LITHUANIAN HOUSING MODERNIZATION PROGRAM

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Lithuanian key statistics

- situated in Northen Europe
- average temperature are -5°C in winter and +17°C in summer
- population - 3 mill.

- inflation in 2015 – "-0,6%"; expected in 2016 – "+1,4%"
- GDP growth in 2016 (expected) 2,9%

- 66% of population lives in multi apartment 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

energy efficiency improvement in multi-apartment buildings

Multi-apartment buildings renovation (modernization) program

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

The Programme aimed to:

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

Renovation Programe – priority programme of the Government of Lithuania

Programme models implemented now (1)

There are two models for the modernisation of multi-apartment buildings 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 implemented now (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

this program model was introduced at the beginning of 2013

institutional
program participants

NATIONAL:

- Ministry of Environment, Ministry of Finance (Investment Committee)
- Housing Energy Efficiency Agency (BETA)
- Revolving fund (Jessica)
- Financial institutions
- Central Procurement Office (CPO)

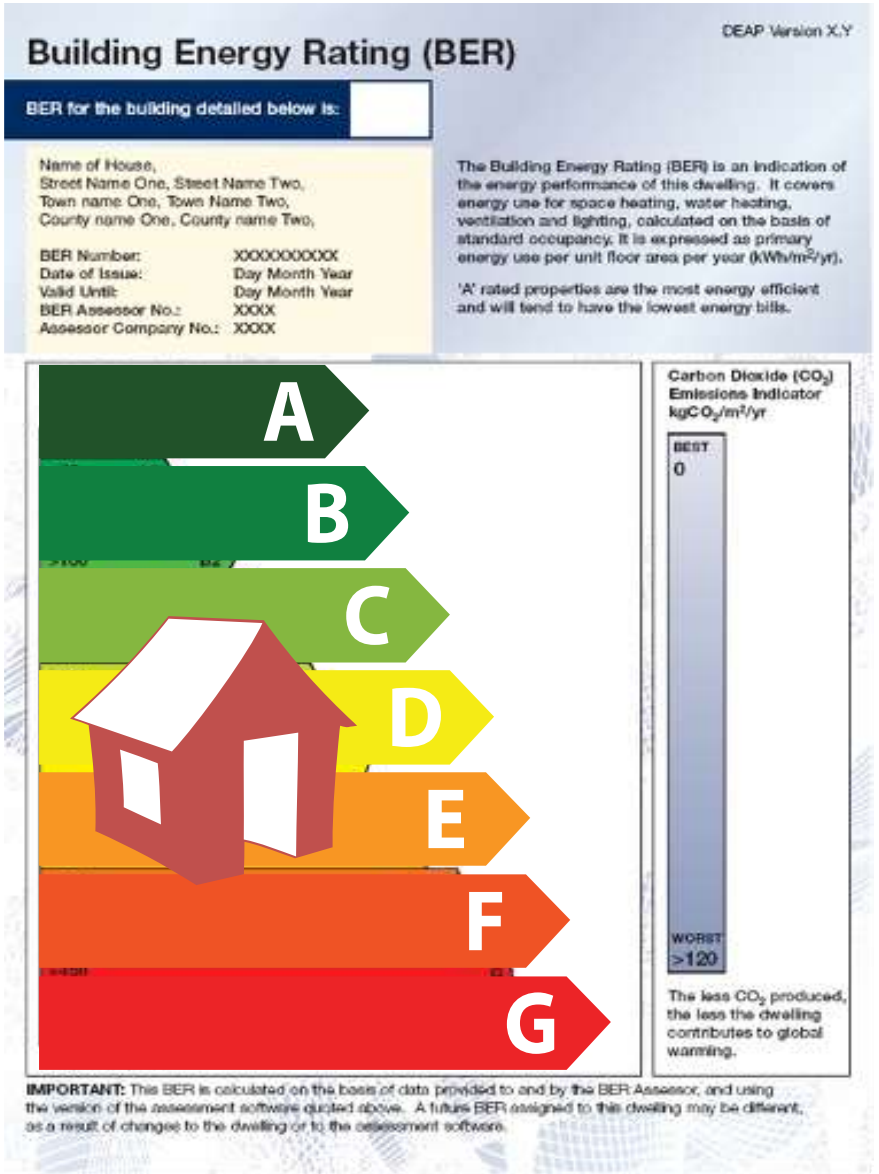
LOCAL:

- Municipality (inefficient building selection, Program preparation, appointing Program administrator, supervision)
- Program/ project administrator (appointed by Municipality or homeowners)
- Engineers consultants (preparation of investment projects, support on procurement and supervision of works)
- Contractors
- Owners of apartments

Funding conditions:

- Constructed before 1993
- Energy audit + energy performance certificate + investment project required
- Majority of owners vote for modernisation 50%+1
- at least Energy Efficiency Class C
- 100% (50% starting 2017/01/01) of costs for technical documentation
- 15% of modernisation costs if energy savings 20%
- Additional 20% of modernization costs if achieved energy savings 40% or more (Climate change programme)
- 100% of all costs for low income households

Energy performance certificates



capacity building programs by BETA

BETA organized hundreds of training courses and seminars to the program participants (to the owners of apartments, municipalities, project administrators, contractors, supervisors of works, etc.) :

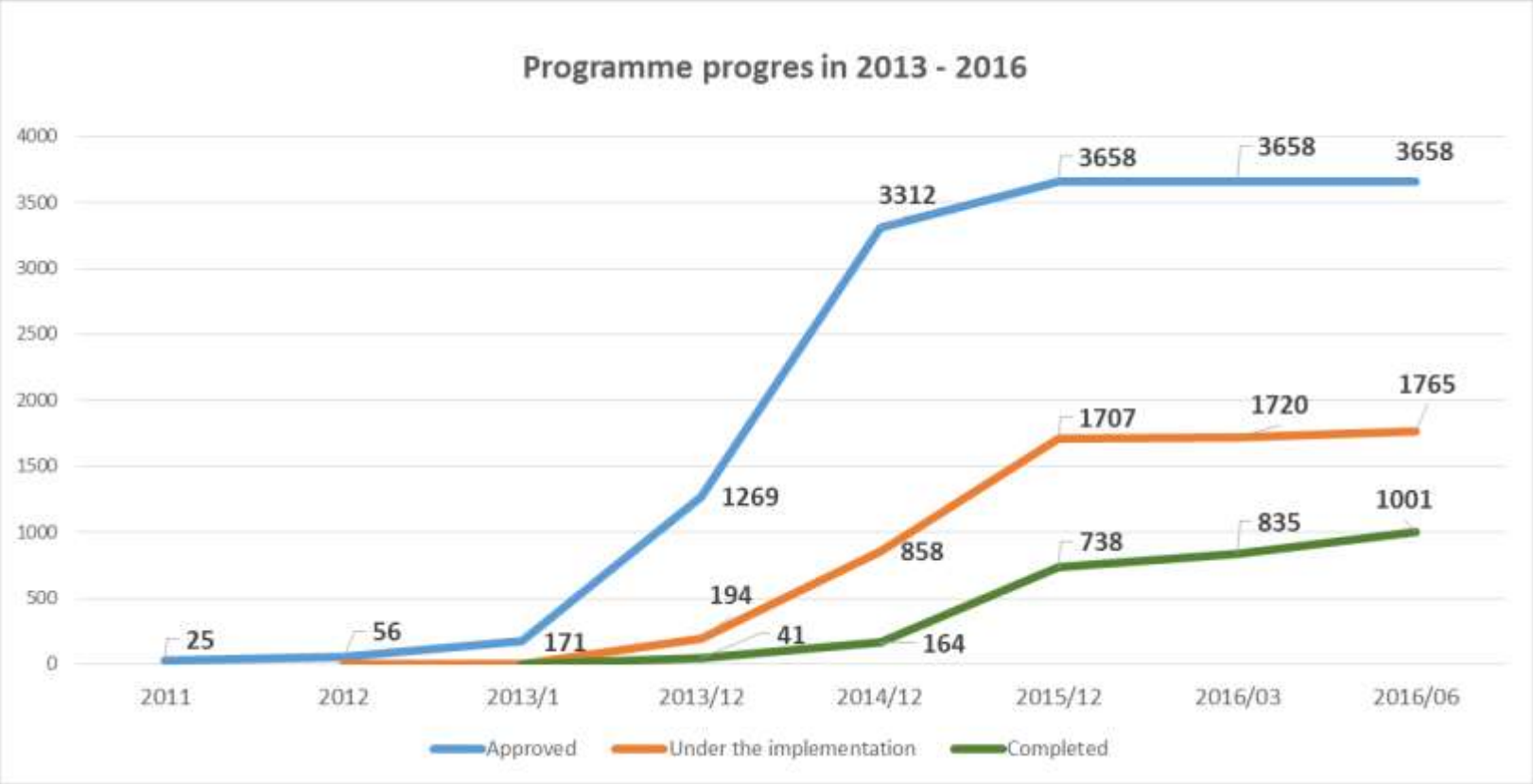
- on the project implementation procedures
- on procurement specific issues
- on quality control
- on financial management
- etc.

public information activities on program implementation

BETA organizing wide public information campaign via TV, radio, national and local press,

To encourage Municipalities to be more active annually are organized Mayors meetings on the program implementation results

Renovation program results (1)



- since 2013 approved **3.658** projects for multi - apartment buildings renovation
- currently **1.765** multi - apartment buildings are being upgraded
- since 2013 completed **1.001** projects
- since 2004 completed about **1.500** projects

More than 70% renovation projects are implemented by the Municipal programs
(Municipal entities acting as a borrowers)

Renovation program results (2)

- The energy efficiency Programme investment value - more than **520 million EUR** (JESSICA Holding Fund with private investment of commercial banks, State budget)
- Currently renovation projects are implemented by more than **300** small or medium construction companies (creates new jobs)
- The energy efficiency Programme improves living environment and enhance public safety

JESSICA Holding fund

After the implementation of energy saving measures - energy consumption decreases 50 % or more

some examples *Mazeikiu str. 3, Vieksniai*

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 *g.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

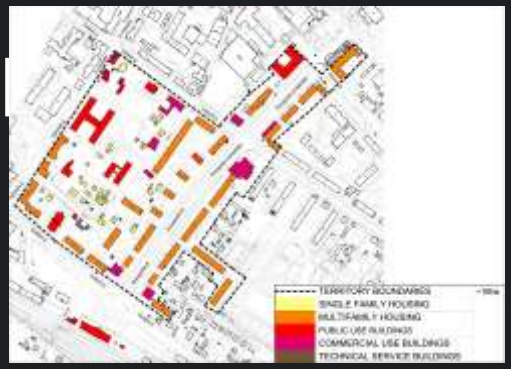
Energy savings 72%,
Class B

Actual results after the renovation

123 buildings after the renovation were monitored in 2015 by evaluating of actual energy savings

Number of renovated buildings	123
Energy savings in GWh per year	12,50
Reduction of CO_2 emission t/year	2.900
Average savings for one renovated building (MWh/ per building/ per year)	101,66

After the implementation of energy saving measures - energy consumption decreases by 50 % - 80 %



Strategy for the future energy efficiency improvement

Energy Efficient Renewal of Urban Areas – best solution for the Cities and for the Country

Renovation of public buildings through the energy efficiency programs

Taking the advantages of the new program (for now it is used to renovate multi-apartment buildings only), according to the same model it is planned to renovate the municipal public buildings also:

- **Municipalities** and their appointed administrators already have enough competence and experience to ensure fluent management of public buildings renovation

- **Municipalities** have more possibilities to expand energy efficiency programs with new instruments, they will move gradually towards to complete preparation and implementation of energy efficiency measures

Next objectives and their implementation

In order to increase energy efficiency not only in individual buildings but across the cities, municipalities are encouraged to prepare programs for energy efficiency renewable of urban areas by combining different measures and instruments:

1. renovation of multi-apartment buildings
2. renovation of public buildings
3. Modernization of street lightening and other engineering infrastructure

Energy efficiency programs are a base of the municipal energy sector development and three demonstration projects in three municipalities already started with implementation


BETA