POWER HOUSE NEARLY ZERO ENERGY CHALLENGE

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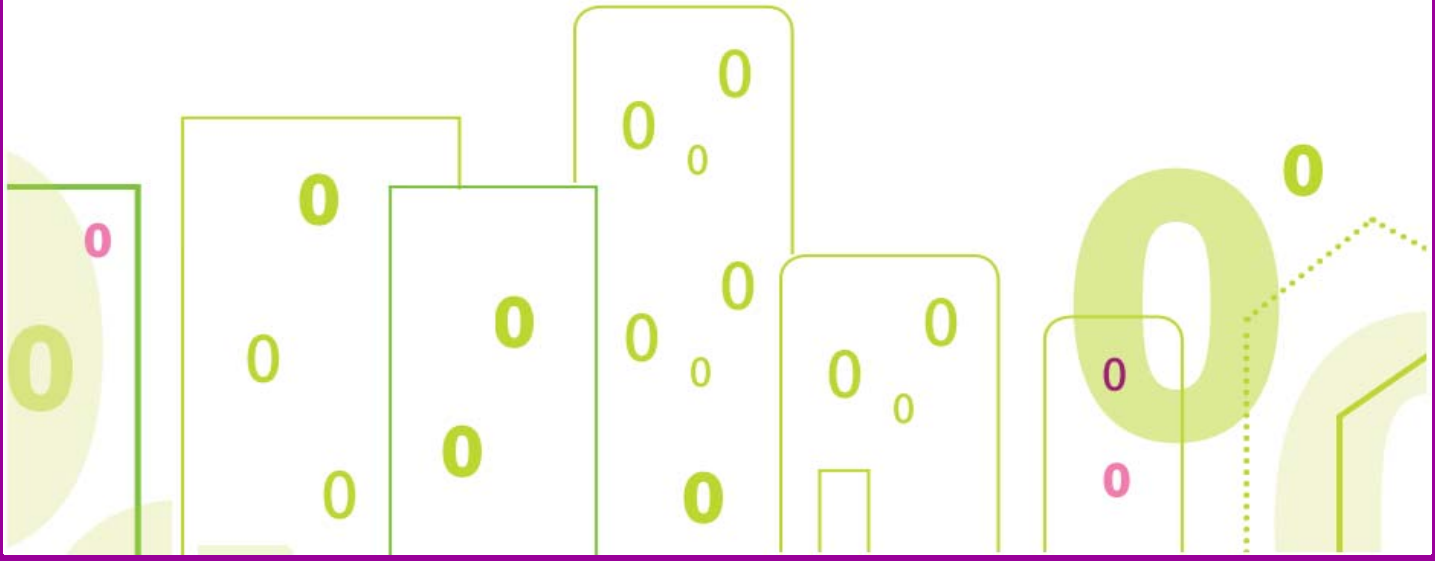
NEARLY ZERO ENERGY HOUSING IN DIVIDED OWNERSHIP

NEARLY-ZERO ENERGY BUILDINGS IN DIVIDED/COOPERATIVE OWNERSHIP

TaskForce report on obstacles to nearly/Zero Energy refurbishment in multi-owned buildings



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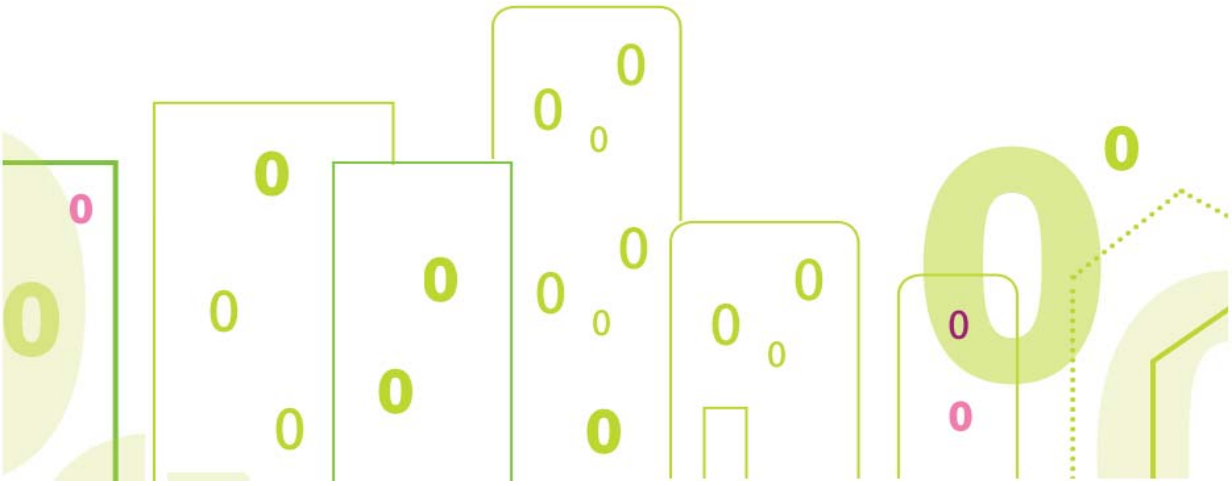
Date of finalisation:

February 2013 (updated in September 2013)



Contents

1 Introduction

The scope of this deliverable is to describe the main issues which prevent the penetration of the Nearly Zero Energy standard in divided and cooperative ownerships housing. In this study we will look both at new built and refurbishment projects, investigating the current situation in the 3 member states where the taskforce partners are based: Bulgaria, Estonia and Italy.

Since the standard of Nearly Zero Energy is still new, and yet has to be fully defined in most member states by mean of regulation and reference values, we have relied on the knowledge of several external experts which work in the three Countries. In addition, a group of local housing members of CAC, EKYL and Legacoop Abitanti has been created or will be created, in order to get feedback from the practitioners “real” world and in order to establish a better communication to facilitate the circulation of results of the results of Power House Project.

These two groups, external experts and local housing members, will be consulted for the entire duration of the project and has already contributed to the production of deliverables 3.1 and 6.1. Information on the two groups is reported in detail in Annex1.

2 Input from partners

Bulgaria

✓ **Method**

CAC identified the obstacles to nZEB, using the following main methods:

- Collection and revision of previous analysis of the obstacles preventing NZE building spread in Bulgaria;
- Analysis of the obstacles to nZEB in Bulgaria deriving from the implementation of projects for the energy efficient renovation of condominium buildings in the last two years;
- Experts' estimations related to nZEB in Bulgaria.

The list of external experts and local housing members that were contacted is reported in Annex 1.

✓ **Main obstacles**

The main obstacles for the implementation of nZE standard in residential buildings are:

- Insufficient number of expertise in the chain of activities related to implementation of NZE housing – design stage, construction stage, maintenance and management stage;
- High level of initial costs needed for NZEB;
- Lack of financial support on behalf of the government - there are no targeted (direct) subsidies or specific tax reliefs for the purpose;
- Lack of specific legislation.

In addition, the specific obstacles for the low-energy refurbishment of condominium housing in Bulgaria are:

- The high costs required in combination with the dispersed tenure structure of condominium buildings;
- The great differences in income level of residents from condominium buildings;
- The newly approved (2009) Law for Management of Condominium Buildings (2009) does not provide sufficient opportunities for an efficient decision-making process for tackling the renovation activities at building level.

The required measures to overcome these barriers include:

- Development of a specific state policy towards financial support of NZEB in housing;
- Development of a legal framework for NZEB based on existing EU level documents;
- Awareness raising and information campaign about the advantages of NZE housing.

✓ **Positive factors**

- Increasing availability of subsidies targeted at energy efficient renovation of condominium housing;
- Increasing public awareness about the NZE building approach;
- Delayed process of large scale renovation in multistory housing while the energy efficiency norms that must be followed continuously increase their values;
- Permanent trend in higher energy prices.

Estonia

✓ **Method**

EKYL identified obstacles to nZEB, using different methods:

- Previous analysis of obstacles to nZEB in Estonia (made by VTT Technical Research Centre of Finland) was used as the bases for the list of obstacles for building process and low-energy construction;
- The opinion of experts and a of a selected group of members of EKYL was collected and analyzed as the basis for the list of obstacles in refurbishment and private/cooperative housing (in Estonia housing cooperatives are only responsible for renovation, not designing or building new houses).

The complete list of external experts and EKYL members which was contacted is reported in Annex 1.

✓ **Main obstacles**

The obstacles for low-energy construction in Estonia, according to the survey made in Estonia in April 2012 are:

1. The lack of interest by constructors – the construction sector is responding slowly to the problems caused by high energy prices
2. Designers are considerably old-fashioned and not willing to learn about new technologies
3. Few good best practice examples- there has been only one very low-energy building in Estonia and without decent successful examples the interest in low-energy construction will be extremely difficult to be raised

The obstacles for low-energy refurbishment in private/cooperative housing in Estonia are:

1. The interest in energy conservation remains low- the situation is going better with every year but it is still one barrier for the growth of the demand for energy efficient residential buildings
2. High prices – due to the income distribution between different socio-economic groups, there is a large part of population who cannot afford the investment to low-

energy refurbishment. Also building in Estonia hold a large potential for energy efficiency improvements, renovation will be fairly expensive.

3. Lack of targeted subsidies – the funds of reconstruction grant for apartment associations exhausted in 2012. The grant was designed for associations and communities wishing to reconstruct their apartment buildings as completely as possible. Today, the strong need for new reconstruction grants is developed.
4. Lack of information – more information about cost-effectiveness and cheaper solutions is needed
5. Problems with decision-making process in housing associations- in Estonia, members of housing associations (it means apartment owners) have to make the decision of refurbishment in the general assembly of the association. Due to financial problems or lack of interest among the apartment owners, housing associations often have to admit that they cannot start the refurbishment because of resistance of apartment owners in the general assembly.
6. Lack of skills and know-how – a challenge to be coped with is the lack of know-how especially in technical issues among the members of apartment associations

✓ **Positive factors**

1. State provides financial aid for energy efficiency improvements and also serves as an example by implementing energy saving actions
2. Because appr 50% of old dwellings are anyhow in need of refurbishment, it may be seen as positive factor, as energy efficiency improvements could be incorporated in these activities
3. The level of interest in low-energy refurbishment is still slowly growing
4. The definition and requirements for nearly zero-energy buildings have been developed together with the new level of minimum requirements for energy performance of buildings

Italy

✓ Method

In July 2012, Finabita has contacted some of the major Italian experts in the field of energy efficiency. The interviews were made by mean of telephone, in order to discuss the main identified obstacles. The expert list, question list and short answers are reported in Annex 1.

✓ Main obstacles

1. Differences in local regulations

The regulation of buildings energy requirements in Italy is a shared responsibility between the State and the 21 Regions and Autonomous Provinces. As stated in the Legislation Report, energy policy in Italy is partially delegated to Regions and Autonomous Provinces, leaving the drafting of the general framework to the central government while Regions have the final power and duty to adapt their individual requirements. Regions are in charge of the entire energy certification system, which is based on regional registries and databases.

The presence of different local regulations combined with the national ones makes the regulatory landscape not clear for professionals, practitioners and construction companies, which have sometimes to work with different definitions of the same things, and consequently affect negatively the construction and the refurbishment in the nZEB standard.

This unclear regulatory landscape about energy certification makes difficult the definition of a nZEB, and consequently the construction of this typology of buildings.

This obstacle is relevant both for retrofitting and especially for new buildings.

2. Absence of private financing actors

In Italy banks and ESCo are reluctant to engage in long-term energy efficiency financing contracts and tend to prefer short term investments. Furthermore, there is uncertainty not only on the investment but also on the saving finally achieved and on the future price of energy.

3. Lack of appropriate public funding for energy refurbishment

ENEA estimated that appropriate funding for existing buildings are needed in order to achieve the energy performance of a nZEB in a cost effective way.

Since 2007, in Italy financial regulations allowed house owners to recover up to 55% of the refurbishment costs by tax deduction: the retrofit needs to respect energy efficiency minimum requirements which are defined for each type of measure. This regulation does not belong to an energy efficiency program but it has been re-approved every year: this uncertainty does not work properly in terms of "nealy zero" energy refurbishment. Often the process of total energy retrofitting takes a time horizon which is not compatible with the financial regulations one: building design, finding contractors for the refurbishment works and the works itself take normally more than twelve months. Thereby owners are not interested in scheduling intervention in terms of total energy refurbishment, but only about single energy requalification interventions. Furthermore, this financial incentive is not accessible to Cooperatives, even if they are among the most interested subjects in energy refurbishment.

Another issue is the variation of the above mentioned regulation. The National Decree n. 201/2011 (the so called "Salva Italia") confirmed the financial "tax deduction" regulations for the year 2012. In June 2012, the National Decree n. 83/2012 has been approved and announced that the percentage of tax deduction for energy retrofitting in buildings will be reduced from 55% to 50% for the interventions that will take place in the first six months of 2013. Furthermore, in the same time[1], the percentage of tax deduction for general home maintenance works has been increased to 36% up to 50%.

ANIT argues that this regulatory panorama will cause a devaluation of energy retrofitting (e.g. people might prefer to change the toilet furniture instead of improving the insulation of the building envelope) and conflicts with the roadmap to nZEB implementation.

4. Lack of skills and know-how

According to Klima Haus Agency experience, in Italy the building sector has not yet sufficient skills in order to build up low energy constructions.

Furthermore, there is not yet a deep knowledge about concepts regarding the construction and the use of nZEB, especially among the following categories:

- Customer/owner of the building: do not have an energy efficiency approach in case of new buildings, thinking that nZEB is not an economically sustainable model;
- Tenants: are not informed about the advantages of a nZEB.

In fact, one of the main obstacles to solve in case of energy retrofitting of Divided Owneship is to find out an agreement between all the different owners. The disagreement is due mainly

[1] Cfr. AGENZIA DELLE ENTRATE - "Ristrutturazioni edilizie: le agevolazioni fiscali" – August 2012

to the absence of correct technical information about nZEB characteristics and advantages. The training of tenants/owners could play a key role in case of Divided Ownership and in refurbishment. Training should inform about two main themes:

- The energy performance of a dwelling is significantly influenced by the behaviour of the tenants which live in.
- A nZEB (new and refurbished) should be a cost effective house.
- Real extra costs for nZEB.

5. Decision making process complicate for refurbishment

In case the Cooperative is working managing a building where the apartments are owned by the residents, every decision concerning the retrofitting of the building has to be agreed by all the owners, otherwise only partial retrofit measures can be taken. In the cases where the Cooperative owns the building there are fewer problems from this point of view, as the Cooperative pays itself for the works. But still the residents must be consulted and in practice the process id difficult in case the large majority of residents don't approve.

✓ **Positive factors**

1. The definition and implementation of nZEB could be considered a good occasion to stimulate the housing market, and to provide new work opportunities for the housing practitioners.
2. The final users could influence the housing market demand asking for high energy performing buildings. The process could be lead by the demand.
3. In Italy as well as in most European Countries, the reduction of energy consumption would bring down the energy dependence from foreign Countries since fossil fuels used to provide space and water heating and to generate electricity are almost completely imported.

3 Conclusions

There are similarities between the barriers identified in the three Countries, issues which have emerged also at the Cecodhas conference “Power House meets Solar Decathlon”, held in Madrid in September 2012.

The most important issue is the need for clear regulation: operators still don’t know what is in practice a nZEB, and as a consequence is difficult to make one.

On the financing and funding side, there is defiantly more need for tools and schemes to support retrofitting than new built.

In terms of skills and know how, the situation is definitely better for new built, where it is more clear which technologies to use and how, than in retrofitting, where there is very small experience in terms of deep renovation and operators don’t yet know exactly what is best to do, how, and how to avoid possible side-effects. Furthermore, regarding existing building stock, there are also some technical issues (e.g.: heating plant distribution) that could not be modified in order to obtain “nearly zero” energy performance.

The decision making process is an issue which concern mainly retrofitting, where different financial capacity of owners makes difficult to take decisions; this problem is less evident in cooperative ownership housing, where the cooperative face directly the refurbishment costs while the tenants only indirectly /for example by mean of a higher rent).

According to the experts, the nZEB could play a key role for economy: on one side, it could become a good occasion to re-start for the Housing market, with the involvement of all the actors of the process.

Market appeal for low energy houses and nZEB in particular is a key issue.

✓ **Priority table**

For each main barrier identified and each sector, a priority has been given by mean of a mark in a scale from 1 to 5: 1 not very important, 5 very important. "-" means that the issue doesn't apply to the context of the Country or sector. "BU" stays for Bulgaria, "EE" Estonia and "IT" Italy.

	Divided property						Cooperative property					
	New			Retrofitting			New			Retrofitting		
	BU	EE	IT	BU	EE	IT	BU	EE	IT	BU	EE	IT
Regulation	4	-	4	4		4	-	-	4	-	-	4
Costs and financing	5	-	2	5	5	3	-	-	2	-	-	5
Skills and know how	2	-	2	2	4	5	-	-	2	-	-	5
Decision making (refurbishment)	-	-	-	3	3	5	-	-	-	-	-	3
Market appeal	3	-	2	3	2	2	-	-	2	-	-	2

Annex 1: External Experts and Local Members

✓ **Bulgaria**

✓ **External experts**

Title	Name	Surname	Expertise/ Organization
Mr	Peter	Kamburov	HVAC engineer
Mr	Zdravko	Genchev	Architect, energy expert
Mr	Zdravko	Georgiev	Engineer, energy expert
Mrs	Alexander	Vodenicharov	Engineer, energy expert

✓ **Local housing members**

Title	Name	Surname	Housing association
Mrs	Slavka	Atanasova	Chairwoman of HOA from renovated condominium building (Zaharna Fabrika estate, bl. 10, 1345 Sofia
Mrs	Maria	Miletieva	Chairwoman of HOA from renovated condominium building (Zaharna Fabrika estate, bl. 25, 1345 Sofia
Mrs	Tanya	Yordanova	Chairwoman of HOA from renovated condominium building (Lyulin 1 housing estate, bl. 30, 1343 Sofia

✓ Estonia

✓ External experts

The experts contacted are:

Title	Name	Surname	Expertise/ Organization
Mr	Aare	Vabamägi	Licensed energy expert
Mr	Raimo	Jõgeva	Expert of cooperative housing associations in Tallinn and Harju County
Mrs	Dagmar	Mattiisen	Expert of cooperative housing associations in Tartu County
Mrs	Kalli	Mägar	Expert of cooperative housing associations in Pärnu County

✓ Local housing members

The members contacted are (name and housing association):

Title	Name	Surname	Housing association
Mrs	Tiiu	Varik	Järveotsa tee 5 KÜ
Mrs	Maret	Priske	Paldiski mnt 169 KÜ
Mrs	Tiia	Põldmets	Roopa 2 KÜ
Mr	Anvar	Kima	Sõpruse 202 KÜ
Mrs	Reet	Tüür	Tüve tn 14/16 KÜ
Mr	Ragnar	Kuusk	Sütiste tee 45 KÜ
Mrs	Vaike	Suur	Kärberi 13 KÜ
Mr	Arvi	Paalandi	Endla 24 KÜ
Mr	Peeter	Lauring	Jaama 4KÜ
Mr	Jaanus	Luhaäär	Nõlvaku 1 KÜ
Mrs	Ljudmilla	Ljulko	Suur-Karja 18 KÜ
Mrs	Galina	Lepik	Tähe 69A
Mrs	Valentina	Valtson	Puhangu 55 KÜ
Mr	Priit	Keskla	Pagusoo 9 KÜ
Mr	Alar	Teras	Roheline 10 KÜ

Comments from local housing experts:

- The main question of HOAs today is how to minimize the cost of heating and renovate the existing buildings in the most cost-optimal way. The ideas of nZEB or passive house are excellent visions for the new housing stock in future but don't have practical value for people living in the blocks of flats in Estonia today

- nZEB roadmap is useful for the state and government to understand the perspectives of developments but what apartment houses today really need is common solutions from engineers and architects for refurbishment of buildings in bad condition built in Soviet-time

- That's a fact that it's not possible to achieve nearly zero or passive standard in our multi-apartment buildings with refurbishment. The continuous renovation and change in the habits of residents is the key to more energy-efficient living environment in Estonia.

✓ **Italy**

✓ **External experts**

During summer 2012, some of the experts have been interviewed in order to find out more about the legislation and definition status and the obstacles to nZE buildings.The experts contacted are:

Title	Name	Surname	Expertise/ Organization
Mrs.	Valeria	Erba	ANIT (Italian Association for Thermal Insulation)
Mr.	Paolo	Degli Espinosa	Fondazione Sviluppo Sostenibile (National Coordinator of the Nearly Zero Building Board)
Mr.	Ulrich	Klammstainer	Casaclima (Agency of energy certification of Bolzano Province)
Mr.	Norbert	Lantchner	Climabita (International energy expert)
Mr.	Francesco	Nesi	Zephir (Zero Energy and Passivhaus Institute for Research, affiliated to the Power House Institute)
Mr.	Gaetano	Fasano	ENEA (National Energy and Research Agency)
Mr.	Edoardo	Zanchini	Legambiente (League for the Environment, the most widespread environmental organization in Italy)
Mr.	Francesco	Toso	CRESME (National research centre)

These are the questions which were made to the external experts and their answers.

<u>Legislation and definitions.</u>

1. Is it possible today in Italy to provide a definition of nearly Zero Energy Building?

(Erba) There is not a final and legally binding definition for nZEB yet. A nZEB is characterized by a nearly zero annual heating demand: the very few heating requirements should be satisfied by RES.

(Degli Espinosa) There is not a final and legally binding definition for nZEB yet. The process of definition is going in this way: a nZEB should be characterized by an energy efficient envelope and it also uses RES.

(Klammstainer) There is not a final and legally binding definition for nZEB yet. The process of definition is going in this way: a nZEB should be characterized by an energy efficient envelope and it also uses RES.

(Lantschner) There is not a final and legally binding definition for nZEB yet. nZEB will be individuated by the housing market demand.

(Nesi) There is not a final and legally binding definition for nZEB yet. nZEB could be considered as a Passive House.

(Fasano) There is not a final and legally binding definition for nZEB yet. The process of definition is going in this way: a nZEB should be characterized by an energy efficient envelope and it also uses RES. Not Passive Houses since they have problems in summer.

(Zanchini) There is not a final and legally binding definition for nZEB yet. A nZEB is a building with an A class energy certification plus RES.

(Toso) There is not a final and legally binding definition for nZEB yet, but the concept of "nearly zero" is itself a definition.

2. By 2020 all new buildings should be nZE: which are in your opinion the key elements to reach this target?

(Erba) Standards about the efficiency of the envelope must be defined. More control during the construction phase by a supervisor entity.

(Degli Espinosa) Importance of the role of Public Administrations: new buildings occupied and owned by public authorities must be nZEB starting from 31/12/2018, so two years before than other kind of property. This could be a good occasion to design and implement “pilot projects” and to disseminate nZEB concept among people.

(Klammstainer) Introducing the concept of SMART LIVING not only energy efficiency living. SMART means sustainable.

(Lantschner) The housing market will individuate the requirements for nZEB; it will be a bottom- up approach. More transparency in the housing market. Involvement of the Local Public Administration.

(Nesi) Bottom -up approach: nZEB standards could be reached by technicians using the Passive House protocol in order to design and build very low energy consumption buildings.

(Fasano) Definition of nZEB standards. Definition of the role of RES (on site/ off site) nZEB.

(Zanchini) Involvement of the technicians but also of the final users of nZEB (tenants and households).

(Toso) Definition of standards. Life cycle costs analysis for the building material. Importance of the training of the tenants and households in order to obtain the expected energy savings.

3. In your opinion, what could be the right legislative path to get to the results of only nZE new buildings from 2020?

(Erba) There are round tables among professionals, construction material associations, ENEA, Ministry to implement the process of definition of a nZEB

(Degli Espinosa) Definition of nZE standards, definition of the requirements values, possible definition of intermediate standards, incentives.

(Klammstainer) Energy regulatory simplification at national level; new public funding; more control in energy certification especially during construction phase; co-operation with SH associations in order to involve tenants.

(Lantschner) Energy regulatory simplification at national level; more control in energy certification especially during construction phase.

(Nesi) Improve national energy regulation (summer question); training of technicians and final users (comfort of the households as an additional important effect).

(Fasano) The roadmap to define nZEB standards is not easy in Italy: it will be a synergy between 3 Ministries (Infrastructures, Environment and Economic Development).

(Zanchini) Increase the transparency of the housing building process.

(Toso) Round open tables among professionals, material association, politicians to guide the process of definition of a nZEB. Training of users and actors of the Housing market (technicians)

4. Which are the stakeholders involved in the process of changing the construction practices to nZE?

(Erba) Manufacturers of construction material and system (e.g.: thermal insulations); banks; actors of the housing markets (households, coops,ecc.)

(Degli Espinosa) Key role of the owners and banks

(Klammstainer) Banks, dwellings administrators, buildings designers (technicians), construction companies, final users, supervisor entity, SH companies.

(Lantschner) Buildings designers (technicians), construction companies, final users (tenants and households), supervisor entity, SH companies, energy producers (in conflict with energy saving themes).

(Nesi) Buildings designers (technicians), construction companies, final users.

(Fasano) All the actors of the housing market and the residential sector.

(Zanchini) All the actors of the housing market and the residential sector.

(Toso) Manufacturers of construction material and system (e.g.: thermal insulations), SH coops, banks. As far as now, not all the stakeholders have the same force in the process. Banks are normally the stronger and they are quite reluctant to engage in long term energy efficiency financing contracts.

5. Do you think that the housing sector will be involved in the process? With which role?

(Erba) Inform residents about the advantages of a low energy consumption house in order to influence the nZEB market demand.

(Degli Espinosa) Important role: could influence final demand in the housing market

(Klammstainer) An active role.

(Lantschner) An active role.

(Nesi) Inform tenants about the advantages of a low energy consumption house.

(Fasano) An active role.

(Zanchini) An active role.

(Toso) SH coops should join in order to create a critical mass to influence the policy maker.

6. What is the state of the application of the optimal cost methodology in Italy?

(Erba) Not approved yet. Quite complicated because of the presence in Italy of different climate zones. There are also some technical issue regarding the summer context.

(Degli Espinosa) Not ready yet.

(Klammstainer) Not ready yet.

(Lantschner) Not ready yet.

(Nesi) Not ready yet: before it is necessary to define the standards for a nZEB.

(Fasano) Not ready yet, many differences among regions. It is difficult to harmonize the different price lists coming from different Italian areas. Probably it will be pointed out a unique and national price list to be used as a reference for the evaluation of the return time of the investment.

(Zanchini) Not ready yet, difficult to find an agreement between the different stakeholders.

(Toso) -

<u>Technical and non technical barriers to the construction of nZE buildings</u>

7. In a scale from 1 to 5, how difficult is in Italy to build a new building in the nZE standard?

(Erba) 1.

(Degli Espinosa) 1.

(Klammstainer) 4.

(Lantschner) 2.

(Nesi) 0-3 depending on designer know how.

(Fasano) 0

(Zanchini) 5

(Toso) technical knowhow 2; skills 4; management of the whole building process 4.

8. In a scale from 1 to 5, how difficult is in Italy to refurbish an existing building (for example from the '70) in the nZE standard?

(Erba) 3-4.

(Degli Espinosa) 3-4.

(Klammstainer) 5.

(Lantschner) 5.

(Nesi) 5.

(Fasano) Impossible without dedicated incentives: no economic return.

(Zanchini) -

(Toso) 5.

9. Three factors which limit the construction/ refurbishment of buildings in the nZE standard

(Erba) Lack of skills/know how of buildings companies, designers, energy certificators; lack of adequate funding.

(Degli Espinosa) Lack of specific public funding; lack of involvement of the owners in the decision process.

(Klammstainer) Energy regulations; managing the building construction with a correct cost/benefit analysis; lack of skills; lack of know how among technicians.

(Lantschner) Construction companies/ technicians/ users prejudices about the building costs.

(Nesi) The biggest barrier is the know-how and skills in the design and construction phase. If correctly designed and managed, the payback of a PH is less than 10 year.

(Fasano) Regarding the new building, no barrier; public funding are spread and not targeted; definition of energy standards for summer consumption.

(Zanchini) Lack of transparency in the construction process; lack of information among the users.

(Toso) Skills/ know-how of buildings companies, designers, energy certificators; difficulty in finding materials; difficulty in managing the construction phase in a cost effective way.

10. For what concern Housing Cooperatives, do you see specific barriers for this sector in adopting the nZE standard?

(Erba) No.

(Degli Espinosa) No.

(Klammstainer) Lack of know how in the decision process.

(Lantschner) Prejudices about the building costs among tenants and in the decisional process for new building

(Nesi) Sometimes absence of involvement of the client in the decision process. The client (S.H. coops) must be adequately informed about low energy consumption houses.

(Fasano) No access to public funding for refurbishment for Cooperatives.

(Zanchini) No.

(Toso) No.

Factors which could facilitate the adoption of the nZE standard

11. Which factors are facilitating the construction of nZE buildings in Italy?

(Erba) The current public financing for energy efficiency in refurbishment (55% tax deduction), even if is not enough for a total building refurbishment. The incentive system must be improved in this direction..

(Degli Espinosa) The current public financing for energy efficiency in refurbishment (55% tax deduction).

(Klammstainer) The current public financing for energy efficiency in refurbishment (55% tax deduction).

(Lantschner) The current public financing for energy efficiency in refurbishment (55% tax deduction).

(Nesi) The current public financing for energy efficiency in refurbishment (55% tax deduction).

(Fasano) The current public financing for energy efficiency in refurbishment (55% tax deduction).

(Zanchini) The current public financing for energy efficiency in refurbishment (55% tax deduction).

(Toso) The current public financing for energy efficiency in refurbishment (55% tax deduction) is good but more control is needed.

12. Which factors could facilitate in the future the construction of nZE buildings in Italy?

(Erba) The problem is, especially for refurbishment, the initial funding, so banks must be involved.

(Degli Espinosa) The current public financing for energy efficiency is good but insufficient. Banks must be more involved.

(Klammstainer) More research about energy savings technologies is needed. Necessary to solve some technical issues (e.g. summer context). The nZEB issue could become a good occasion to re-start for the Housing market.

(Lantschner) The current public financing for energy efficiency in refurbishment (55% tax deduction) must be improved and programmed in a long-term prospective. The introduction of a nZEB will contribute in reducing energy dependence of Italy.

(Nesi) The current public financing for energy efficiency is good but insufficient. Banks must be more involved.

(Fasano) In the next future, public fundings are not necessary for new buildings but only for refurbishment. The introduction of a nZEB will contribute in reducing energy dependence of Italy.

(Zanchini) In the next future, public fundings are not necessary for the new buildings but only for refurbishment. The introduction of a nZEB will contribute in reducing energy dependence of Italy.

(Toso) More involvement of banks.

13. In your opinion the nZE building could be a cost effective one? Why?

(Erba) Yes, but the life cycle of the nZEB must be based on a costs/benefits analysis.

(Degli Espinosa) -

(Klammstainer) Yes

(Lantschner) Yes

(Nesi) Yes

(Fasano) Yes, if the housing market process is transparent.

(Zanchini) Yes.

(Toso) Yes, but the life cycle of the nZEB must be based on a costs/benefits analysis.

14. Do you think that your answer to the previous question could be true also for the housing cooperative sector?

(Erba) Yes

(Degli Espinosa) -

(Klammstainer) Yes

(Lantschner) Yes

(Nesi) Yes

(Fasano) Yes

(Zanchini) Yes

(Toso) Yes

Examples of nZE buildings in Italy

15. Are there examples of nZE buildings in Italy? Where are they located?

(Erba) Casa Kyoto in Gavirate (Lombardia, refurbished).

(Degli Espinosa) Program "10 cantieri " in co-operation with ENEA (New).

(Klammstainer) Examples in Südtirol and by Legacoop (KlimaHaus class A and A+, new).

(Lantschner) Examples by Legacoop Bolzano (KlimaHaus class A and A+, new).

(Nesi) Passive Haus Web site (new)

(Fasano) ACER Reggio Emilia CASA MEDITERRANEA

(Zanchini) Pesaro (construction phase), Tricase, Foligno.

(Toso) N.A.

✓ **Local housing members**

At this stage of the project the group of local members to be consulted is still under definition. Representative of the Cooperatives which will contribute to the project presenting their projects as test cases (see Deliverable 3.3), will also be included in the group of local members to consult periodically. These are Cooperative Ferruccio Degradi (Milan), Unica (Florence), AIC (Rome) and Uniabita (Milan). But the purpose is to extend the participation also to the other Cooperatives of Legacoop Abitanti which follow the “sustainability” working group.

Annex 2: 1st TaskForce Workshop

The first divided and cooperative ownership taskforce workshop was held in Madrid on the 27 September 2012.

Program of the workshop:

1. Presentation of Taskforce Needs Analysis Results– Obstacles to the development of Nearly Zero Energy Housing compiled by the Taskforce (Sergio Rossi - Finabita) (15 minutes)
2. Presentation of at least 2 relevant resources to be added to the Powerhouseeurope.eu website by each partner (Rossana Zaccaria – Finabita, Anu Sarnet – Ekyl, Eleonora Gaydarova – CAC) (30 minutes)
3. Presentation from Invited Expert/s (30 minutes): Alessandro Panzeri – ANIT, the Italian association of thermo acustic insulation
4. Presentation of Taskforce Workplan by Taskforce Leader – To be discussed and finally agreed by all (Sergio Rossi - Finabita) (15 minuts)

5. Presentation of List of Test Cases to be monitored and or just described (Rossana Zaccaria – Finabita, Anu Sarnet – Ekyl, Eleonora Gaydarova – CAC) (30 minutes)
6. Discussion (30 minutes)

Together with the representatives of the taskforce project partners, the meeting has been enriched by the participation of representatives of HSB (Swedish Housing Cooperative), NHF (English Housing Association), VSWG (German Housing Cooperative Association) and NABCO (Irish Housing Association). The invited external expert was Alessandro Panzeri from ANIT (Italian Thermo-acoustic Insulation Association).

Here there is a brief summary of the contribution from the participants:

Mia Torpe (SABO, Sweden)

“The situation in Sweden is similar. However there are quite a few good examples of nZEB. Both new and also retrofitted ones.

Regarding competence, I think we are on track even if there still is a lot to learn.

The crisis is financing in order to get on with the renovation process for the most vulnerable people, this is the big issue.

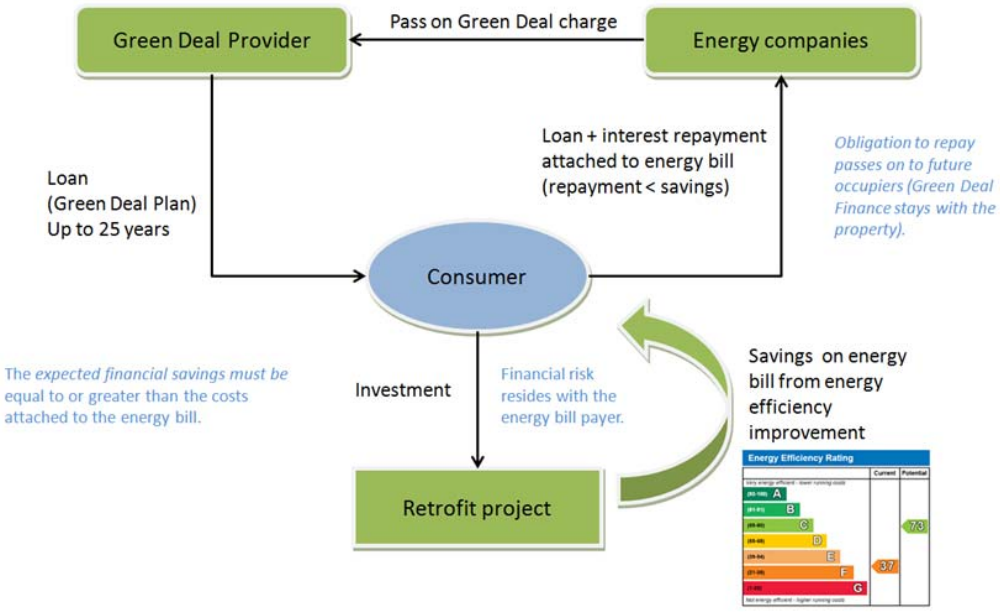
We hope that the Structural Fund might help a little.

We have the same problem as Italy regarding regulation - it is on the municipality level and there are 260 of them. Just in this period there was a proposal from the government to have national rules but that means very low energy performance. Local governance has better goals so the discussion goes on.

We also have tax reduction for internal retrofitting but not for energy efficiency and we have had a discussion on that to for years with no result”.

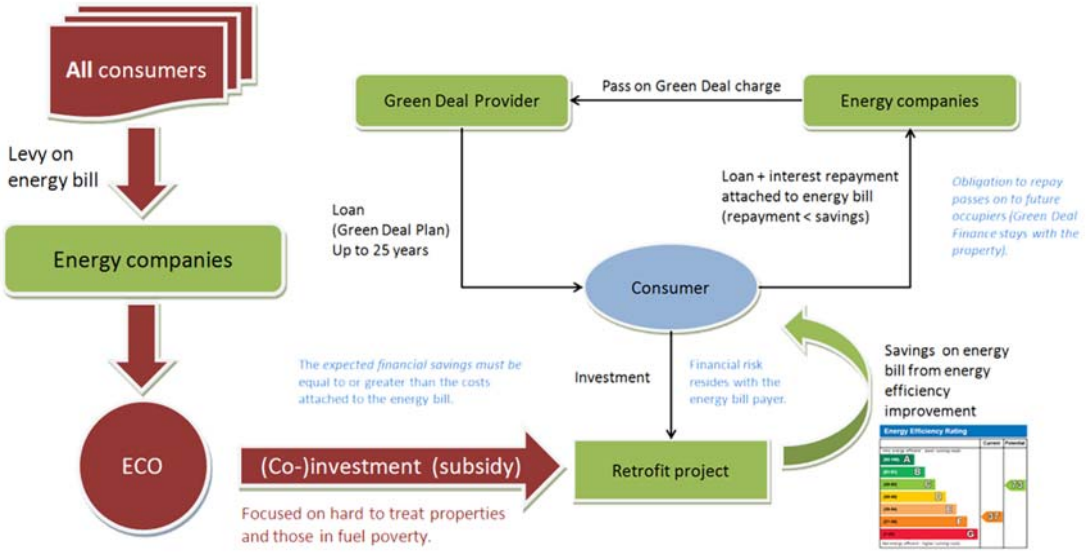
Arno Schmickler (NHF, England)

In England, a new scheme called the “Green Deal”, aims to increase uptake of energy efficiency improvement measures. The principle idea is that an energy assessment is carried out with recommended improvement measures leading to energy savings. Based on the assessment a finance model is developed with commitment from a Green Deal provider to implement the energy efficiency measures at no up-front cost. The investment loan and interest is recovered through the normal energy bill payment, whereby the overall savings on the energy bill over a period of time (up to 25 years dependent on live expectancy of the implemented measure) should be higher than the initial costs. The Green Deal is a three-way contract between a Green Deal provider, the property owner/occupant and an energy company (see diagram below).

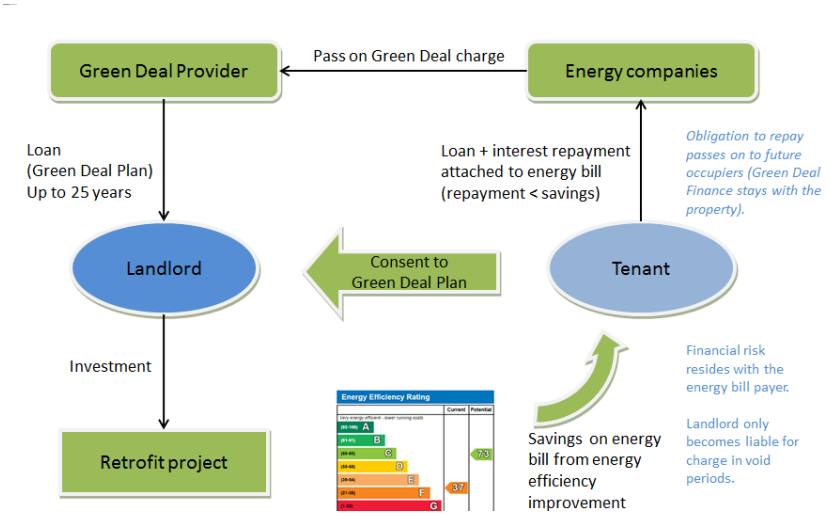


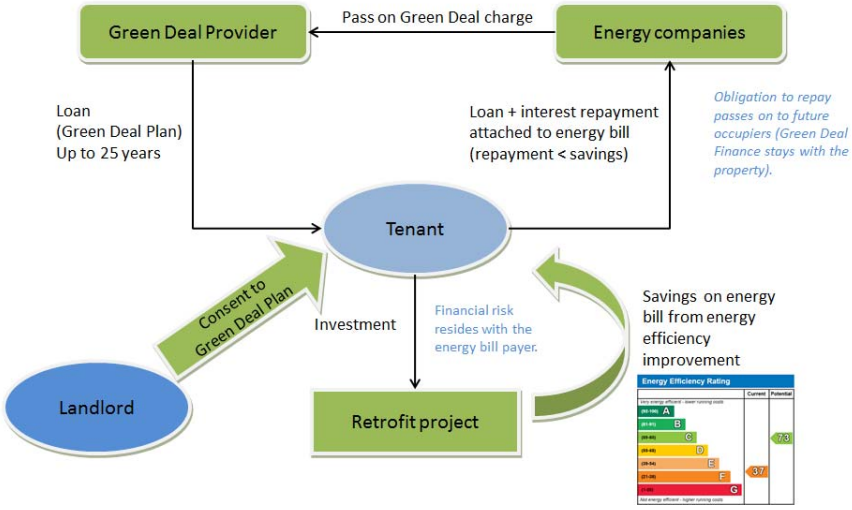
To apply this scheme in the social housing sector a number of obstacles need to be overcome:

1. Tenants in fuel poverty: for this group of tenants it is very likely that the property is underheated and the envisaged energy improvement works might therefore not result in the anticipated financial savings but a warmer home. Whilst this is a positive outcome as such it voids the financing model. For energy improvement works a combination of loan and grant financing is required; this is partly being addressed with the introduction of Energy Company Obligations (ECO) which can be used to subsidise the investment (see diagram below).



2. Green Deal in the rental sector: need for consent, financial risk and mixed ownership: in rental properties consent is required for either party to take out a Green Deal, e.g. the landlord needs to give consent to a tenant and vice versa (see diagrams below). Whilst the primary financial risk resides with the energy bill payer (i.e. the tenant), the landlords becomes liable for charge in void periods.





Owing to the UK right-to-buy scheme social housing dwellings may be under mixed ownership, e.g. rented, part-owned (shared ownership) or outright owned. This poses a barrier in carrying out energy efficiency improvement works in apartment blocks.

Another barrier to nZEB in the UK is inconsistency and a multitude of planning and building regulations which apply to properties. Depending not only on the year that planning consent was given, but also on the local authority (which have certain freedoms to apply/adjust requirements for building performance according to local priorities) and the funding regime (e.g. which public/private funding programme a property is developed under) different energy performance requirements and definitions apply.

For further information, please visit www.powerhouseeurope.eu

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