

Beyond Energy Action Strategies



D.3.1.c – Business Plan - Energy Efficiency in Multiresidential Buildings, Zemgale region, Latvia

Title of the project: Energy Efficiency in Multiresidential Buildings
Location: Zemgale region, Latvia



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1 Summary of the Project/Project at a Glance

Promotion of EE refurbishment of multi-residential buildings to improve their energy efficiency.

In Latvia and Zemgale region majority of multiresidential houses are built in 1960 – 70ties and are not energy efficient, consuming about 60% of the total energy thus having the highest potential of energy saving and reduction of CO2 and associated emissions. The process is at its very outset with about 3% of the living fund currently renovated in Latvia. In Zemgale region, in particular, the residential building sector was the primary source of CO2 emissions with a total of 115 000 tonnes in 2009. On average after refurbishment of the building a 40%-60% of energy saving is achieved thus decreasing the associated CO2 emissions.

The project idea – to provide continuous promotion of EE refurbishments of multiresidential buildings and support to the owners of multiresidential buildings at local and regional level. In 2014 ZREA continued this work with the previous Latvia National support programme “Improvement of energy efficiency matters in multiresidential buildings” (2009 – 2013) by helping house maintenance companies to complete the renovations and by providing seminars to the apartment owners on general necessity to carry out the EE refurbishments of their houses.

In the new planning period 2014 - 2020, a new National support mechanism for refurbishment of buildings will be available from October 2015. Interest of owners of multiresidential buildings has slightly grown but is insufficient, therefore ZREA shall promote the new support scheme to foster process of refurbishment of multiresidential buildings.

2 Details of the Proposed Project

Objectives:

To promote refurbishment of multiresidential buildings by raising awareness of their owners and society in common about possibility to obtain the support of National programme and accomplish the reconstruction, to provide consultations to individuals and house maintenance companies or societies. Objectives of implementation of energy efficiency projects are to reduce energy consumption and costs, to reduce GHG emissions, to renovate the living fund.

Within the project the apartment owners will be informed on the new financial support conditions, encouraged to use the new programme, to refurbish their buildings, encouraged to count that even the support rate is lower than in the previous programme, the refurbishment is still beneficial to them, all the benefits will be highlighted.

The new support program from the operational program “Growth and Jobs” 1st call “Energy efficiency measures in residential buildings” of specific support, objective “Promotion of energy efficiency investments in the public and residential buildings” for energy efficiency improvement

measures is to be launched in October 2015, for which ZREA will provide all the possible regional and local support.

ZREA will focus on 5 municipalities of Zemgale region, which are ZREA members: Jelgava city, Jekabpils city, Ozolnieku county, Bauska county and Auce county. In total there are 134 000 inhabitants in the 5 municipalities.

In the 5 municipalities of Zemgale region there are about 40 391 multiresidential buildings, these are potential buildings for energy efficiency improvement. In the 1st phase of the National programme 229 project applications have been submitted from the whole Zemgale region (22 municipalities), of which approved contracts including completed renovations are 130. Currently in 5 municipalities of Zemgale region refurbishment of 39 multiresidential buildings has been completed.

Within BEAST project the planned time frame for implementation of this project activity is 3 years from 2014 to 2017, the activities comprise:

- 1) Workgroup meetings (at least 3) to design the informative campaign
- 2) Capacity building seminars for house maintenance companies
- 3) Informative campaign (at least 10 seminars)
- 4) Individual advice and support in preparation of project applications.

Informative campaign - the apartment owners will be informed on the new financial support conditions, encouraged to use the new programme, to refurbish their buildings, the benefits will be highlighted, such as per 40-60% reduced heating bills, increased thermal comfort etc.

The cost of the activities within BEAST project - 7872 EUR.

The actual refurbishment (after with ZREA support the decision is made and project application is ready) will be partly covered by the programme "Promotion of energy efficiency investments in the public and residential buildings".

The apartment owners who will decide to carry out the refurbishment they will have to apply to the bank for the loan to carry out the refurbishment. Bank will either approve the refurbishment project for funding – e.g loan or will send the apartment owners to Development Finance institution "Altum" (stock company - which will be manager /evaluator/implementer of the whole programme. Who will provide the low cost loan (2% + Euribor) if banks will not be ready to finance it.

From all the eligible costs of EE refurbishment the project can get reimbursed the grant to the extent of:

If the loan has been provided by Altum then the grant amount is:

25%, if the heat consumption after the EE refurbishment is 81 - 90 kWh/m² year

30%, if the heat consumption after the EE refurbishment 71 - 80 kWh/m² year

35%, if the heat consumption after the EE refurbishment 70 kWh/m² year

If the loan has been provided by other financing body then the grant is

36%, if the heat consumption after the EE refurbishment is 81 - 90 kWh/m² year

43%, if the heat consumption after the EE refurbishment 71 - 80 kWh/m² year

50%, if the heat consumption after the EE refurbishment 70 kWh/m² year

Complex refurbishment of multiresidential building in most cases involves the following measures:

1. Application of the thermal insulation to the external walls.
2. Application of the thermal insulation to the external walls of the basement
3. Application of the thermal insulation to the basement ceiling
4. Application of the thermal insulation to the roof or the ceiling of the top floor
5. Substitution of glass blocks with the aerated concrete blocks, change of doors in stair cases, installation of door shutting devices, change of windows in basement, flats and workshops (where it has not been done before) to energy efficient windows
6. Improvement / cleaning of ventilation/air shaft, modernisation of heating systems , including installation of thermoregulators and allocators and heating supply systems (Improvement of pipe insulation), renovation and insulation of hot water system, change of risers etc. - in accordance with the requirements of Energy Audit and Technical Design.

Expected results

Increased number of refurbished energy efficient multiresidential buildings with reached energy & cost savings for at least 40%.

3 Internal aspects

The strengths

- Planned Energy Efficiency Programme, available energy advice - National support programme for EE measures in multiresidential building to be announced in 2015, available advice from energy agencies, house maintenance companies, ESCO companies at regional and local level.
- High energy saving rate (40-60%) as a result of energy efficient refurbishment of multiresidential house - As per experience, usually after the EE refurbishment of a multiresidential building an energy saving of 40-60% is achieved, thus reducing the consumed energy and the energy bill per this percentage.

Weaknesses

- Administrative burden - until now starting of the refurbishment project implementation was burdened by very slow project application evaluation, coordination and confirmation of changes.

- Low payment capacity - majority of residents of the multiresidential buildings are restricted in their regular income, biggest part of which is spent for daily needs. For a part of residents of multiresidential buildings where decision on refurbishment has been made, it is difficult to take and pay for loans, especially if high interest rates are applied. Often this is reason for refusing to vote positively for refurbishment of the building.
- Insufficient knowledge and understanding of apartment owners on the need for EE refurbishment - majority of flat owners lack information and understanding on the benefits and needs of measures to be taken for refurbishment of the building - to reduce their monthly costs for energy, to reduce the GHG emissions, to prolong lifetime of the building. In many cases there is high level of unwillingness to understand and to hear information.
- Low technical quality of some refurbishments discourage next houses from refurbishment - due to Latvia procurement legislation in many cases as the low price is the dominant selection criteria for the selection of the construction company and awarding the work contract, the cheapest and not the highest quality proposals win the bid, do the EE refurbishment at low quality and give wrong impression of the EE refurbishment itself.

4 External environment

The threats

- Low bankability rate of many such projects as per the banks' assessments - Even if the residents/ apartment owners vote for the EE renovation of the multiresidential building, in number of cases banks assess it as high risk loan: 1) if the house is out of the city, 2) if more than 25% of the house apartment owners are pensioners, 3) if the support to renovation is just over 50%.

Opportunities

- Opportunity of evidence of good examples of the already refurbished multiresidential buildings - The opportunity - as more and more buildings are renovated, the belief in EE refurbishment grows stronger, the positive experiences just have to be advertised and emphasized
- Mature energy efficiency solutions - There are many technical solutions available for energy efficiency measures to buildings, their price and sustainability has to be taken into account when setting the EE refurbishment measures.

5 Market Potential

There are enough banks to provide loans, there has been support from the national programme previously for EE refurbishment of multiresidential buildings and is planned to be from October

2015-2020. There are enough construction companies to be able to provide implementation of EE refurbishment in multiresidential buildings (on average - 10 bidders/construction companies per one procured house for refurbishment) for A lot has been done in the previous refurbishment programme 2009-2013, the map of refurbished houses can be seen here.

<https://www.google.com/maps/d/viewer?mid=zDrGv9JHde0k.k1y08oP1Ier4>

Nevertheless it constitutes less than 3% of refurbished multiresidential houses from all this stock, so there is need for this type of programme as well as support to the ESCO type refurbishments which is also foreseen to be supported in the planning period 2014 -2020.

Also the threat hindering the previous programme – that banks were reluctant to finance EE refurbishments of houses in country side and more remote areas basing on assumptions that people tend to move to cities, has been neutralised with the new programme, where such houses can apply for financing to Altum finance instrument.

6 Risk analysis

- Administrative risks - slow and inflexible project application evaluation, coordination and confirmation of changes.
- Low payment capacity – some of the apartment owners are not capable to pay the loan undertaken and might be set out from their house by court trial, which might cause negative effect on overall attitude to EE refurbishments.
- Low technical quality of some refurbishments discourage next houses from refurbishment - due to Latvia procurement legislation in many cases as the low price is the dominant selection criteria for the selection of the construction company and awarding the work contract, the cheapest and not the highest quality proposals win the bid, do the EE refurbishment at low quality and give wrong impression of the EE refurbishment itself.

7 Financial Analysis

7.1 Cost

The payments for heating is one of the largest expenses for Latvia households in cold season – 6 months. As per experience gained in the previous National programme supporting EE refurbishments of multiresidential houses, on average after refurbishment the energy saving and subsequent cut in heating bills is 40-60%. Depending on costs of construction works and the cost of loans (interest rates) the return of investment is from 10 -16 years.

The average cost of refurbishment of 60 apartments house (average) has been about 400 000 EUR in 2014 which is about 155 EUR/m².

It is planned that from 2015-2020 the apartment owners who will decide on EE renovation can obtain a loan in some bank/other financing institution or Altum finance instrument. After the renovation is completed and the obtained energy efficiency level is known, a grant from 25% -50% (depending on where the loan has been taken and how high energy efficiency rate has been reached) will be paid back from the Latvia national programme.

7.2 Income

Energy savings from each renovated multiresidential house is reported yearly to the Latvia Ministry of Economics – the administrator of the National programme. It is calculated as energy savings in kWh.

To carry out the refurbishment, the owners of the apartments take loan from banks. The most common repayment period of loan for EE refurbishments is from 0-15 years, depending on apartment owners' choice and possibilities. The time of return of investment 8-16 years. Loan payments are partly outbalanced by reduction in energy bills, but there is no direct income.

7.3 Feasibility assessment

The project is feasible and has the most direct impact on reduction of CO2 and the associated emissions. Depending on costs of construction works and the cost of loans (interest rates) the return of investment is from 10 -16 years.

But as a result of the measures undertaken the thermal characteristics of the buildings are significantly improved and the inhabitants enjoy increased thermal comfort, vbetter living environment, increase in property value, reduced heating bills per 40-60%.

7.4 Sensitivity analysis

The project financial feasibility is the mostly dependant on prices in construction sector determining the cost of EE refurbishment and the interest rates for loans.

In ideal case the loan payments are outbalanced by energy savings and cuts in energy bills, but this is not always the case.

7.5 Social benefits and Public support

Social benefits of the project include the positive effect on the surrounding area, which stimulates the implementation of similar projects of EE refurbishments of multiresidential buildings.

The 1st national programme on EE refurbishment run from 2009-2013, implementing the last refurbishments by the October 2015. The new national programme is planned to be launched in October 2015. It is planned that from 2015-2020 the apartment owners who will decide on EE renovation can obtain a loan in some bank/other financing institution or Altum finance instrument. After the renovation is completed and the obtained energy efficiency level is known, a grant from 25% -50% (depending on where the loan has been taken and how high energy efficiency rate has been reached) will be paid back from the Latvia national programme.

From all the eligible costs of EE refurbishment the project can get reimbursed the grant to the extent of:

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8 Implementation roadmap

	2014		2015		2016		2017
	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half
Assistance in implementation of EE refurbishments of multiresidential houses from the 1st national programme (refurbishments eligible till October 2015)							
Seminars and consultations on general necessity and benefits of EE refurbishments of multiresidential buildings							
Work group meetings - preparation of informative campaign and feedback for the 2nd national programme (Oct 2015-2020)		x		x	x	x	
Implementation of informative campaign on the 2nd national programme on EE refurbishment of multiresidential buildings at local and regional level							
Assistance in preparation of project applications for EE refurbishment of multiresidential houses							

9 Conclusion

EE refurbishment is a viable solution for the many multiresidential houses in Latvia, which constitute 66% of the living fund. There are clear benefits from EE refurbishment - as a result of the measures undertaken the thermal characteristics of the buildings are significantly improved and the inhabitants enjoy increased thermal comfort, better living environment, increase in property value, reduced energy consumption and heating bills per 40-60%.

Depending on costs of construction works and the cost of loans (interest rates) the return of investment is 10 -16 years.