings (approved in 2004)

- Program for social housing
development (approved in 2004)

Main goals are:

Expand housing possibilities for all
social groups

**Ensure effective use of existing
housing, maintenance, upgrading and
modernization, including the national
use of energy resources**

Strengthen the capacity of the housing
sector in the housing market

MULTI-APARTMENT BUILDINGS RENOVATION (MODERNISATION) PROGRAMME

Multi-apartment buildings renovation (modernisation) Programme approved by Government of Lithuania in 2004.

The Programme aimed to:

- ❑ increase energy efficiency in multi-apartment buildings;
- ❑ ensure that cumulative annual heating costs and return on investment cost after the renovation do not exceed the heating costs which was before renovation.



PROGRAMME MODELS (1)

There are two models for housing modernisation in Lithuania

1. Home owners on their own initiative prepare investment projects, take a loans and implement modernisation

The main problems of this model:

- lack of homeowners initiative
- fear to take a loan
- mistrust on the results after the upgrading



PROGRAMME MODELS (2)

2. Investment projects are implemented based on the Energy efficiency programmes approved by the municipalities :
 - investment projects are prepared on the municipality initiative;
 - projects are implemented by the Programme administrator appointed by the Municipality;
 - loan is taken by the Programme administrator;
 - programme administrator organizing procurement, taking all the responsibilities on the implementation and financial management.



JESSICA

New model was introduced at the beginning of 2013

NEW PROGRAMME PARTICIPANTS

□ **National:**

- Ministry of Environment / Ministry of Energy/ Ministry of Finance / JESSICA Holding Fund, managed by EIB
- Housing Energy Saving Agency (HESA)
- Financial institutions administering JESSICA funds (selected by JESSICA Holding Fund managed by EIB)
- Central Procurement Office (CPO)

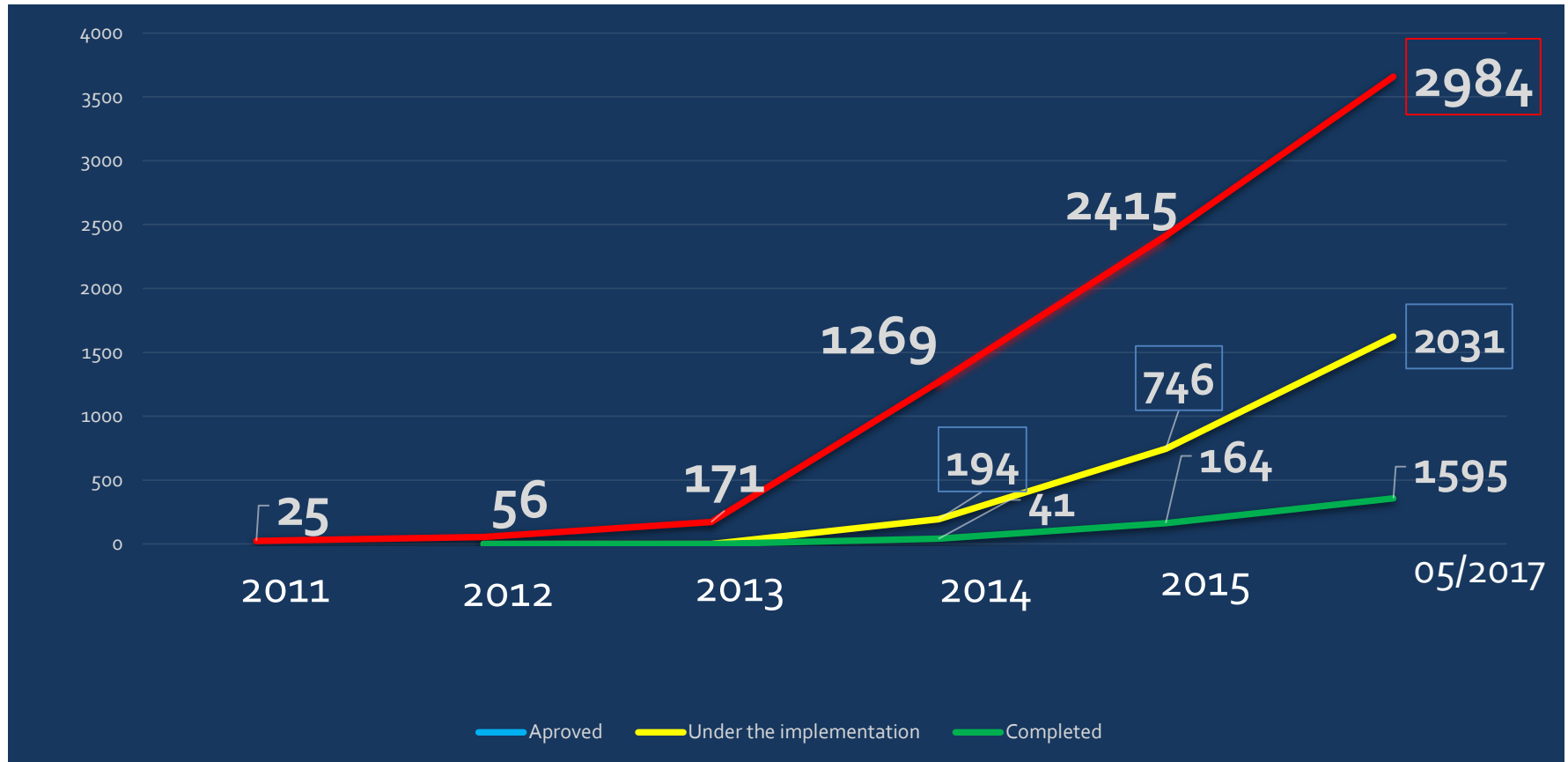
□ **Local:**

- *Municipalities* (Programme preparation, approval, appointment of Programme Administrator, supervision of implementation)
- *Programme administrators* (Housing Maintenance company or other responsible company)
- *Engineering – consultant companies* (Investment Project preparation, supervision of works)
- *Contractors , Home-owners*

LITHUANIAN SUCCESS FORMULA SINCE 2013-1595 BUILDINGS RENOVATED MORE THAN 2000 IN THE PROCESS



MULTI-APARTMENT BUILDINGS RENOVATION (MODERNISATION) PROGRAMME PROGRESS



Some examples Mazeikiu str. 3, Viekšniai

Year of construction: 1980

Number of apartment: 12

Heated area: 601 m²

Implemented: central gas boiler,
insulation of walls and roof,
installed heat cost allocators

Investment: EUR 172.000

**Energy savings: 79%,
Class B**



Some examples Vilties str. 18, Vilnius

Building built in 1964.

Number of apartments: 101

Heated area: 5.671 m²

Implemented: insulation of walls,
roof, windows replacement,
glazing of balconies,
modernization of heating system

Investment: EUR 608.000

Energy savings 70,14%
class B.



Some examples Marijonu str. 31, Panevezys



Year of construction: 1958

Number of apartment: 35

Heated area: 2525 m²

Implemented: central gas boiler, insulation of walls and roof, installed heat cost allocators, solar collector

Investment: EUR 384.000

Energy savings: 65%, Class B

Some examples Ozo str. 22, Vilnius



Year of construction: 1982

Number of apartment: 36

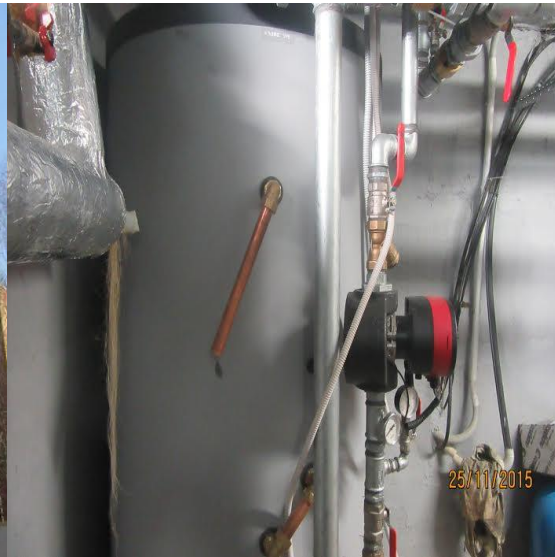
Heated area: 2305 m²

Implemented: insulation of walls and roof, glazing of balconies, windows replacement, modernized heating system (one pipe system into two pipes system, balancing)

Investment: EUR 326.000

**Energy savings 68%,
Class C**

Some examples Jaunimo str. 56, Alytus



Year of construction: 1980 Number of apartment: 22 . Heated area: 1227 m²

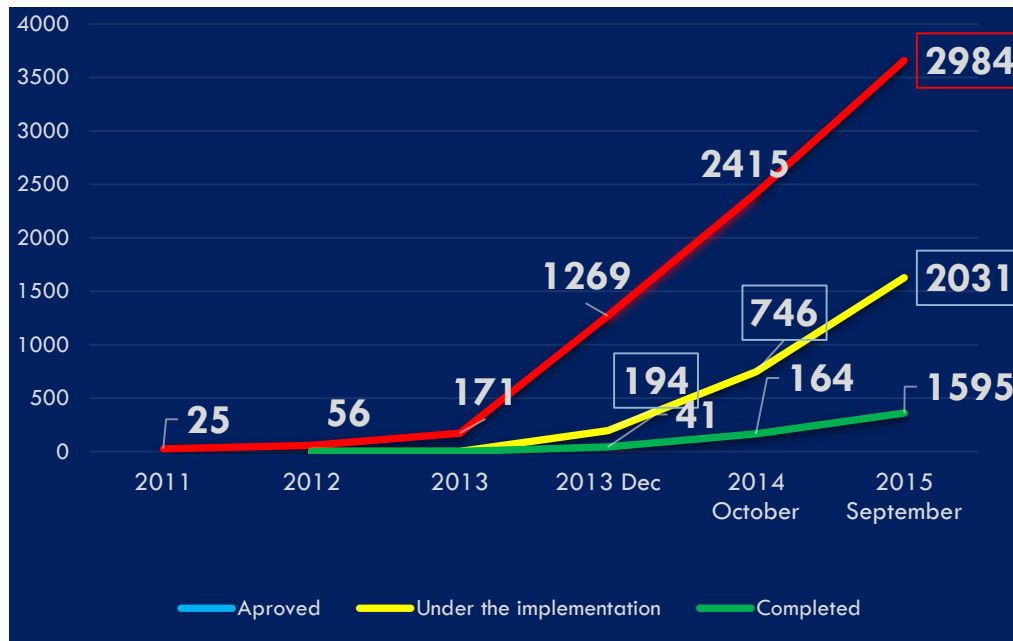
Implemented: central gas boiler, insulation of walls and roof, installed heat cost allocators, solar collector, heat pump

Investment: EUR 389.000

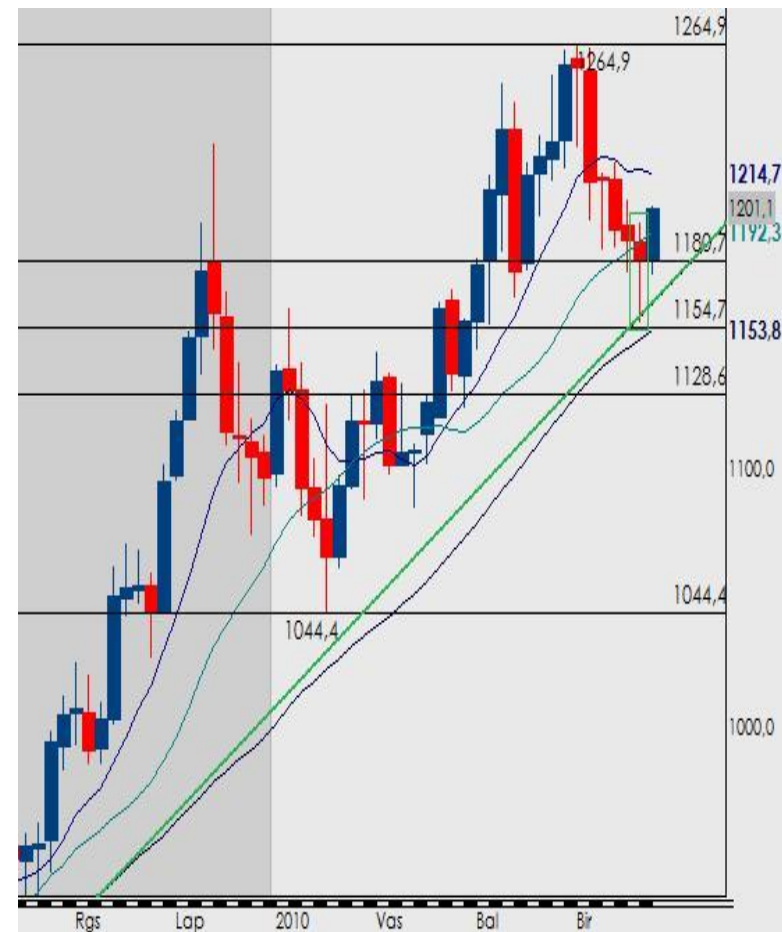
Energy savings 72%, Class B

WHY BUILDING RENOVATION IS SO IMPORTANT IN EVERY COUNTRY?

WHAT THE FIGURES SHOW?



**Energy efficiency
of buildings is a triple win!**



1. GOOD FOR HOME-OWNERS: GREATER COMFORT, LOWER BILLS, ADDED VALUE

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Experience from energy efficiency upgrading projects in multifamily buildings shows that a combination of measures:

- replacement of windows and external doors,
- insulation of external surfaces: roofs and walls,
- modernization of heating substations and balancing of heat systems

reduce energy consumption by around 50-70 %.



2. GOOD FOR THE COUNTRY'S ECONOMIC GROWTH

- ❑ The energy efficiency Programme investment value more than **700 million Euros** (*JESSICA Holding Fund with private investment of commercial banks, State budget*);
- ❑ Currently renovation projects are implemented by **300** small or medium construction companies (creates new jobs);
- ❑ Investments in the renovation process is about **10%** of the total investment in the construction sector in the country.



3. GOOD FOR PLANET: LOWER CARBON EMISSIONS, RESOURCE CONSERVATION

- After modernization possibility to reduce energy consumption up to 50- 70 %
- By implementing the Programme also are solved environmental protection issues (reduction CO² emission, urban environment, cities regeneration plans, etc.)

The analysis of implemented projects shows that after the building renovation savings are more than 100 MWh/year and reduction CO₂ - 23,4 t



2. HOW TO ACHIEVE THE BEST RESULT WITH LIMITED RESOURCES?



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POSITIVE SOLUTION – FINANCIAL INSTRUMENTS!

Continuity

Re-use

Attraction of private investments

Multiplication of investments

Lithuanian experience

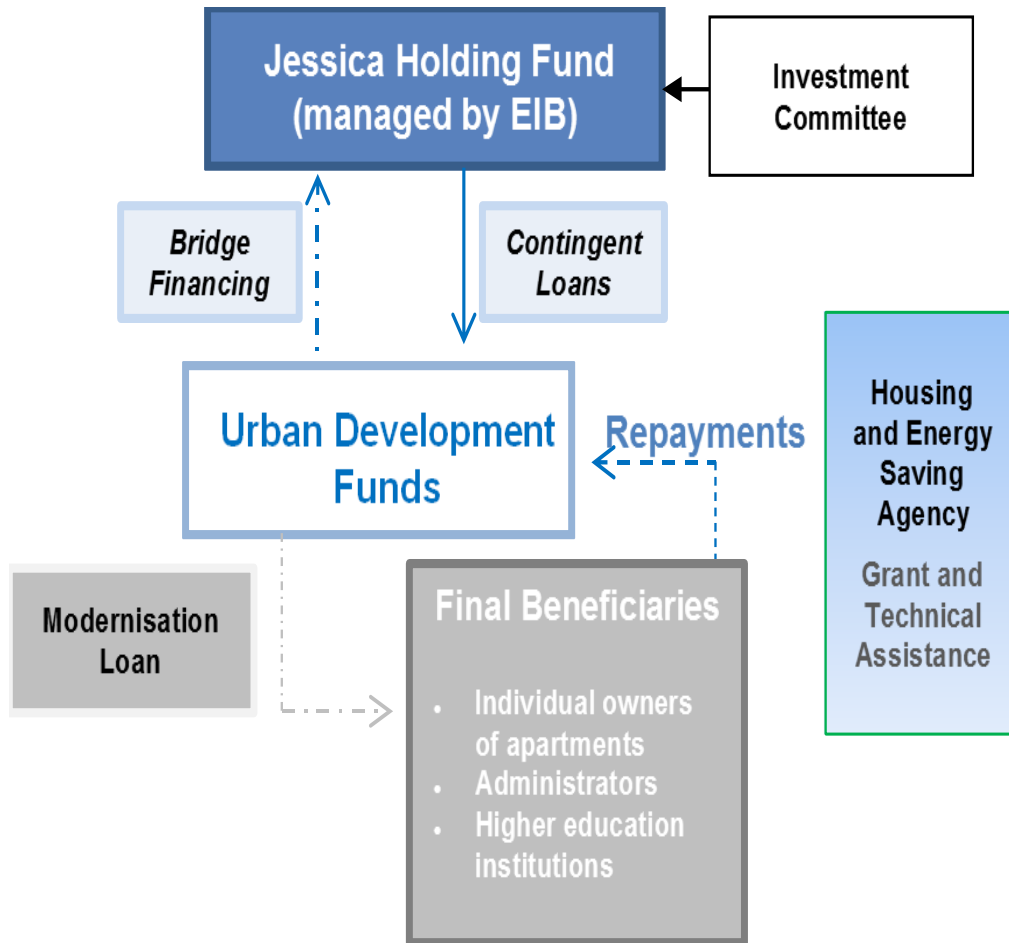
2007-2013 – first experience setting up Jessica for EE in residential housing, Jeremie for SMEs

2014-2020 – strategic focus on the continuation of established FIs and expansion to other sectors

Lithuania - one of the first countries in the European Union which uses the initiative of JESSICA for the improvement of **energy efficiency in multifamily buildings**.

JESSICA (*Joint European Support for Sustainable Investment in City Areas*) is an initiative of the European Commission in cooperation with the European Investment Bank (EIB) and the Council of Europe Development Bank (CEB) in order to promote sustainable investment and growth of jobs in Europe's urban areas.

JESSICA Fund in Lithuania 2007-2013



Signatures with Final Beneficiaries per source of

HOW THE JESSICA MECHANISM WAS SET UP?

Negotiations and signing of Financing Agreement with EIB to manage Investment Fund

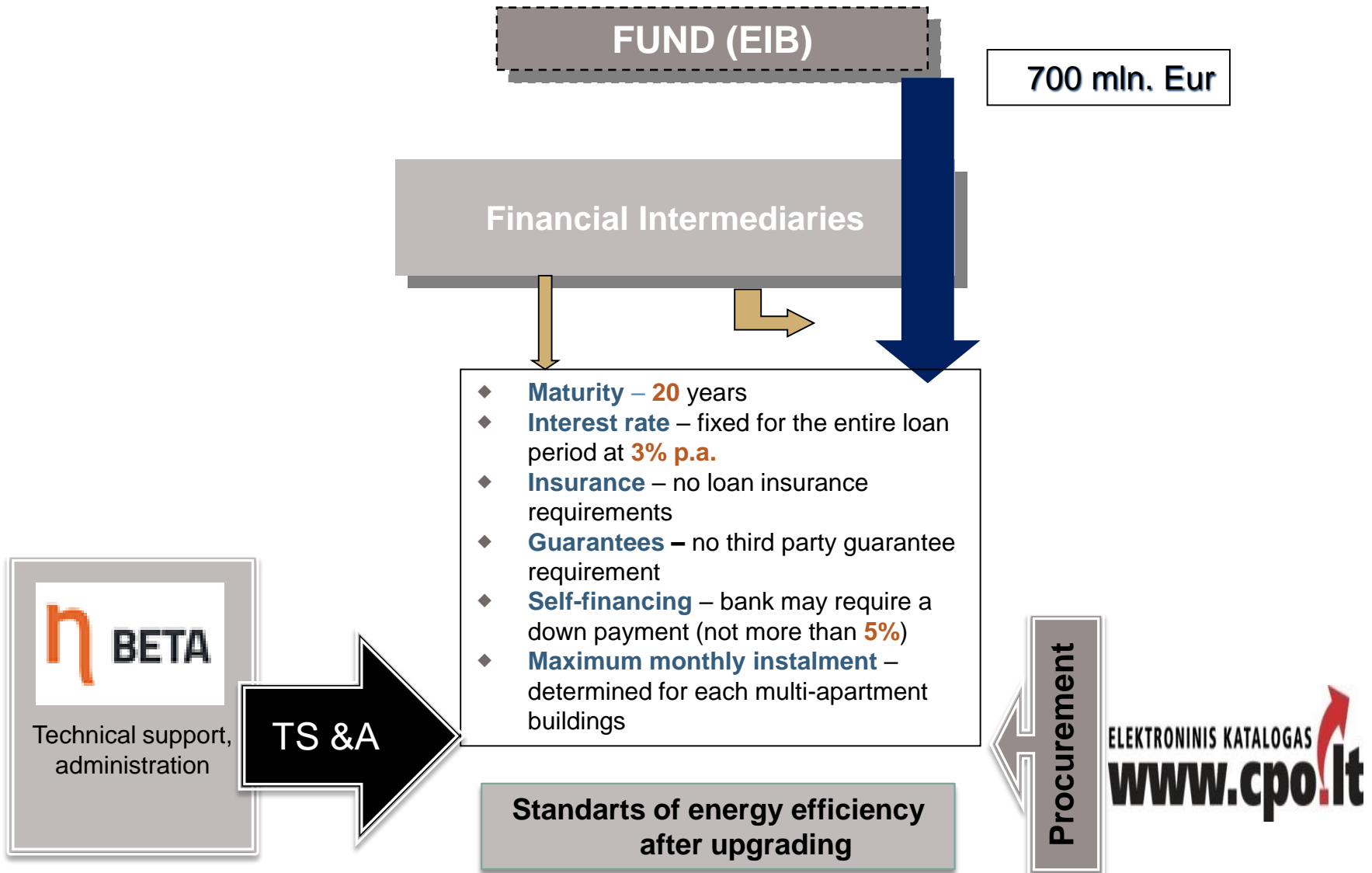
EIB for 1st call for Expressions of Interest

EIB selects financial intermediaries

← ~ 9 months

← 4 months →

JESICCA HOLDING FUND MODEL



FUND (EIB)

700 mln. Eur

Financial Intermediaries

- ◆ **Maturity** – 20 years
- ◆ **Interest rate** – fixed for the entire loan period at **3% p.a.**
- ◆ **Insurance** – no loan insurance requirements
- ◆ **Guarantees** – no third party guarantee requirement
- ◆ **Self-financing** – bank may require a down payment (not more than **5%**)
- ◆ **Maximum monthly instalment** – determined for each multi-apartment buildings

Standarts of energy efficiency after upgrading

h BETA

Technical support, administration

TS &A

Procurement

ELEKTRONINIS KATALOGAS
www.cpo.lt

FUNDING CONDITIONS FOR RENOVATION OF MULTI-APARTMENT BUILDINGS

Energy performance certificates

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- ◆ Majority of home-owners vote for modernisation **50%+1**
- ◆ Constructed before **1993**
- ◆ at least Energy Efficiency **Class C**
- ◆ **100%** of costs for technical documentation
- ◆ 15% of modernisation costs if at least **20% of energy savings** achieved
- ◆ additional **20%** if energy savings **40%** achieved (Climate Change Programme support)
- ◆ **100%** of all costs for low income households

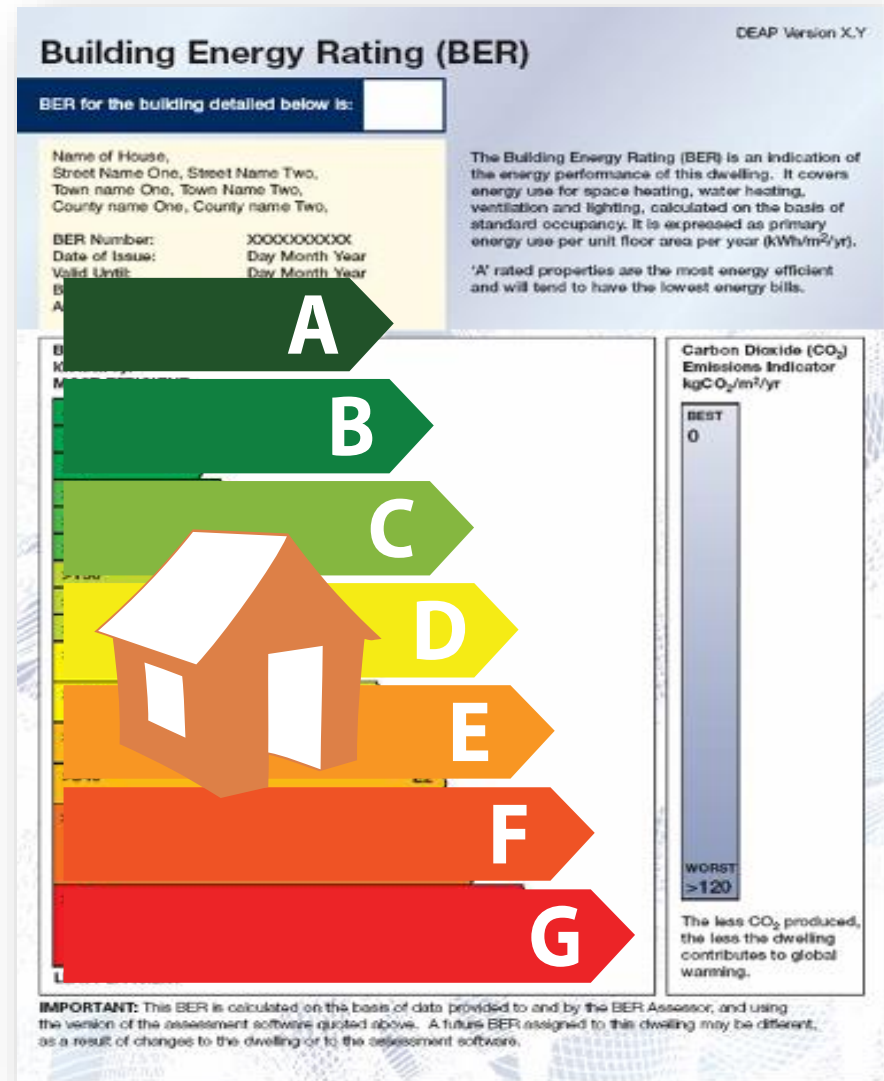
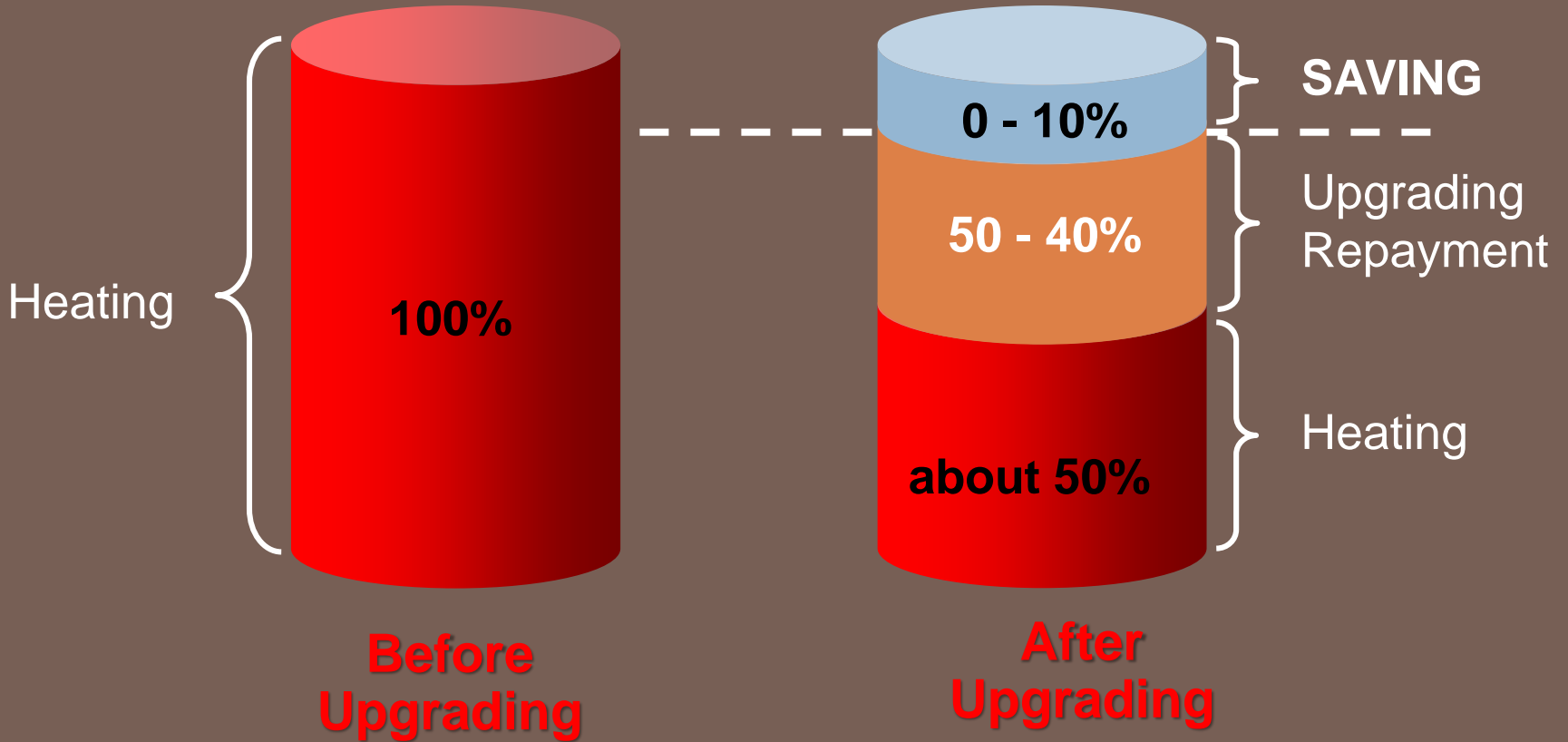


Fig.1



No additional payments to owners of apartments after the upgrading

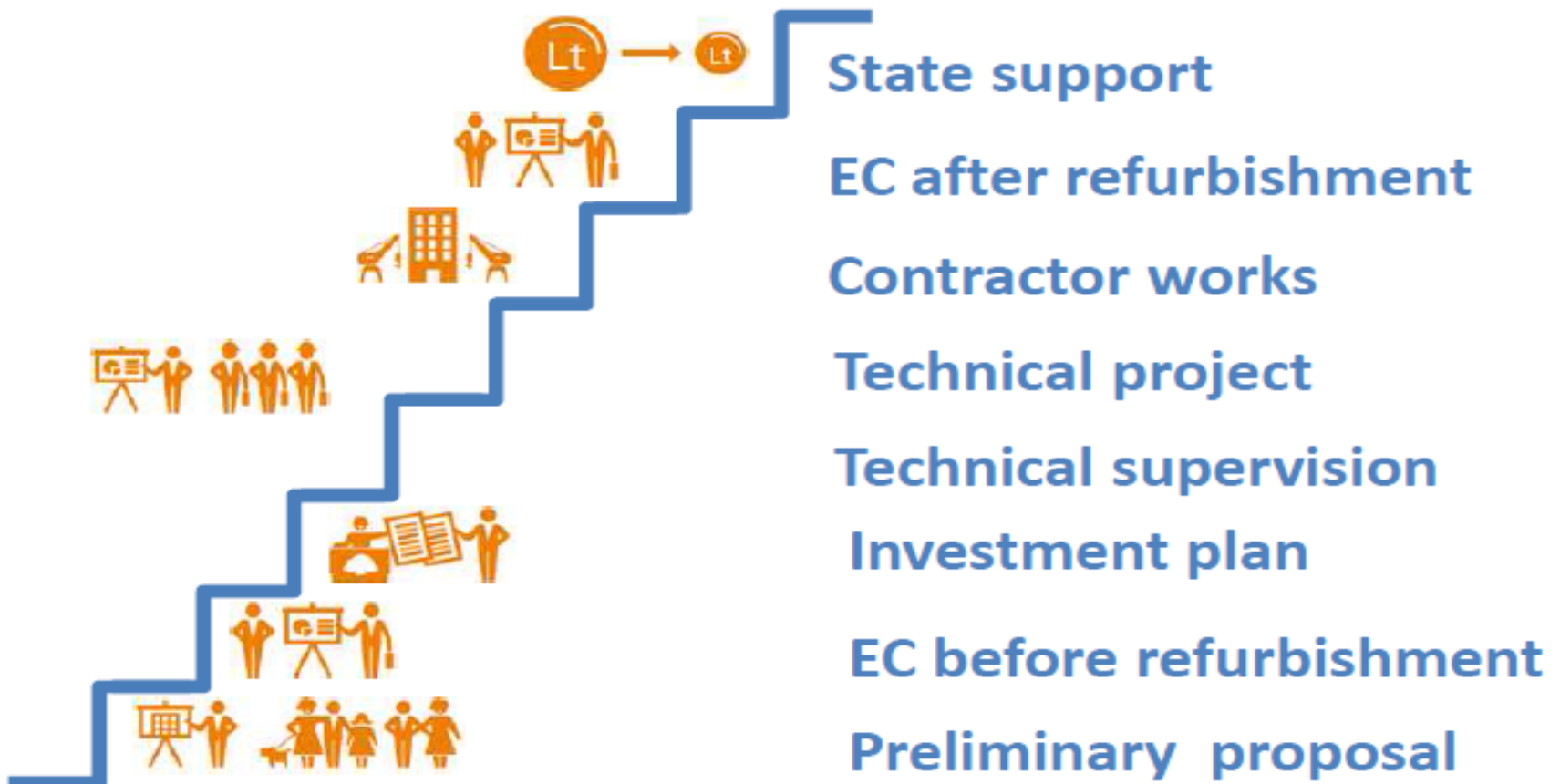
No collateral, however:

Statutory protection mechanism which may have an effect of quasi-security:

- ✓ The loans **are included into the register of legal persons;**
- ✓ In case of sale of the apartment, under the law, the proceeds must **firstly be used to cover outstanding amounts of the loan.** This is ensured through notarization of the sale agreement;
- ✓ The payments under the modernization loans for the highest-risk final beneficiaries (**socially disadvantaged persons**) are **100% covered by the State.**

HOW IT WORKS FROM BENEFICIARIES SIDE?

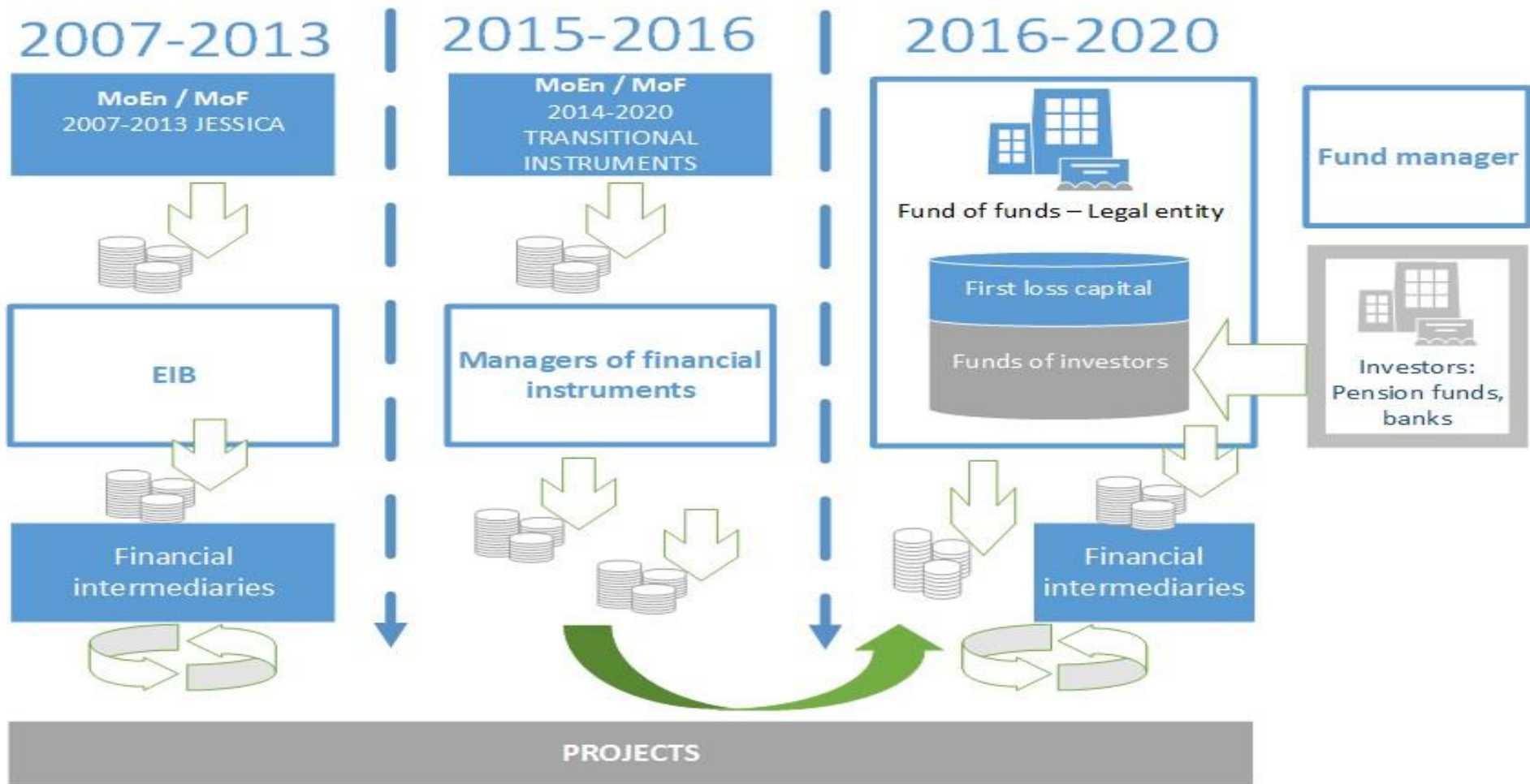
Financial mechanism. Process



BIG DISAPPOINTMENT: THE PROGRAM DIDN'T FLY...

- Chronic distrust of population in Government;
- Failed public relations program;
- Apartment owners poorly organized;
- Large share of owners on fixed income;
- Many low income people were eligible for heating bill compensations, and had no incentive to join the program.

WHAT NEXT IN 2014-2020?



DESIGN AND SET-UP

2007-2013 Jessica Holding Fund

- Enabled efficient management of multiple Financial Intermediaries and managed to attract private financing
- Considered to be a success, with demand for financing outstripping supply
- Strong momentum has been established with the project pipeline continuing to expand

• 2014-2020 Jessica II Fund of Funds

- Guaranteed continuation of the governmental programme and existing project pipeline
- Attracted more financing from the Financial Intermediaries

• 2014-2020 Leveraged Fund

- A guarantee financial instrument structured to attract additional funds from private sources
- Expected leverage of 1:5

JESSICA 2014-2020 STRUCTURE

Fund of Funds Lithuania (2014-2020)

- *Ex-ante* finished in December 2014.
- **Continues** objectives of JESSICA Holding Fund in the new 2014-2020 programming period.
- Fund of Funds established in **May 2015** with **EUR 150m** of ESIF funds – EIB's first mandate for DFIs.



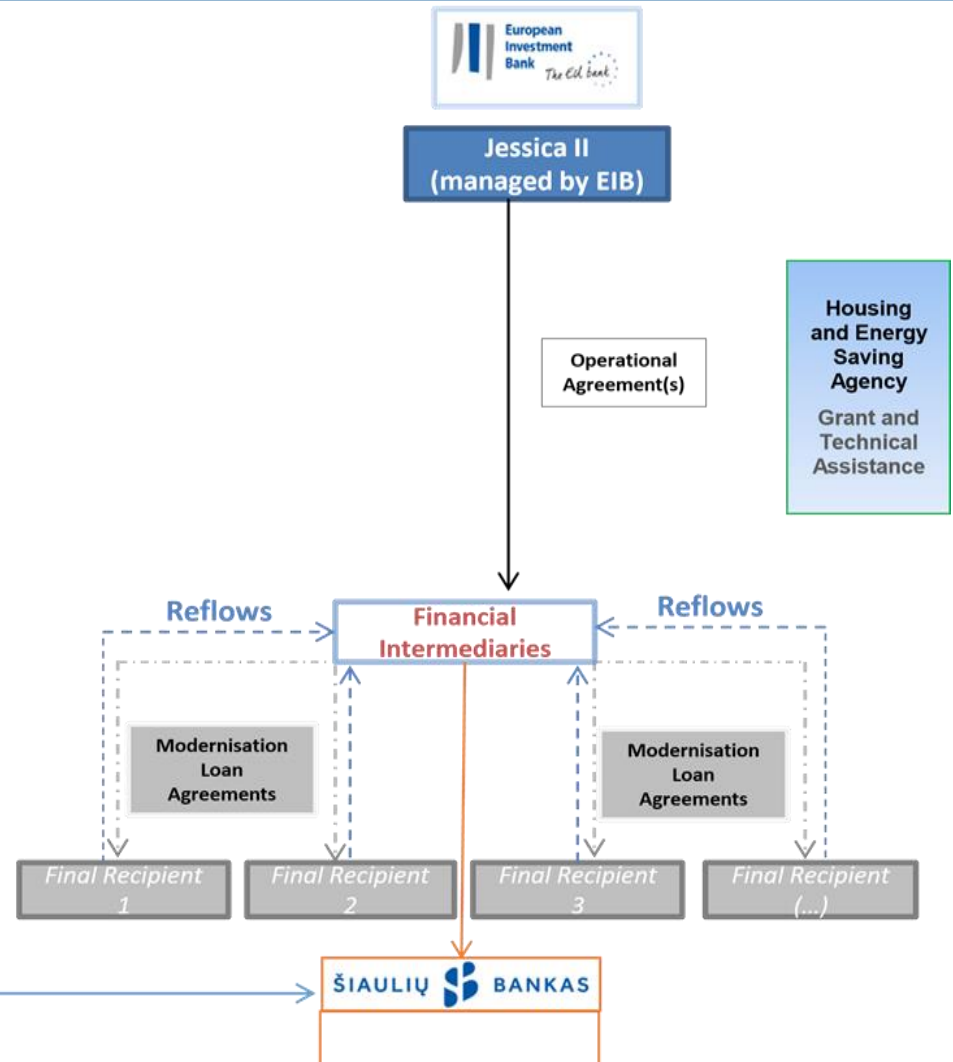
1st and 2nd Selection Procedures results:

In total **EUR 178m** of ESIF and pre-financing signed with Šiaulių bankas

Up to **EUR 120m** under negotiations with the FIs

Results as of September 2016:

550 projects (circa **13,200** households) signed for **EUR 147m** and circa **EUR 92m** disbursed



JESSICA HOLDING FUND IN LITHUANIA FOR SUSTAINABLE INVESTMENT IN CITY AREAS

Environmental

Stimulate sustainable development, reduce energy pollution

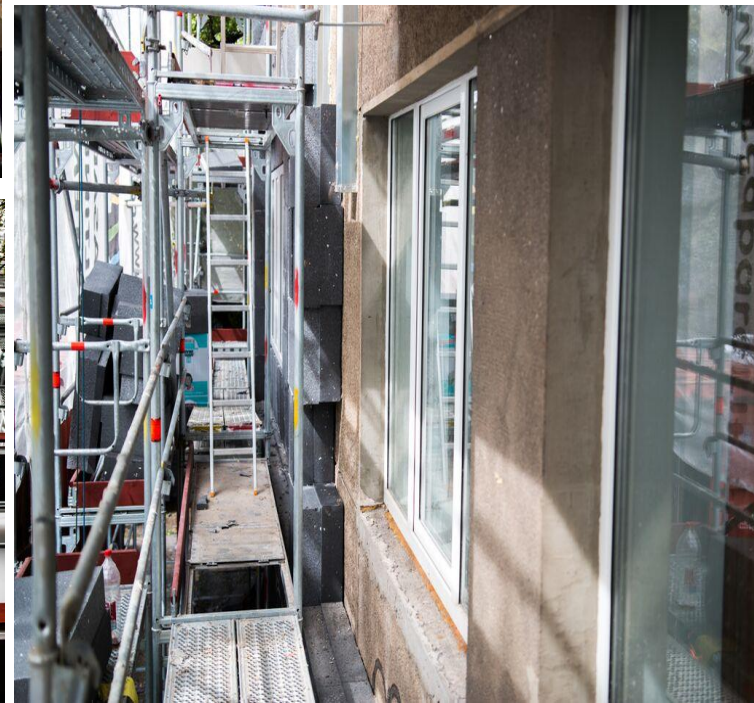
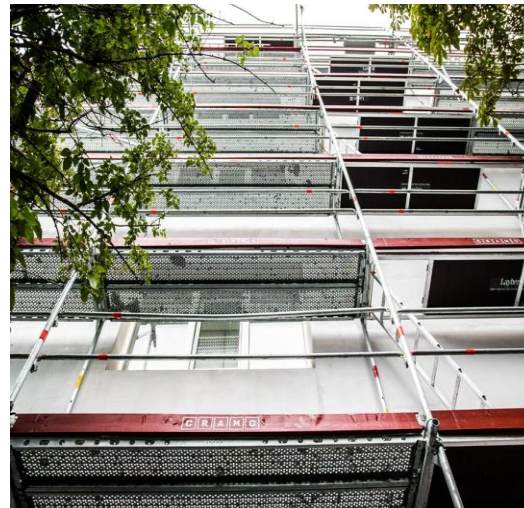
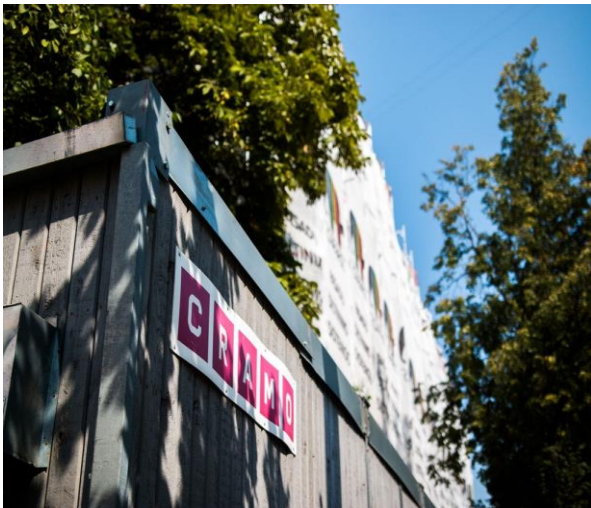
Social cohesion

Contribute to higher quality of life and public environment

Economic

Generate substantial savings of households in the medium term

PERSPECTIVES- INOVATION AND HIGHER ENERGY EFFICIENCY CLASS



PERSPECTIVES- QUATER RENOVATION

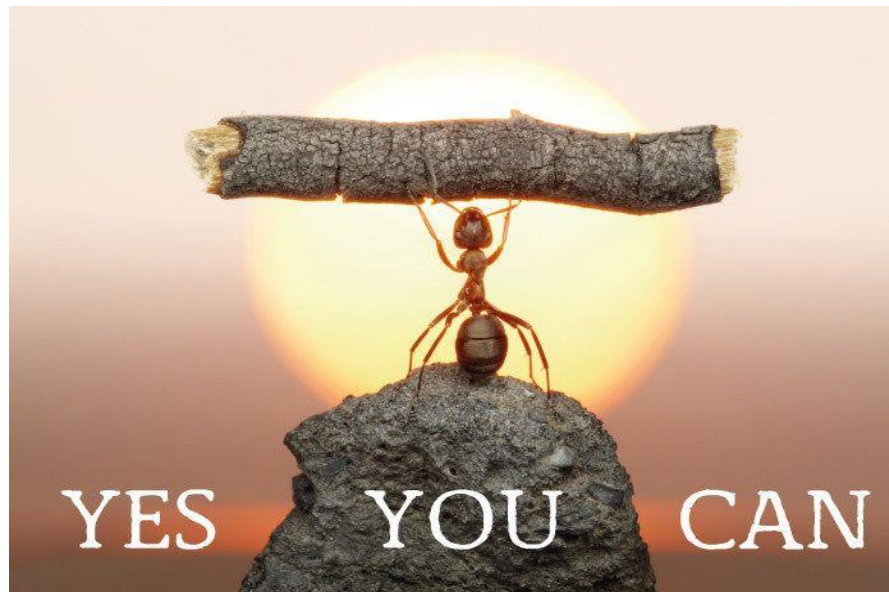
In order to the Energy efficiency improvement programs to include not only the renovation of separate houses or public buildings, but also upgrade the entire neighborhoods and their environment, as well as infrastructure, in the near future **it is expected quarter renovation project**



IT IS GOOD IDEAS, BUT IS IT POSSIBLE TO DO?

Whether you think that you can, or you think you will not be able to do, both options are correct“

Henry Ford



3. WHAT IS THE MAIN REASON FOR SUCCESS?



REAL COOPERATION WITH MUNICIPALITIES

Partnership and team work is the main condition for success.

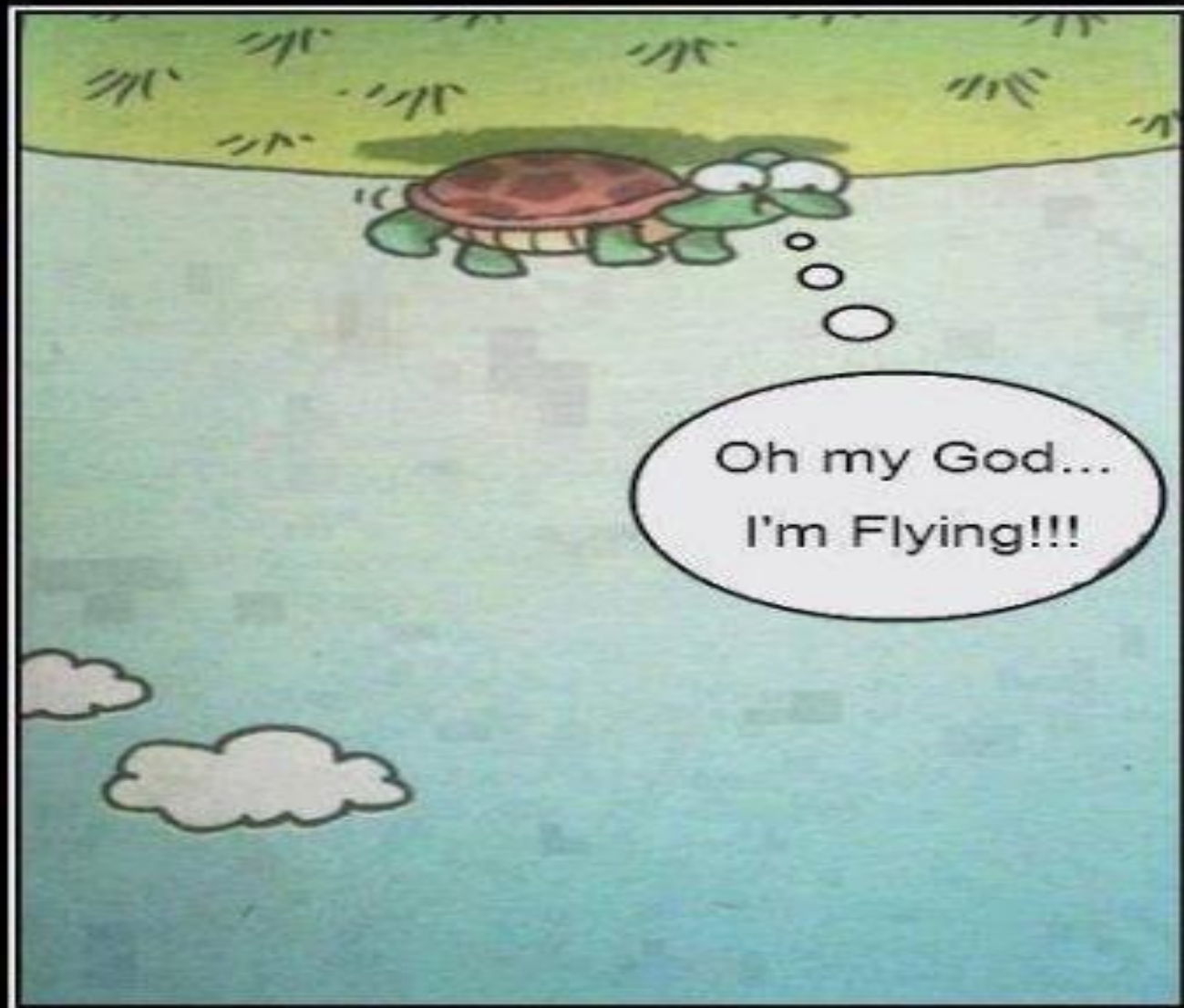
Local and regional authorities are **the key players where theory is moving to practice**, place there legal requirements becomes practical actions with visible results.



SUITABLE FINANCIAL INSTRUMENT/MODEL



- ✓ **No additional payments** to owners of apartments after the upgrading (energy savings 40-70 %);
- ✓ **100%** of all costs covered for **low income households**;
- ✓ If **low income households vote against** renovation they **take away compensation** for heating.
- ✓ **No collateral** is required.



Optimism is the best
Way to see life

I am an optimist. I have no ideas what is the reason to be something else.



Winston Churchill

**THANK YOU VERY MUCH FOR YOUR
ATTENTION !**



d.matoniene@gmail.com

Tel.: +370 686 01710