

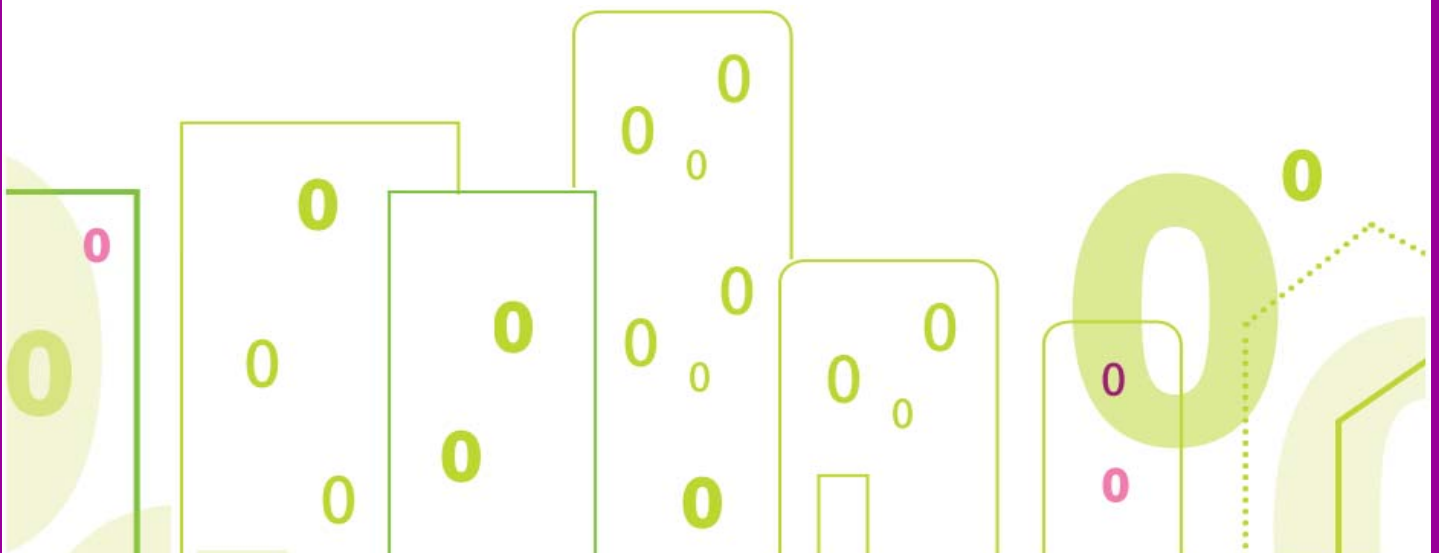
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**NEARLY  
ZERO  
ENERGY**  
HOUSING IN  
DIVIDED OWNERSHIP

## THE NEARLY-ZERO ENERGY CHALLENGE IN DIVIDED AND COOPERATIVE OWNERSHIP

Legal & organizational framework and  
Communication & marketing of nZEB in Divided and  
Cooperative Ownership



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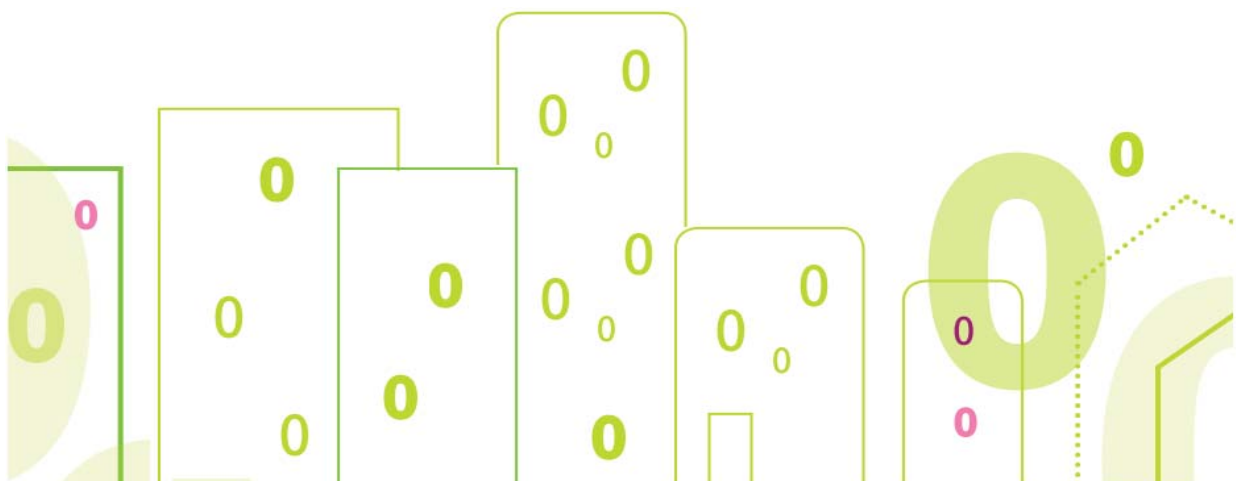
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## Annexes

See document "Annexes - Legal & organizational framework and Communication & marketing of nZEB in Divided and Cooperative Ownership " downloadable from the following link:

[http://www.powerhouseeurope.eu/nearly\\_zero\\_taskforces/nzeb\\_in\\_dividedcooperative\\_ownership/key\\_outputs\\_and\\_resources/](http://www.powerhouseeurope.eu/nearly_zero_taskforces/nzeb_in_dividedcooperative_ownership/key_outputs_and_resources/)

## 1 Introduction

In this document, two of the hot topics of this TaskForce will be faced: “Legal and organizational framework” and “Communication and marketing” of nearly-Zero Energy Buildings in Divided and Cooperative Ownership. The document is linked to the Third International TaskForce Workshop which was held in Tallinn on 12th and 13th of June 2014.

The Document is divided in two parts, one for each hot topic. Part A is dedicated to “Legal and organizational framework”. In divided and cooperative property buildings, the role of the tenant/ occupier is crucial for the decision making process, especially for what concern the retrofitting of existing buildings. Different member states have different roles for the decision making process, in some cases with special rules for energy efficient renovation. The aim of the document is to describe the situation in different member states, especially in Bulgaria Estonia and Italy, for divided and cooperative buildings. The document aims also to address good organizational practices to facilitate the decision making process for renovation in the different national/ regional legal framework. Part A is organized as follow:

- ✓ Overview of the legislation framework in different EU Countries/Regions for what concern the decision making process in cooperative and divided ownership buildings for what concern the energy retrofit of existing buildings. This part is based on the outcomes of the international workshop which was held in Tallinn on 12th and 13th June 2014.
- ✓ Experience from the retrofitting test cases: how the decision making process has been handled in practice, which were the limitations, how these have been faced, the experience achieved in the selected demonstration cases in Bulgaria, Estonia and Italy.
- ✓ State of the art in each of the three Countries, where it will be reported the point of view of a selected number of national experts and housing managers, plus a paragraph with the position of the national association which is partner of the POWER HOUSE Project; this is actually part of the national roadmap.

Part B face the “communication and marketing” topic, a theme of extreme relevance for new constructions but interesting also for deep renovation projects. In fact, on one side it is assumed that the quality of more performing buildings brings higher construction costs than business as usual, but on the other side it gives a competitiveness advantage to the providers of low energy houses. “Low energy buildings cost a bit more but they can be sold easily”. With this work we will try to see if this assumption is true also in practice, and what are the winning communication and marketing strategies. In deep renovation projects, the aim of improving significantly the energy performance can be driving force for the entire project, taking with it those measures, which are necessary to improve the overall quality of the building. Part B follows a similar structure as part A, besides it is based only on Bulgaria, Estonia and Italy’s experiences.

The document includes a selection of successful low energy building promotional materials produced in Bulgaria, Estonia and Italy (Annex 1- 4).

Each Part is followed by general conclusions which summarize the main outcomes of the research work done.

## 2 Part A: Legal and organizational framework

### European overview

A workshop has been organised in Tallinn on 12<sup>th</sup> and 13<sup>th</sup> of June 2014, hosted by Estonian organization EKYL. The workshop had a morning section in Estonian, and an afternoon section in English. During the afternoon section, experts from the EU Joint research centre, Italy, Latvia, Sweden, Germany and Estonia have been presenting and discussing experiences related to the decision making process for energy renovation of existing buildings. The day after the workshop has been possible to visit some [interesting examples of renovated multifamily buildings in Estonia](#).

The full report on the workshop and study visit can be downloaded [here](#). Some of the points emerged from the workshop are summarized here:

- ✓ Decision making in cooperative and divided property is more complicated, as owners are dependent on each other to reach a decision.
- ✓ One topic is where to take a deep renovation, or a step by step one; deep renovation brings to a better result also in term of energy savings, but requires more resources to be invested.
- ✓ It is essential to start to engage the owners or tenants from very early in the project.
- ✓ Service providers play a crucial role in the deep renovation process.
- ✓ Showcasing good practice examples of renovation in multifamily buildings also helps the decision making process.

### Experiences from test cases

#### ✓ Bulgaria

Energy efficient renovation of existing condominium buildings at a large scale in Bulgaria has been a complicated issue due to the tenure structure and long-term lack of proper building management legislation. Therefore, very few pilot projects were developed and the renovation activities in Bulgaria are lagging behind that in most EE countries. Thus, a special attention is drawn to optimize the organisational framework related to the energy efficient housing refurbishment.

The very high owner occupancy share - currently almost 100% of the housing stock and the prevailing of multi-storey housing in big cities in Bulgaria imposes heavy obstacles for decision making process for renovation of such buildings. The fact that there is not a sound body representing the condominium building prevents also the contacts with institutions responsible for financing and subsidising of housing renovation activities.

### The status of homeowners associations

Until 2009, the legislation concerning the homeowners in condominium buildings did not impose sound basis for creation of building based homeowners associations for adequate management of their property. In recent years, some “Ad Hoc” energy efficiency renovation activities for the insulation of separate building parts by the apartment owners took place as a result of the pressuring permanent increase of energy prices and the lack of proper legislation in Bulgaria. Such badly understood renovation has led to the waste of the scarce resources and prevented further renovation activities at the scale of entire building. Lack of proper organizational status of homeowners in condominium buildings created permanent difficulties in day-to-day maintenance of the housing and prevent implementation of feasible renovation activities.

Since 2009 when the new Condominium Act was adopted, the homeowners from condominium buildings in Bulgaria are allowed to form Homeowners Associations (HOA) as legal bodies eligible for access to renovation funds and subsidies. The new legal framework for condominium housing in Bulgaria was targeted at creation of incentives for improvement of maintenance of condominiums and facilitating the start of larger scale energy efficient renovation activities in multi-storey housing. The Condominium Act sets this as a voluntary option along with the existing form of Owners Assembly.

According to the new law two options are possible for management of a condominium building: 1. Owners assembly (existing regulation) and 2. Newly formed owners’ association (new regulation). Forming of owners assembly requires majority of 50%. Forming of owners association requires majority of 100%. Owners association is registered according to a new simplified procedure at the municipality. A majority of 67% is needed for undertaking energy efficient renovation of multi-story apartment buildings. Once established the owners association must sustain until the renovation operation and related to it disbursements are finished.

Currently, the main legal, financial and organisational framework for the homeowners associations in Bulgaria to undertake energy efficient renovation of their condominium building is the Operational Programme Regional Development through scheme BG161PO001/1.2-01/2011 “Support for energy efficiency in multifamily residential buildings” supports implementation of energy efficiency measures in multifamily residential buildings by project BG161PO001-1.2.01-0001 „Energy renovation of Bulgarian homes“ in 36 urban centres. The decision making process is a thoughtful combination between the Condominium Act provisions and the prescriptions of the above mentioned housing renovation programme.

The decision making process is divided into two main stages:

#### First Stage: Submission of Letter of interest and support

Main required organizational steps before submitting the Letter of interest and support:

1. A registered homeowners association or owners assembly in accordance with the legal provisions of the Condominium Act;
2. Declaration for the interest of the homeowners association to undertake a project for an energy efficient condominium renovation and to receive services regarding the eligibility of the building, preparation of an indicative budget, support for the execution of the necessary preliminary activities for the preparation of an application for financial support;
3. Agreement of the homeowners representing at least 67% of the common parts. The agreement is voted with a decision of the General Assembly to apply for renovation;

4. Agreement of the homeowners to give access to their individual properties according to a preliminary agreed schedule;
5. Preparation of an indicative budget for the renovation of the condominium building and distribution of the expenses for each homeowner of individual dwelling. Information about the way of financing for each owner of individual dwelling.

#### Second Stage: Application for financial aid and execution of energy efficient renovation

The project managers of the program prepare and the homeowners agree with:

1. Technical survey about the technical condition and stability of the building;
2. Energy survey prescribing the necessary energy efficiency measures;
3. Technical design of the building renovation which is approved and a construction permit is issued;
4. Execution of the construction works.

When approved the homeowners association receives financial aid from the state which amount 75% from the total budget for the renovation of the building including all listed above activities.

#### ***Case Study: nZEC – Energy refurbishment of 13 dwellings in Zaharna Fabrika block 11, Sofia, Bulgaria***

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecascasestudies\\_pi3%5Bid%5D=201](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecascasestudies_pi3%5Bid%5D=201)

#### **Main points of interest**

- The case study is about energy retrofitting of a multi-family condominium building located in Sofia, total area 1256 m<sup>2</sup>; 3-storey building of brickwork on concrete skeleton, built in 1946, owners' assembly with 13 members established in 2012.
- The building is of a multi-storey apartment type (condominium); owners' assembly was established to carry out a project for energy renovation of the building.
- The project implementation strictly followed the requirements of the National Program „Energy Renovation of Bulgarian Homes“ during its first pilot phase.
- The homeowners were living in the building during all phases of the energy renovation project including the construction phase.

#### **Legislative and organizational aspects of the retrofitting process**

A number of problems existed in the building before the decision to undertake a renovation project: extremely low energy performance of the building envelope, leaking roof, cold bridges, high unaffordable level of heating bills of the homeowners, low living comfort. In this situation urgent renovation measures were demanded. The homeowners called a general assembly, discussed all occurred problems and took the formal decision to take part in “Obnoven dom” program which is the first pilot phase of the National Program „Energy Renovation of Bulgarian Homes“. Subsequently, the homeowners followed all required legal and organisational steps required by the program.



The most important organisational step was the establishment of an owners' assembly in accordance with the legal provisions of the Condominium Act. Thus, the homeowners were empowered to become a proactive leader of the energy renovation of their homes in partnership with the consultants from the project management unit. The owners' assembly took decisions on the following matters: preparation of technical and executive designs, compliance assessment of the project, designers control and construction supervision, commissioning of the building, costs associated with obtaining the necessary authorization documents, and proposed budget for the construction and installation works.

### Results in practice

- Insulation of the external walls with 8 cm EPS with U value = 0.335 W/m<sup>2</sup>K;
- Insulation of the pitched roof with 15 cm mineral wool with U value = 0.23 W/m<sup>2</sup>K;
- Insulation of the first floor with 8 cm hard mineral wool plates with U value = 0.38 W/m<sup>2</sup>K.
- Replacement of the window frames with PVC double glazing.
- As a second stage solar collectors for domestic hot water were installed on the roof of the building.
- The achieved reduction in energy use is 52%.
- The building obtained energy certificate Class B.
- Currently, the homeowners enjoy a comfortable and healthy indoor climate.
- The market assessment shows an increased property value.

### Case Study: nZEC – Energy refurbishment of 17 dwellings in Prof. Giovanni Gorini Street, Sofia, Bulgaria

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecascasestudies\\_pi3%255Bid%255D=202](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecascasestudies_pi3%255Bid%255D=202)

### Main points of interest

- The case study is about energy retrofitting of a multi-family condominium building located in Sofia, total area 1200 m<sup>2</sup>; 5-storey building of brickwork on concrete skeleton, built in 1939, owners' assembly with 17 members established in 2011.
- The building is of a multi-storey apartment type (condominium); owners' assembly was established to carry out a project for energy renovation of the building.
- The project implementation strictly followed the requirements of the National Program „Energy Renovation of Bulgarian Homes“ during its first pilot phase.
- The homeowners were living in the building during all phases of the energy renovation project including the construction phase.

### Legislative and organizational aspects of the retrofitting process

A number of problems existed in the building before the decision to undertake a renovation project: extremely low energy saving performance of the building envelope, leaking roof, cold bridges, high unaffordable level of heating bills of the homeowners, low living comfort. In this situation urgent renovation measures were demanded. The homeowners called a general assembly, discussed all occurred problems and took the formal decision to take part in “Obnoven dom” program which is the first pilot phase of the National Program „Energy Renovation of Bulgarian Homes“. Subsequently, the homeowners followed all required legal and organisational steps required by the program.

The building was among the first renovated during the first pilot phase of the national programme due to the very active leader of the local community of residents. The personal motivation, knowledge and commitment to achieve positive results made the project implementation easier and securer for the residents. Again the most important organisational step was the establishment of an owners’ assembly in accordance with the legal provisions of the Condominium Act. Thus, the homeowners were empowered to become a proactive leader of the energy renovation of their homes in partnership with the consultants from the project management unit. The owners’ assembly took decisions on the following matters: preparation of technical and executive designs, compliance assessment of the project, designers control and construction supervision, commissioning of the building, costs associated with obtaining the necessary authorization documents, and proposed budget for the construction and installation works.

### Results in practice

- Insulation of the external walls with 8 cm EPS with U value = 0.335 W/m<sup>2</sup>K;
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- Insulation of the first floor with 8 cm hard mineral wool plates with U value = 0.38 W/m<sup>2</sup>K.
- Replacement of the window frames with PVC double glazing.
- The achieved reduction in energy use is 59%.
- The building obtained energy certificate Class B.
- Currently, the homeowners enjoy a comfortable and healthy indoor climate.
- The market assessment shows an increased property value.

### Lessons learned

The lessons learnt from the existing legal and organisational framework for the implementation of projects for energy renovation of condominium buildings can be summarized as follows:

1. The coordination of all project related activities is time and resource consuming due to the large number of stakeholders involved, diverse sources of available financing and the unique and complex nature of the activity.
2. The possible multiplication and up scaling of renovation activities will reduce the time and resources needed and thus, will increase the effectiveness in technical and financial terms. These

up scaling will not only increase the financial efficiency but will enable residents' involvement and satisfaction from the improvement of their homes and living environment.

3. One of the serious legal barriers to deal with during the implementation of subsidy based renovation is the heavy, complicated and often ambiguous procedure for public procurement involving national subsidies and targeted EU funds.
4. The last but not least, the Condominium Act does not oblige the apartment owners to form a homeowners' association as a legal entity and does not regulate the issues deriving from the ambiguous character of the owners' assembly. The Condominium Act needs further improvements especially in its part dedicated to incentivize the overall activity and the financial input on behalf of the homeowners' associations in condominium buildings to be renovated.

### ✓ Estonia

Apartment association is a special type of non-profit association the activities of which are regulated by the Apartment Associations Act and the Non-profit Associations Act. The association is established by apartment owners for the purpose of shared management of the legal shares of the building and plot of land, which are part of the object of the apartment ownership and representation of the shared interests of the members of the apartment association. There are over 10 000 apartment associations in Estonia today. In addition, also communities of apartment owners exist in buildings where apartment associations have not been established. The communities of apartment owners can also apply for loan and renovation grant, still the interest rate for communities of apartment owners is somewhat higher than for associations. When new Act enters into force on 1 January 2018, it will eliminate communities of apartment owners and in the future it will be possible to administrate apartment ownerships in Estonia only in the form of an apartment association.

We can describe the decision-making process in apartment association regarding energy retrofitting as quite complex with much importance put on the organization as well as legislative aspect. Broad-scale shared ownership in multi-apartment houses means that the decision-making is fully delegated to the owners of the properties and collective decisions for investments are required. The articles of association of an apartment association (Statute) provides for the distribution of votes at a general meeting and therefore the necessary distribution of votes for decision-making may be different in different associations. Still, it is common that for taking a loan for renovation, simple majority of votes is needed.

As majority of apartment associations who plan complex renovation and energy retrofitting, apply for a bank loan or financial grant from KredEx, they usually follow the recommended steps for the apartment associations upon applying for a loan or financial grant.

The recommended steps for apartment associations are:

1. The association conducts an inspection of the technical condition of the residential building, orders energy audit and determines the priority repairs
2. The association organizes first general meeting where the results of energy audit are discussed and decision for renovation is made
3. The association orders a suitable construction expert, reconstruction project for the building, acquires a building permit if necessary, looks for loan and grants available for apartment associations
4. The association prepares draft minutes of the second general meeting and sends it to all the apartment owners before the meeting
5. During the general meeting the association takes decisions according to the conditions of bank – the decisions about reconstruction works, loan, 5-year investment plan for loan application and decision of choosing construction company will be made
6. The association submits the documents indicated in the application to the bank.
7. If the credit decision is positive, the association enters into a contract for services with the construction company and a contract for construction supervision with the construction expert
8. The association enters into an insurance contract for securing the primary structures of the building.
9. The association enters into a loan agreement with bank.
10. The loan is paid pursuant to the invoices presented by the construction company and the instruments of delivery and receipt.

In November 2013, EKYL collected the experiences from test cases about how to manage the decision-making processes in apartment associations in the reconstruction process.

### ***Case Study: nZEC - Energy refurbishment of 60 dwellings in Tuleviku str 10, Rakvere, Estonia***

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecascstudies\\_pi3%5Bid%5D=169](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecascstudies_pi3%5Bid%5D=169)

### **Main points of interest about the project**

- The case study refers to an energy retrofitting of a multi-family building located in Rakvere, 4399 m<sup>2</sup>, 5- storey, built in 1977, apartment association with 60 members established in 1990
- The building is a divided ownership type, operated as association
- The technology was selected on general meeting
- Residents were living in the building during the complex renovation process

### Legislative and organizational aspects of the retrofitting process

- In 2010 different problems appeared in the building: leaking heating system, uneven heat distribution, mould, cold bridges. In this situation, the association decided to order energy audit.
- Before introducing the results of energy audit, the apartment owners were divided into three parts: 1/3 stand for complex renovation, 1/3 was against everything regarding renovation and 1/3 did not have clear position about the question.
- After introducing the results of energy audit, explaining the technical solutions of reconstruction and finding the energy savings being compliant with loan payments, additionally 1/3 of apartment owners started to support the complex renovation.
- The apartment association made a decision to (1) take loan, (2) use building design and building supervision grant from Climate and Energy Agency KENA and (2) use 35% reconstruction grant from Fund KredEx.
- The construction project was ordered, a construction company was chosen and construction started. Unexpectedly the association had to wait two months for the credit decision from bank. Finally, the association decided to change the bank and the renovation finished barely before cold season.

### Results in practice

- The heat recovery technology *Intelivent inverter heat recovery system* was installed
- The thermal insulation of 150 mm was used for building insulation
- The heating system was reconstructed to two-pipes system with individual regulators
- Energy use reduction 59%

### Case Study: nZEC - Energy refurbishment of 40 dwellings in Võidu str 42, Rakvere, Estonia

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecasestudies\\_pi3%5Bid%5D=170](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecasestudies_pi3%5Bid%5D=170)

### Main points of interest about the project

- The case study refers to an energy retrofitting of a multi-family building located in Rakvere, 1889 m<sup>2</sup>, 5- storey, built in 1989, apartment association with 40 members established in 1998
- The building is a divided ownership type, operated as association
- The technology was selected on general meeting

- Residents were living in the building during the complex renovation process

### Legislative and organizational aspects of the retrofitting process

- The building was already in the status that need of maintenance work of the facades, heating system and ventilation, there were uneven heat distribution and mould. In addition, there were different opinions of apartment owners regarding building renovation.
- With the aim to start renovation, several meetings were organised during several years but without any result due to the passive attitude of apartment owners. The simple majority of owners votes that is necessary for starting renovation, was never achieved and tensions between owners increased.
- The decision was finally made on general assembly in 2004 and energy audit with thermal photography was ordered year later
- First building procurement failed as there wasn't correct construction project prepared
- In 2010 new energy audit and new construction project were ordered. The new project based on the requirements of 35% reconstruction grant from KredEx. The coordination and harmonizing the project with all members lasted almost six months.
- The association faced many difficulties in 2011 while looking for suitable construction company as the construction prices had increased significantly due to additional finances on the market from CO2 investment scheme and structural funds. Finally, local and well-known company was chosen.
- When the construction company was chosen, it took three months for all agreements with bank and Fund KredEx.
- The complex renovation finished in October 2012.

### Results in practice

- The heat pump technology for heat recovery and hot tap water production from heat recovered from ventilation was installed
- External walls have been cladded with 150 mm EPS panels
- Heating system has been replaced with two pipe system, new radiators installed
- Ventilation system was built by using heat pump recovery ventilation based on exhaust air.
- Energy use reduction almost 66%

### Lessons learned

- Importance of accurate and detailed technical project for renovation. Good project helps the association to ask tenders from construction companies and to compare different offers and helps construction companies to make tenders to the association. Good project is also the basis for effective control and supervision during the renovation process. Therefore the

detailed technical project for renovation accelerates the organizational processes for renovation.

- Importance of preparation for general meetings of apartment association. The meetings are prepared by the board with help from energy expert and project manager and the materials should offer all information for owners to make the decisions for renovation.

### ✓ Italy

The decision making process regarding energy retrofitting in multi-family buildings differs depending from the typology of property.

Two main situations could be identified:

- cooperative property: generally, all the dwellings are owned by the Social Housing. In this case, the decision making process is quite rapid: the crucial phase is instead the continuing involvement of tenants with the aim of making them accept the changes that a deep retrofitting may cause (e.g.: the new retrofitted well-insulated dwellings probably will require a different usage in terms of space heating respect the previous situation), in addition to the inconveniences derived from the presence of scaffolding structures next to (and sometimes inside!) their homes. In such cases, we can affirm that “organizational” aspects are more significant than those legislative.
- divided property: generally, the flats are owned by several owners. In this case, the decision making process becomes much more complex, because each owner is one stakeholder. Therefore, legislative aspects (Condominium law) prevail over organizational ones.

In November 2013, Finabita collected the experiences from test cases about how to manage the decision making processes in the retrofitting phase.

### **Case Study: nZEC - Energy refurbishment of 131 dwellings and new construction of 45 dwellings -Via Caldera 109, 20153 Milano, Italy**

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecasestudies\\_pi3%5Bid%5D=189](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecasestudies_pi3%5Bid%5D=189)

### **Main points of interest about the project**

- the building belongs to cooperative ownership;
- the project consists in both renovation and new construction of buildings;

### **Legislative and organizational aspects of the retrofitting process**

- All the dwellings are owned by the Social Housing Company.

- Concerning the legislative aspect of the retrofitting process, every year the SHO Board of Directors must draw up a plan of maintenance of their housing stock, as a part of the medium-term program, which is presented and discussed during the annual General Assembly of Shareholders. This is required under the Statute of the SHO itself, in order to maintain the housing stock efficient and in compliance with the regulation in force. The individuation of technical and design solutions for retrofitting are not subjected to special preventive participatory process with tenants.
- The proposals are prepared by the SHO Technicians, in accordance with the Board delegates to the topic. Then, the chosen technical solutions are illustrated to the tenants, whose consensus remains critical to the success of the work. The sharing by tenants is the result of proper communication strategy of the SHO staff and of the Board of Directors. The awareness of the inhabitants of what you do allows them also to better face the inevitable inconvenience that retrofitting normally involves.
- Tenants need time to "accept" the operational phase of the construction works, which will have impact on their lifestyle. To overcome this, an important role is played by the relationship between the cooperative and the tenants, which starts when the "future tenant" applies for a dwelling. The SHO not only provides a "home", but a set of services: tenants are informed about the inner workings of the Cooperative, as well as about possible scenarios that could emerge over time (e.g., the renovation of the building where they wish to live) with all the possible effects both in terms of the increase of rent that with regard to the hardships (and the positive effects!) that a renovation may bring.
- The involvement phase of tenants has been developed in different ways:
  - as we said before, when a building is upgraded, tenants already know that the rent is revised and increased to allow for the recovery of the investment, so no more "bad news" for the tenants who are confident in the SHO and do not impede the renovation process;
  - several meetings were organized between tenants and designers in order to present the renovation project and share the architectural solutions (and thus have greater consensus);
  - another way to inform is the SHO magazine- in the case of via Caldera even the direct dialogue with the technicians of the company, as the building is next to the offices of the SHO.

### ***Case Study: nZEC - Energy refurbishment of 38 dwellings in Via dei Querci, 2 Florence, Italy***

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecascstudies\\_pi3%5Bid%5D=194](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecascstudies_pi3%5Bid%5D=194)

### **Main points of interest**

- The case study refers to an energy retrofitting of a multi-family building located in Florence (38 apartments built up in 1975);



- the building is a divided ownership type, and managed by a property manager who is external to the SH company.

### Unica proposal for energy deep renovation (“RINNOVA” formula)

The SH cooperative decided to extend its business to the renovation of multi- apartment buildings (condominiums) and to act like an ESCo by proposing a complete package that includes:

- thorough energy audit of the building and housing,
- wording of the renovation proposal,
- developing of the project and of the tender documents (technical specifications),
- choice of the company performing the retrofitting works,
- choice of the materials,
- construction management,
- assisting in the practice of tax deduction,
- execution of energy performance contract with guaranteed results with the property manager,
- when works are finished, energy certification of all the dwellings.

The SH company finances a substantial part of the cost of the energy retrofitting and recovers its investment over a period of time, exclusively on the decline in energy consumption following the intervention.

### Legislative and Organizational aspects of the retrofitting process

In the following, the main steps of the process are explained.

- UNICA contacted the property manager of the condominium and made the proposal.
- UNICA also proposed an accurate energy audit both for the whole building and of the single flats for free and independently from the decision of going ahead or not with the energy retrofitting phase.
- The Condominium assembly had already approved the “simple” renovation of the facades, without any energy saving measure.
- UNICA intervened saying that it would keep the same budget but would have added energy saving interventions individuated by the energy audits (replacement of the old boiler and deep insulation of the facades), with the constraint that the SH company will be in charge of the quality check of both the tender documents and materials
- The property owners finance only what had been budgeted (simple renovation of the facades) and will continue to bear the costs of energy consumption with reference to those of the two years before the intervention. Once the SH company will have recovered the capital invested, the building will begin to appreciate directly the savings achieved and reduce energy consumption expenses.

- The Condominium assembly needed three meetings to decide: meetings took place together with the technicians who performed energy audits and the design team in charge of the project.
- The Condominium regulation foresaw that, to approve these interventions (deep renovation with energy saving measures and energy audits), at least 50% of the participants should agree and furthermore these ones should represent at least 500/1000 of the property.

### Results in practice

- The savings in energy consumption was estimated based on the results of the energy audit, accounting for 20-22%. The payback time of the investment is estimated in 12 years (with reference to the consumption of gas for the past 2 years prior to the intervention). If energy savings will be greater 20%, the SH company will recover in a shorter time the investment and the owners will begin to benefit the savings directly before the end of the twelfth year.
- The energy retrofit works were completed in October 2011, so at present consumption data are available for two heating seasons. During the first season, gas savings were around 14.70%, while during in the second year they were around 22.50%. The significant improvement has been possible due not only to some minor technical adjustments on the boiler but in large part to the information and training performed by the SH staff at the households. They focused especially on a correct use of the heating regulation equipment in order to avoid excessive indoor temperatures.
- The households were very satisfied, not only for the good results of heating during winter but also, for the significant improvement of thermal comfort during summer.

### Lessons learned

- The Assembly should be already oriented to undertake a renovation project, so in spending money, this could facilitate the decision making process.
- Importance of the energy audit: more precise it will be, more trustable will be with advantage both for owners and for the SH company in terms of respecting the payback time of the investment.
- Importance of the meetings with technicians who are in charge of the renovation project: direct explanations to owners contribute to solve doubts and gain trust in the intervention, facilitating the decision making process.
- SH company supported the owners both in administrative issues (e.g., tax deduction practices) and, if necessary, they accompanied them to banks in order to facilitate the request of funding.
- Importance of monitoring the energy consumption after the works. Monitoring consumption is crucial not only for the financial partner (in this specific case, the SH company) in order to check the economic return of the investment, but also for the beneficiaries, in order to inform about their consumption and, if necessary –as in this case was – correct energy behaviour and make a little training about energy savings at home, such as use of thermostatic valves, how to ventilate by opening windows, etc.

### Critical issues

- Poor response by building managers, energy renovation is not their “core business”.
- Banks are not very interested in financing these operations.
- Incentives (Tax deduction 55% and 36%) are too weak:
  - are addressed only to those who have fiscal capacity,
  - an initial money capital is requested,
  - are distributed without guarantee of actual energy savings.

### The situation in the 3 Countries

This chapter contains a collection of direct experiences and opinions from experts, housing managers and motivated householders from the 3 Countries.

#### ✓ **Bulgaria**

CAC contacted a number of Bulgarian experts that are involved in energy efficiency issues. Active homeowners and housing managers from condominium buildings were also approached in order to investigate their opinion on the topic of legal and organizational aspect of energy efficient renovation and introduction of RES systems.

Interviews with experts and homeowners were made by e-mail and by phone.

#### Input from the experts and active homeowners

The existing legal framework for condominium housing in Bulgaria does not create incentives for proper management, maintenance and energy efficient renovation of condominium buildings. This is related to the following main issues:

- The new Condominium Law that regulates the management and maintenance of condominium buildings is only allowing but not obliging apartment owners to form homeowners associations (HOAs).
- According to the Condominium Act from 2009 there is a provision for voluntary registration of HOA but this is still not supported by sufficient incentives for the homeowners and subsequently this provision is practically not used by them. As a consequence, since the approval of the Condominium Act very few HOAs were registered.
- Many of the active homeowners and especially those involved in the day-to-day management and maintenance of the multi-story apartment buildings express the opinion that residents need much more powerful organisational tool such as the legal entity homeowners' association which will have the legal capacity to impose collective decisions and to follow court procedures when financial obligations are not performed.

- The on-going process of energy efficient renovation of condominium housing within the legal and organisational framework of the National Program „Energy Renovation of Bulgarian Homes“ proves to be highly complex, heavily institutionalized and with different levels of decision making. There is a common understanding about the need of simplification and decentralization of procedures and decision making rules.
- The homeowners' associations should be promoted as main organisational form especially in the process of energy efficient condominium renovation.

### Project partner position

Currently, the biggest issue of the housing system in Bulgaria is related to the management, maintenance and renovation of the condominium housing stock. Still, the existing legal and organisational framework for the multi-story apartment buildings is not sufficiently strong and properly functioning. The main barrier types are as follows:

1. Insufficient Legislation regarding management and renovation of condominium housing. The most difficult barrier is the heavy, complicated and often ambiguous procedure for public procurement involving national subsidies and targeted EU funds. In the same time, the newly adopted Condominium Act needs extensive further improvements especially in its part dedicated to incentivize the overall activity and the financial input on behalf of the homeowners' associations in condominium buildings to be renovated.
2. Considerable barrier is the lack of available and sufficiently flexible models for financial engineering that are needed to create tailor made mixture of different sources of funds including subsidies to cover the renovation costs.
3. There is still missing capacity of professionals during the entire chain of housing management and renovation activities with proper knowledge and experience mainly in the following stages:
  - initiating of a renovation project including all stages of obtaining formal legally binding collective decision at the level of entire condominium building;
  - financial engineering of renovation project;
  - contracting of construction works financed by public funds including subsidies;
  - execution of a proper quality control over the building renovation works;
4. There is still missing capacity of homeowners to take the responsibility for the sustainable management, maintenance and renovation of their homes. Therefore, special training and educational programs are needed in combination with other capacity building tools.

### ✓ **Estonia**

In November and December 2013, EKYL has contacted some of the Estonian experts in the field of energy efficiency and board members of apartment associations. They were asked to analyze legal and organizational framework of the retrofitting process in multi-apartment buildings operated as associations.

The interviews with experts were made by e-mail and additional questions and points of interest were discussed by phone when needed. The interviews with managers were made by phone.

### Input from the independent experts and board members of apartment associations.

- Apartment owners in Estonia bear huge responsibility of common property maintenance and affordable management. It is not rare that the private owners actually don't realize the importance of their role in the residential sector and much work and extra time from associations' board members and experts are needed to convince and explain to the owners why should their property last longer with smaller costs. The attitude may be the heritage from the soviet regime, when there were always higher authorities making decisions of housing.
- Today the complex renovation of multi-apartment building in Estonia is possible only with bank loan but many private owners are against all loans due to fear of inability to make the repayments. Still usually, after explanations from energy expert on general meeting, owners change their mind and make the decision to start renovation. Therefore, it is essential to involve independent energy expert to the retrofitting process since very beginning. The expert can advise the board and answer to the different questions that owners may have before they are confident enough to make the decision.
- Good preparation work done before the general meeting by the board members of apartment association or project manager is the key for successful renovation as only the private owners can make the decision to start renovation. If the owners don't have enough information to make the supportive decision, extra general meetings are needed and the process will be longer than planned.
- The recommendations for all apartment associations are: to order good technical renovation project and to hire experienced supervisor to be sure that the construction company does its work with right materials and according to the technical project.

### Project partner position

About 65% of Estonian population lives in apartment associations. Apartment association is the most spread and generally recognized way of management of residential buildings and cooperation. Each co-operative housing association is self-financing not-for-profit organization managing one multi-apartment building. After the privatisation process in 1990s, residents became the owners of their flats and they had to get involved in housing management and to make decisions regarding building maintenance and renovation as well as attraction of finances. On one hand, the situation creates a good platform for open democratic discussions and decision-making process where every owner has right to use his voice. On the other hand, the situation causes tensions between owners when voting for energy efficient renovation and may lead to opposition against renovation among flat owners.

There are some necessary steps to be taken to build mutual openness and trust between different stakeholders inside as well as outside apartment associations.

1. The process of educating board members of apartment associations as well as apartment owners should continue. Well educated apartment owners can take into account different considerations while making decisions on general meeting about renovation. EKYL has developed different training programs for professionals and owners for that purpose.
2. Different consultation services must be available for apartment associations. Energy experts, legal advisers, project managers and consultants have the knowhow and experience that apartment associations need but very often miss as they don't have financial resources or knowledge to order this services.
3. The legal framework should continue to support the energy efficiency activities and create the clear frames for decision-making in apartment associations when the new legislation will come into force in coming years.

### ✓ Italy

Finabita made a research among the most interesting projects and experiences referring this theme and contacted experts -for the divided ownership- and housing manager -for the cooperative ownership.

### *Input from the experts*

In divided and cooperative property buildings, the role of the private owners is crucial for the decision making process, especially for what concern the retrofitting of existing buildings. As we stressed in the Chapter dedicated to Test cases, in divided property the decision making process is more complicated than in case of the cooperative one, and “owners’ power” often is recognized as a “bottleneck” in the process. Nowadays, in Italy, deep renovation of existing building stock is a hot topic, especially in case of multi-owners and there are several experiences referred to energy retrofitting of existing multi-owners buildings, but very few of them focus on how to involve the owners in order to overcome that bottleneck. Finabita researched among them and pointed out interesting lessons learned.

### Lessons learned

#### *The role of Condominium Property Managers in the decision making process*

All contacted experts agree that the most part of condominium property managers are not interested in proposing to the owners energy retrofitting measures, since this is not their “core business”, but, at the opposite, all the procedures (technical, administrative) that refer to energy deep renovation sound like an “extra” work, even if they could represent a good occasion for the condominium to obtain considerable money savings (considering the growing cost of fossil fuels), especially when the

building already needs renovation intervention. ANACI<sup>1</sup> is going to deliver a practical guide for property managers about energy retrofiting. It will deal with both technical issues and communicational aspects.

### *The role of Private Owners in the decision making process*

- ANACI promoted a survey<sup>2</sup> among professional property managers about the application of energy efficiency and renewables in condominiums. This survey points out that as much as 55% of the building managers declare that there are frequent disputes on interventions to improve the energy performance of buildings. The main causes of dispute are:
  - high costs of the retrofiting measures;
  - for families, difficulty in accessing funds/bank credits;
  - lack of information among households about the technology adopted in energy renovation,
  - lack of knowledge among households of the benefits in terms of cost savings;
  - uncertainty about the future of the incentive regulation.
- When property managers are interested in proposing a deep renovation to the condominium, private owners might not be informed and consequently reject the proposal. In this case, a training of the users is necessary, in order to inform also about the financing solutions, if needed. In some cases, meetings with technicians and professionals showing the project and meetings with the ESCo or with the financial partners could be very helpful, in order to make the owners trusting in the project. The ESCo/technicians also may produce an accurate energy audit with thermographic pictures in order to make owners getting in touch with the energy deficiencies of the building.
- The recently approved (June 2013) condominium normative foresees that, in case of proposal of energy deep renovation after an energy audit, at least one half plus one person of the participants should agree and with a number of votes representing at least one-third of the value of the building. All the experts agree that this is a good new, since it makes clear and facilitates the decision making process, nevertheless, it's important to gather the approval of as many owners as possible in order to reduce future problems (e.g. works payments by owners).
- The choice of the company that will perform the works is crucial, especially when works refers to heating system replacement. It is important that the company that will do the work will also be in charge of operating the heating system.
- Importance of monitoring the energy consumption after the works, not only for the financial partner (in this specific case, the SH company), but also to inform the householders about their

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<sup>1</sup> ANACI, *Associazione Nazionale Amministratori Condominiale e Immobiliari*, Italian National Association of Professionals Property Managers.

<sup>2</sup> The survey refers to a sample of 465 property managers. The number of respondents is significant, however, is not representative of the class: the detection is therefore to be considered purely qualitative and expression of a trend.

consumption and, if necessary, make a little training about energy savings at home, such as use of thermostatic valves, how to open the windows, and so on.

### *Turning the decision-making process towards energy retrofitting<sup>3</sup>*

- A field study carried out in 5 European countries investigating the motivation reasons behind 28 energy refurbished buildings (Beillan, et al., 2011)<sup>4</sup> showed that the decision-makers do not consider energy when they started thinking about the renovation projects. Instead, the desire for a comfortable, good quality home was among the main drivers. E.g., owners may recognise the need for adding insulation as a complementary step during necessary façade/wall conservation work (urgent or as part of maintenance routine). In this case, the energy saving measure is indeed “provoked” by other reasons.
- On the other hand, investments in energy saving measures may also occur as a stand-alone measure. Under these circumstances, the insulation measure would compete with other potential investments (e.g. a kitchen upgrade, PV panels or even the latest electronic gadget). Subsequently, the insulation measure may struggle to compete against other investments as the ‘social benefit’ would be an additional factor in their motivation process. Logically, for energy renovations to constitute a competitive option among the plethora of investment possibilities, there should be confidence that energy efficiency can have a positive reflection in the property value. While a kitchen renovation will most likely result in some increase in the property price and therefore perceived as a rational decision, it is not yet clear whether energy efficiency has an impact on the house value (Croft & Sunderland, 2011). However, some evidence that energy labelling across the EU brings higher valuations for efficient buildings has been documented in a research report commissioned by RICS. The authors identified a premium associated with properties that demonstrate high levels of energy efficiency, with a 2.8% higher transaction price for properties with an A, B, or C certificate (Brounen & Kok, 2010).

### *Private owners as proponent of energy retrofitting*

In the framework of EPOurban<sup>5</sup> project, there is an interesting experience of the City of Bolzano. EPOurban project aims to develop, implement and consolidate a system of technical advice, financial and administrative addressed to individuals, using a multidisciplinary team of experts consulting and testing them on 20 private buildings (10 during 2013 and 10 buildings during 2014) selected by the City of Bolzano. The team of experts will draw, on the experience gained, an operating model to be replicated in the future on other buildings in the city of Bolzano in case of deep energy renovation.

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<sup>3</sup> See Deliverable 1.1 - EASEE project <http://www.easee-project.eu/>

<sup>5</sup> See EPOurban project <http://www.epourban.eu/index.php/it/>



One of the most interesting project objective is to build capacities of private owners of residential buildings, to take energy retrofiting measures and to generate private investment into the residential building stock. Not only the property managers but also individual private owners were able to nominate their condominium, so about 50 applications were received, from which the City has chosen about 20. This bottom –up approach and the pro-active role given to the private owners has tackled the scarce interest of property managers.

### Legislative aspects

Condominium legislation has been recently reformed: since the 18th June 2013, new regulations referring to energy refurbishment measures and the requested owners quorum have been introduced. Below, a table is reported comparing the situation before and after the reformation.

This reformation is interesting since not only simplifies the decision making processes but, among all, clarifies the requested quorum (both in terms of number of persons-owners- and in property thousandths required).

We must say that in Italy, a condominium assembly is legal and valid when 1/3 of the owners are participating with at least 334/1000 of whole property represented.

Issue	Before reformation		After reformation	
	<i>Quorum of owners requested (persons)</i>	<i>Quorum of property</i>	<i>Quorum of owners requested (persons)</i>	<i>Quorum of property</i>
Reduction of energy consumption and installation of renewable energy systems <b>(energy audits already available)</b> <sup>6</sup> ,	No more requirements	Majority of the ownership represented by the participants	Majority of the participants (50%+1)	At least 1/3 of the property (334/1000)
Reduction of energy consumption and installation of renewable energy systems <b>(no energy audit available)</b> <sup>7</sup>	Majority of the participants (50%+1)	At least 2/3 of the property (667/1000)	Majority of the participants (50%+1)	At least 1/2 of the property (501/1000)

<sup>6</sup>See art 26, comma 2, Italian law n. 10/1991, as amended by Law n. 99/2009.

<sup>7</sup> See art 1120 comma 2, Italian Civil Code.

### *Input from housing managers*

In case of cooperative property, tenants are not the decision-makers of the renovation process, but is the SH company itself that must renovate its own housing stock. This simplifies the decision-making process, even if, there are several financial/legislative barriers. But, once the process is started, no bottleneck could be identified. Nevertheless, even if tenants are not the decision makers, it is important to involve them, since refurbishment operation will have impact on their lifestyle not only after but also during the works. To overcome this, an important role is played by the relationship between the cooperative and tenant that starts when the “future tenant” applies for a dwelling. The SHO not only provides a “home”, but a set of services: tenants are informed about the inner workings of the Cooperative, as well as about possible scenarios that could emerge over time (e.g., the renovation of the building where they wish to live) with all the possible effects both in terms of the increase of rent that with regard to the hardships (and the positive effects!) that a renovation may bring.

Some SH companies organised a series of initiatives related to the theme of energy efficiency and waste reduction<sup>8</sup>, in order to involve tenants in a “holistic” approach based on a different a more sustainable lifestyle, in which energy deep renovation of their homes is only a part .

### *Project partner position*

Considering the recent regulatory developments, in Italy the real estate market will go more and more towards the redevelopment of the existing stock rather than towards the construction of new buildings, based on the principle that public land should be used no more for building construction. So the energy retrofitting remains an important issue but difficult to apply, for several reasons<sup>9</sup> (financial, legislative): among them, the organizational issues are prevalent in case of multi-owners buildings. In this chapter, we summarize some Lessons Learned that come from both the experience of Housing managers that from interviews with sector experts.

As we have already stressed, in case of deep energy renovation, two approaches must be individuated, depending on the typology of property:

- Cooperative property: in this case, the decision making process is easier, the SH company promotes the energy renovation but tenants should be trained and involved in order to:
  - make the accepting the retrofitting works and to endure any inconvenience when works are running;
  - at the end of the works, so they could be able to correctly use the new refurbished dwellings and obtain the expected energy savings benefits.
- Divided property: in this case, the process is more complex. Private owners should be involved directly or through the property manager. Often private owners act like a “tough nut to crack” and they reject renovation proposal for different reasons. A possible strategy to overcome this

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<sup>8</sup> Life+ project „Eco-courts“ [www.life-ecocourts.it](http://www.life-ecocourts.it)

<sup>9</sup> See Deliverable 3.1 and 3.4

reticence could be developed, considering that the crucial moment of the whole process is the assembly of condominium.

- Propose energy retrofitting interventions in buildings whose owners are already oriented in sustaining money expenditure because the building needs urgently renovation (e.g. façades retrofitting).
- Appointing a technician to perform energy audits. Energy audits are essential in order to individuate the energy deficiencies and consequently the required intervention. Some ESCos propose audits for free (promotional).
- Energy audit should be explained to the assembly by technicians or by other experts (e.g. energy facilitator): they should introduce the work specifications.
- The communication and training of the assembly is very important: the clearer the individuated solutions are (both from a technical and financial points of view) more trust/approval they will get.
- A committee appointed by the owners who follows all the steps of the decision process and report the issues to the other owners may also be useful to facilitate communication and expedite decisions.
- The technicians and the committee should start collecting estimates of works. If they will regard heating system, the involvement of the company in charge of system maintenance is recommended.
- At this point, the final decision by the assembly should become simple: just compare the estimates of works and vote with the majority. The new condominium regulation clarifies and simplifies also this issue.
- The final energy certification (after the works) of building/dwellings should be presented as an “added commercial value” for the building both by the technicians and by the property manager.
- Another key element for success is the assistance of owners also in financial/administrative issue.
- Propose, after the works, an annual feedback with the private owners, in order to illustrate the energy consumption and (if necessary) correct households’ energy behaviour.

✓ **Conclusions Part A**

The research work done by the three project partners clearly identifies some common aspects, which are of vital importance for the success of existing building renovation programs in divided and cooperative property:

- **Clear rules.** Clear condominium law, defining the role and the rights owners and the rules for approving energy requalification project proposals. “Condominium” should be a legal entity which can apply for finances, order and pay renovation works and other services.
- **Adequate financing.** Access to adequate financing schemes for divided property buildings are essential to gather the capital required for a deep renovation project (see document “Financing the nZEB project and RES in Divided and Cooperative housing“ on this topic).
- **Service providers.** Development of business models, which can help gathering the necessary financial resources to initiate the requalification project by mean of a third party (ESCOs).
- **Qualified workers.** Presence of experienced professionals and workers for designing and implementing the requalification projects, not forgetting the crucial role of “intermediation” between the owners and introduction of the positive consequences of a requalification project. Design energy retrofit is not an easy task and a good audit/ project/ construction are essential to achieve the expected results in terms of energy savings at affordable costs.
- **Qualified support.** Presence of third parties such as sectorial association and energy agencies, which can support the condominium to start the process and meet the right project partners. Owners and eventually the building manager normally don’t have enough competence to lead alone the long process, which can lead a community of owners to decide for a deep renovation project.

The experiences reported in this document show that legislative developments are happening in all the three Countries: the new condominium law (2009) in Bulgaria, the new regulation (2018) expected in Estonia, the new condominium law (2013) in Italy. All these are contributing or it is expected that will contribute to ease the requalification process, but a lot still have to be done and all level institutions will better keep a constant look on the development of the whole process chain.

One interesting outcome of this work is offered by the comparison Estonia and Bulgaria situation, where the initial contexts (construction typology, social mix) were quite similar, but the current achievements are quite different. Estonia managed in about 20 years to activate a process, which is gradually leading to the refurbishment of its existing housing stock, while in Bulgaria more time will be needed.

Interesting is also the outcome reported from Italy, where the private initiative of some housing cooperatives succeeded in leading complex energy qualification projects, in a context where still very few is happening.

### 3 Part B Communication and marketing

✓ **Experiences from test cases**

✓ **Bulgaria**

Currently, the activities related to the energy renovation of condominium housing in Bulgaria are concentrated within the legal, organizational and communication framework of the National Program “Energy Renovation of Bulgarian Homes” implemented with the financial aid from the structural EU funds.

**Case Study: nZEC – Energy refurbishment of 13 dwellings in Zaharna Fabrika block 11, Sofia, Bulgaria**

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecascstudies\\_pi3%5Bid%5D=201](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecascstudies_pi3%5Bid%5D=201)

**Main points of interest**

- The case study is about energy retrofitting of a multi-family condominium building located in Sofia, total area 1256 m<sup>2</sup>; three-storey building of brickwork on concrete skeleton, built in 1946, owners’ assembly with 13 members established in 2012.
- The building is of a multi-storey apartment type (condominium); owners’ assembly was established to carry out a project for energy renovation of the building.
- The project implementation strictly followed the requirements of the National Program „Energy Renovation of Bulgarian Homes“ during its first pilot phase.

**Communication aspects**

- As a first step the Ministry of Regional Development with the support of the targeted municipalities organised an intensive information campaign and gave via road show, TV advertisements, publications in the national and regional media. An overall communication strategy targeted the homeowners as end users.
- As a second step an initiative groups of interested homeowners collected all available information and organized discussions with their neighbors the advantages of the energy renovation – to stop energy losses, financial savings of 30-50%, investment with clear pay-back period, new generation of energy saving construction materials, intelligent heating solution, improved living standard, increased property price. At this stage all available and circulating information materials are among the most important communication tools.

- Special attention is given to the existence and the capacity of the Housing Renovation Fund.
- Crucial step was to call a General Assembly of the homeowners in order to reach and vote a commitment to start preparatory activities and to get involved in the National Program „Energy Renovation of Bulgarian Homes“.

### **Case Study: nZEC – Energy refurbishment of 17 dwellings in Prof. Giovanni Gorini Street 2, Sofia, Bulgaria**

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecascstudies\\_pi3%255Bid%255D=202](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecascstudies_pi3%255Bid%255D=202)

#### **Main points of interest**

- The case study is about energy retrofitting of a multi-family condominium building located in Sofia, total area 1200 m<sup>2</sup>; 5-storey building of brickwork on concrete skeleton, built in 1939, owners' assembly with 17 members established in 2011.
- The building is of a multi-storey apartment type (condominium); owners' assembly was established to carry out a project for energy renovation of the building.
- The project implementation strictly followed the requirements of the National Program „Energy Renovation of Bulgarian Homes“ during its first pilot phase.
- The homeowners were living in the building during all phases of the energy renovation project including the construction phase.

#### **Communication aspects**

- As a first step the Ministry of Regional Development with the support of the targeted municipalities organised an intensive information campaign and gave via road show, TV advertisements, publications in the national and regional media. An overall communication strategy targeted the homeowners as end users.
- As a second step an initiative groups of interested homeowners collected all available information and organized discussions with their neighbors the advantages of the energy renovation – to stop energy losses, financial savings of 30-50%, investment with clear pay-back period, new generation of energy saving construction materials, intelligent heating solution, improved living standard, increased property price. At this stage all available and circulating information materials are among the most important communication tools.
- Special attention is given to the existence and the capacity of the Housing Renovation Fund.
- Crucial step was to call a General Assembly of the homeowners in order to reach and vote a commitment to start preparatory activities and to get involved in the National Program „Energy Renovation of Bulgarian Homes“.

### ✓ Estonia

Apartment associations in Estonia don't construct new dwellings but renovate the existing buildings. It is not common practice for apartment associations in Estonia to prepare specific communication materials for apartment owners. Usually, the documents sent before the general assembly from the board to apartment owners should provide all the information that the owners need to make the decision for renovation.

Therefore, the part B will focus on the communication practices and materials of promoting energy efficiency among apartment associations in Estonia. The Housing and Energy Efficiency Division of Fund KredEx and the Estonian Union of Co-operative Housing Associations (EKYL) are the main promoters for energy efficiency in the existing housing stock in Estonia. They provide information for apartment associations on implementation of energy efficiency measures in apartment buildings and manage information pertaining to energy conservation in apartment buildings. Three successful communication materials examples from Fund KredEx<sup>10</sup> and EKYL for apartment associations will be presented in Annex 2.

### *Case Study: nZEC - Energy refurbishment of 60 dwellings in Tuleviku str 10, Rakvere, Estonia*

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecascstudies\\_pi3%5Bid%5D=169](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecascstudies_pi3%5Bid%5D=169)

### Main points of interest about the project

- The case study refers to an energy retrofitting of a multi-family building located in Rakvere, 4399 m<sup>2</sup>, 5- storey, built in 1977, apartment association with 60 members established in 1990
- The building is a divided ownership type, operated as association

### Communication aspects

- The first step was the presentation of energy audit results made by independent expert to the board members of apartment association
- The second step was the presentation of energy audit results to apartment owners on the general meeting. Again independent energy expert was invited to the meeting to explain the renovation. Based on the communication and information available, apartment owners made decision to start renovation.
- The most convincing element for apartment owners was the discussion of rising energy (district heating) costs.

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<sup>10</sup> [www.kredex.ee](http://www.kredex.ee)

**Case Study: nZEC - Energy refurbishment of 40 dwellings in Võidu str 42, Rakvere, Estonia**

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecasestudies\\_pi3%5Bid%5D=170](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecasestudies_pi3%5Bid%5D=170)

**Main points of interest about the project**

- The case study refers to an energy retrofitting of a multi-family building located in Rakvere, 1889 m<sup>2</sup>, 5- storey, built in 1989, apartment association with 40 members established in 1998
- The building is a divided ownership type, operated as association

**Communication aspects**

- The first step was the presentation of energy audit results made by independent expert to the board members of apartment association
- The second step was the presentation of energy audit results to apartment owners on the general meeting. The board of apartment association itself convinced owners to vote for renovation. Based on the communication and information available, apartment owners made decision to start renovation.
- The most convincing element for apartment owners was the discussion of rising energy (district heating) costs.

✓ **Italy**

**Case Study: nZEC - New construction of 142 dwellings in Bazzana Inferiore, Assago, Italy**

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecasestudies\\_pi3%5Bid%5D=187](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecasestudies_pi3%5Bid%5D=187)

**Main points of interest about the project**

- New construction composed by 4 buildings.
- The 4 buildings are certified class A+ according to the standards of Lombardy Region.
- The housing is subsidized by Lombardy Region Funds for Social Housing.



### Communication aspects and Marketing strategy

New interventions are promoted through the Internet site<sup>11</sup> and also through the SHO magazine. The website reports all the characteristics of the intervention, as regards both to the design choices (architectural aspects, heating systems, etc.) and to other aspects, such as the proximity to services (e.g. subway stop, hospitals, etc.) .

According to Regional law, new buildings must respect energy minimum requirements, which are less restrictive than an A+ class. Nevertheless, the SHO decided to build in energy class A+ for several reasons:

- Marketing aspects: potential buyers are interested in “energy saving” dwellings, therefore an A+ class energy certificate gives an added value to the building itself and constitutes a “marketing lever”.
- Promotional, since Cascina Bazzana was built in an area which is not traditionally "competence" of the SH company, therefore it could represent a good example of its construction activity, even if this type of construction implies extracosts for high quality energy efficiency measures. Nevertheless, the cooperative decided to reduce the economical expected margin (consider that the buildings belong to subsidized housing and people will buy at a fixed price per m<sup>2</sup>).

### *Case Study: nZEC - New construction of 16 dwellings in Via Martiri Palestinesi, Cinisello Balsamo, Italy*

[http://www.powerhouseeurope.eu/nc/cases\\_resources/case\\_studies/single\\_view/?tx\\_phecasestudies\\_pi3%5Bid%5D=196](http://www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecasestudies_pi3%5Bid%5D=196)

### Main points of interest about the project

- New construction.
- The building is designed and constructed according to CasaClima directives.
- The housing is subsidized by Lombardy Region Funds for Social Housing..

### Communication aspects and Marketing strategy

The SHO marketing strategy assumes that people who are interest in a cooperative dwelling should have other needs that go beyond the housing one, consequently also the marketing strategy follows a different logic than the traditional market .

Normally, the area surrounding the intervention has been studied in order to understand what are the main requirements especially in terms of services: this is done by the SH company in collaboration with the Public Administrations and with the Local Districts, so as:

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<sup>11</sup> [www.ferrucciodegradi.coop](http://www.ferrucciodegradi.coop)

- combine the new building project and the local initiatives;
- avoid an “attack” of the social and urban fabric already present by the new site.

The communication phase normally follows three steps:

- an initial press conference to present the project in general terms;
- organization of/participation in initiatives of various kinds, mainly with schools (both high and primary), which also call for the participation of the locals. With regard to construction projects in energy conservation, informative events are created on the topic in which they are involved schools of various levels. Collaboration with the Bicocca University is active for the purpose.
- traditional advertising as part of the various initiatives in the area;
- when works have been already started, open days are organized, to make people getting in touch with the building technical features (e.g. insulation).

### ✓ **The situation in the 3 Countries**

#### ✓ **Bulgaria**

There is already sufficient practice of the communication strategy and practice applied within the implementation of the National Program “Energy Renovation of Bulgarian Homes”. Therefore, CAC asked some experts and active homeowners to describe their experience in promoting the energy renovation of multi-story apartment buildings. The main issue is the involvement and commitment of the homeowners in activities to renovate their homes.

#### Input from the experts and active homeowners

At present, the topic of energy renovation of multi-story apartment buildings is getting in the top political agenda. The whole state machine is engaged in the communication strategy promoting the National Program “Energy Renovation of Bulgarian Homes”. However, the commitment of the homeowners as end users is still not at the level to guarantee the smooth program implementation. The main reason is the public opinion inertia and some major problems in the sustainable development of the housing system in Bulgaria. Therefore:

- The communication campaign needs to overcome the superstition of the end users that public funds are not used properly.
- The communication campaign needs to build up trust in the fair rules of the procedures and the professionalism of the appointed project managers of the program.
- The communication campaign needs to stimulate the homeowners and to enable them to take a proactive role in the overall decision-making process.
- The communication campaign needs to convince the homeowners in the transparency of all procedures and the technological and financial profitability of the renovation activities from the perspective of the end users.
- The communication campaign needs to answer three main concerns – trust, trust trust!

### Project partner position

The communication strategy when implementing energy renovation projects with the extensive use of public funds needs:

- To show and prove clear and transparent rules and procedures;
- To provide comprehensive and reliable specific information about sustainable energy renovation of condominiums;
- To fully support the homeowners during the overall project implementation process.

The communication strategy should be end users oriented and to empower the homeowners and their future associations to take a proactive role in the overall process of energy renovation of condominiums taking into account the fact that the homeowners are co-investors and need to act in the full extent of their responsibilities. From this point of view, empowerment means good practices knowledge, technological competence, organizational training, institutional support and financial back up.

### ✓ **Estonia**

EKYL asked some experts to describe their experience about how to organise communication for convincing apartment owners to renovate their building. Some board members of apartment associations were asked to talk about their concrete experiences.

### Input from the independent experts and board members of apartment associations.

- The first communication about energy efficiency and renovation usually starts in apartment association when apartment owners find their dwellings uncomfortable or energy bills too expensive. Usually, small initiative group of apartment owners starts work with the aim of changing the situation and achieve energy efficiency in the building. In this step, all available information materials are essential, like brochures from KredEx or EKYL. As result, the energy audit will be ordered.
- Important mistake that apartment associations tend to make, is accept the audit without asking presentation from the auditor. The presentation of audit results to apartment owners is important part of communication before making decision to start renovation. The presentation is actually training for apartment owners who may not have any knowledge about the topic before and therefore don't feel sure enough to vote for renovation on general meeting.
- Apartment associations in Estonia don't have energy expert or project management. If the board of apartment association doesn't have competence to organize renovation process, it will be necessary to hire energy expert and project manager who actually help a lot in the communication with apartment owners. They have the information and experience to explain and answer the questions during the renovation process from apartment owners that the board cannot answer.

### Project partner position.

The main aspect of communication regarding apartment associations is the communication between board members and flat owners (members of the association) and communication between associations and banks/grant institutions. It is especially important during the preparation for energy refurbishment as well as during the renovation process itself. Therefore, the Estonian Union of Co-operative Housing Associations estimates highly the initiatives to support apartment associations in the communication process with different services. For example, today it is possible for apartment associations to invite an energy expert from KredEx to participate the general meeting or professional from EKYL to organize the general meeting and therefore support effective communication in the apartment association.

### ✓ **Italy**

Once new buildings have been finished, communication and marketing aspects come into play.

Finabita asked some experts to deal with their technical experience about how to make a profitable communication about low energy buildings, and then asked to some Housing managers to talk about their concrete experiences.

### **Input from the experts**

Finabita contacted some experts in terms of marketing and communication strategy in order to focus on the following topics:

- Which are the pillars for a successful communication and marketing strategy when the product is a nZE building?
- How SH companies can benefit of nZE buildings on the real estate market?

Here, some technical indications are reported:

- SH company should focus on what are the needs and the characteristics of the potential buyers, even through a research. This should help in addressing the design and the realization of residential buildings and, after, might help in addressing in a correct way the marketing strategy. Normally experts observe that buyers are not interested in home as a building, but in home as a *lifestyle*, which is a mix of different components, some of them directly depending on the construction elements (well insulated walls, presence of a garden), while others depend from the surrounding context (e.g., public transport station in the nearby, distance from the down town).
- SH company should invest also in households' training, in order to obtain the "real" energy consumption and consequently reach very low energy efficient building with "guarantee of result". The real low consumption create trust and credibility in the SH activity and start a virtuous circle for future constructions.

### **Input from housing managers**

Finabita contacted some associated Housing companies and directly ask them:

- why they decide to join the low energy building philosophy, even if nowadays, in Italy, there is not yet a binding definition nor standards;
- how they promote their “nZE” choice among the buyers? In other words, which are the pillars of the communication and marketing strategy?

In the following paragraphs, some experience are collected and reported. We decided to put the roadmap of each SH company toward energy efficiency constructions standards, since these three routes are very different one to each other but very interesting.

### AbitCoop Modena

- In 2005, the SH company joined the CasaClima world: CasaClima is the first energy certification system of buildings in Italy, before the introduction of the Legislative Decree n.192/2005 (transposition of the First EPB directive). Abitcoop has tried to focus on a procedure that could be **easily recognizable** by the shareholders thanks to the "plaques" that are placed outside of the buildings and report the energy performance class. Since 2006, about 90% of the constructions was built according to the CasaClima voluntarily certifying guidelines, even though, in the meantime, in Italy the obligations of the energy certification have entered in force.
- Another important element in the decision of join to CasaClima procedures is that the energy certification, thanks to a series of inspections during the construction phase, gives a **guarantee of performance** in terms of energy consumption for space heating. The correspondence between estimated energy need and real consumption is key theme of communication and marketing strategy. This "performance guarantee" generates confidence in buyers, especially among young people, who often require high energy performance for homes, in order to have fewer running expenses.
- The CasaClima system, however, requires a scientific and accurate organization of the production process which often normal construction companies do not have. According to the experience of Abitcoop, construction costs of buildings classified in class A according to CasaClima standards are **higher by 2-3%** compared to the costs of a class A according to the classification of the Emilia -Romagna Region. But what makes the difference is how class A is reached, therefore the procedures that guarantee the energy performances.
- The building energy performances depend also from household behavior, therefore Abitcoop organized CasaClima **training courses** for owners/tenants with the aim to train them for proper energy administration of housings.

### Cooperativa Andria

- The SH company has chosen to build high performance energy buildings to meet the expectations of families and at the same time to anticipate the requirements that should enter into force by 2020: in their opinion, the "house" has a useful life that extends beyond the legislative minimum requirements. In order to meet the needs of potential buyers, the cooperative has promoted a huge search, which revealed that buyers are not interested in home as a building, but in **home as a lifestyle**, which could be define as a mix of high energy

performances comfortable buildings, nice district and good services. The pillars of the communication and marketing strategy are based on this concept.

- An example of communication is reported in Annex 3: it is the recently built district known as "The Sky of the Sun" (in Italian, "Il Cielo del Sole"). This name comes from the Divine Comedy by Dante Alighieri, where the sky of the sun was occupied by wise people: this name would emphasize that **users of these new houses must be "wise"**, they must know how to manage home to reap the greatest benefits in terms of energy consumption and bring it close to zero. Buyers are honoured with an electric bike as well as a space to do the garden.
- As for the higher costs, these interventions are characterized by prices congruent to the services they offer: architecture and systems solutions are individuated in that congruent direction. E.g., in the mentioned intervention, there is not mechanical ventilation systems with heat recovery, because the SH company considers them too expensive and not fitting the lifestyle of buyers, but there is the possibility to create solar greenhouses .

### Cooperativa Murri

From the early 2000s, the company has started its journey towards sustainability, in collaboration with the University of Bologna - Faculty of Architecture, Department of Regional Planning. At present, activities focus on:

- Construction of new buildings in class A, with guaranteed results that are verified by the consumer.

For several years, the SH company has built only "class A" buildings, with demand for space heating below 40 kWh/m<sup>2</sup> per year (energy standards of Emilia –Romagna Region). After the sale, consumption monitoring is still performed for a year to check on the one hand the systems correct functioning and then to check if there is correspondence between the fuel consumption calculated in the project and the actual ones, keeping in mind that the latter depend not only by the customs of the inhabitants but also by other factors, including :

- level of occupancy of the entire building : presence of adjacent empty dwellings (and therefore cold ) affect negatively on energy consumption;
- level of drying of the building coat, which, having a considerable thickness, dries much more slowly than in traditional buildings and this could affect negatively on energy consumption.

In these buildings, when fully implemented, the goal is a heating energy bill of 250 € for 100 m<sup>2</sup> of dwelling.

This kind of low-energy buildings is considered by the buyers high-level homes, so latter are already prepared to support a higher price. The construction costs of this kind of low-energy buildings are in line with those proposed by competing manufacturers, but SH company offers a plus services, which is the monitoring service that acts as a "guarantee" of energy performance. Until nowadays, there have been no complaints on the energy consumption aspect. Furthermore, the housing management is explained thoroughly in the post-sale service and the user manual is provided: even before that, when booking accommodation at the cooperative level, the

sustainable approach is widely explained, taking in account all issues scheduled for energy savings, such as site analysis, attention to guidance, summer comfort, natural ventilation.

Before the crisis in the construction industry, low-energy buildings were sold very well, since there was the so-called "replacement market", which consists of those buyers who left the old apartment for a new better-quality house, where quality includes not only reduced energy consumption but also a set of other factors, including, for example, the location of the building.

- Design of "nZE" dwellings – SESAMO project.

The SH company is planning to build nZE buildings nearby Bologna. They were stimulated by the achievements of the architect Mario Cucinella, in particular with regard to the idea of building nZE houses with low construction costs. Furthermore, the SH company aims to build homes no longer in prototype form but as a standard, thus initiating industrialization of the product and the process. Source of inspiration was also the intervention "Homes for Gio.Co." by Coop Andria Correggio.

The SESAMO project consists in semi-detached houses, with no attic nor basement, two floors, with garden and a car park. The construction will be made by cellular concrete bearing blocks (dry processing with reduced drying times), outside there will be a coat in multi-por, more impact-resistant and nicer than a normal polystyrene one. It will be in bearing blocks for which is not necessary a reinforced concrete structure. The villas will be also equipped with the PV system (3 or 4 kWp). The estimated construction cost will be around 1000 €/m<sup>2</sup>, but probably they can contain further, while the selling price will be around € 2,000 /m<sup>2</sup>. To develop this type of housing, there must be some boundary conditions, including the building area with low density (low ratio edification).

For the promotion of this initiative, the website will be modified as to provide an actual "home configurator", just as it does for cars.

An evolution of this type of housing is also planned in a "condominium" layout: it will consist in a 3-floors-building, 13 apartments with geothermal energy systems operating and with low construction costs. This type of model can be interesting for a low-cost solution, in particular when dealing with Social Housing.

### *Project partner position*

From the Housing managers experiences, we can argue that the costs of a nZEB are often higher than the standard, and consequently, especially in this crisis market, the hardly buyers could recognize higher price than the average. What is certain is that the EU Directive 31/2010 provides that, by 31 December 2020, all new buildings must be nZEB. So rather than a choice, that of energy conservation is increasingly a requirement for operators. According to Legambiente<sup>12</sup>, today there is no economic or technical reason that can prevent all new buildings to be designed and constructed to reach very low (A class) energy, and that they can count on contribution of renewable energy installations to reach essentially zero energy consumption. In recent years were built hundreds of

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<sup>12</sup> See "Tuttiin classe A", Legambiente report, 2012.



buildings in Class A and it is demonstrated that the incidence on the construction cost compared to a traditional building varies in a range between 5 and 10%.

Communication and marketing have a crucial role, in order to meet market demands with SH companies offers.

In the following, we try to summarize some Lessons learned from the experiences of the Housing managers and Experts. Is important to bear in mind that real estate market strongly depends from local conditions.

- When speaking about communication and marketing strategy in case of residential sector, it is important to bear in mind that SH company do not sell a building but a “lifestyle”, therefore it is important to individuate the target buyers both in terms of needs but also in terms of price. To do so, a research could be helpful.
- Buyers require dwellings with good ratio between price and quality, unfortunately often nZE performances are not considered a quality point. The SH company should be able to stress on this concept. For instance, organizing “open days” during the working phase could be helpful in order to bring people getting in touch with nZE features and technology in the buildings.
- In many Italian regions, energy certificate is an obligation when the building is for sale, but SH company should consider it as an opportunity to stand out from competitors (not SH): they can make the difference with buyers in post-sale phase, for instance proposing the energy consumption monitoring the for the first year as a guarantee of energy performances.
- SH company should share their project for new constructions with the households in the territory, where quarters and district buildings are already established, in order to enter in a harmonious way and in continuity with the present. In this case, initiatives with local schools or laboratories for children/guys are recommended.
- SH company should make the difference in post-sale phase informing and training buyers about not only energy behaviour but also about all the problems that could affect household when living in a very-high insulated home (e.g. mould, condensation) and give directions about how to avoid/solve them.



### ✓ Conclusions Part B

Project partners have described different aspects of the importance of a good communication in order to promote low energy projects.

In Bulgaria and Estonia the issue concern almost entirely existing building refurbishment, while Italy reported mostly about new built, where communication is a vital marketing asset.

Bulgarian Housing Association reports the importance of the current National Program “Energy Renovation of Bulgarian Homes”, and the importance of demonstrating to end users (apartment owners) that the program is worth and the funds are fairly managed by the State. So the main objective of communication should be building trust among the owners towards the program and the opportunity to form an owner association and undertake deep renovation works.

Estonian Housing Association also reported the importance of communicating correctly the opportunities offered by the National KREDEx Fund, but also stressed the importance of a good communication between the actors involved in the renovation project, in particular the management board of the apartment association and the owners. Crucial appears to be the initial presentation of the advantages and implications of the renovation projects at the very beginning, where the involvement of an experienced energy expert with good communication skills can make the difference.

Italian Housing Cooperatives work also with new construction buildings. This requires good communication and good marketing between the provider and the potential buyer. Energy efficiency is a quality appreciated by the public. Unfortunately the energy performance certificate alone is not always enough to convince the potential buyer of the quality of the building. For this reason more and more housing cooperatives have started in the recent years to adopt voluntary protocols for design of low energy houses, such as CasaClima, or Passive House, which are generally well known and appreciated by the public. Other cooperatives have started to guarantee result in terms of max. energy consumption of their new houses, in order to create confidence towards the potential buyers. All these actions are interesting, because they bind the cooperatives to improve their construction practices all the time.

The following Annexes present a collection of web and printed communication materials, which focus on low energy and nearly, zero energy building. Looking at these materials, it seems clear that “nearly Zero Energy” is just one of the many names used to call an energy efficient house, a concept which at the moment is not yet enough defined and in the understanding of non expert people doesn't yet tell much. Lot of work has to be done also in this sense, but good communication will necessary have to follow a clear definition of the standard/ concept.







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