TRAINREBUILD
Training for Rebuilding Europe

Training on Financial Mechanisms

Training Manual/Toolkit on Financial Mechanisms

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TABLE OF CONTENTS

1 Toolkit Overview

1.1 Toolkit Purpose

The training modules for the financial mechanisms of building retrofitting for energy efficiency and renewable energy technologies are to support the European Training Forum of the TRAINREBUILD project.

The design of the following toolkit modules is intended to reflect both the needs of trainers for Property Owners Organisations and Local Authorities through the Covenant of Mayors signatory cities, as well as the needs of property owners directly.

An iterative process, allowing for continuous improvement and feedback from the trainers, has been implemented in order to ensure the effectiveness of this toolkit at the local level. It is intended that this document will continue to be reviewed and customized at the local level to ensure wide-scale applicability and effectiveness. Each member state, region, city and community may have different financing processes and procedures that may be different than those profiled here. Trainers and property owners are encouraged to work with local authorities, property owner associations, and financial experts at the local level before acting on the information contained in this toolkit.

1.2 Development Process

Development of specific training modules has involved other TRAINREBUILD partners in coordination with the Laboratory on Financial Mechanisms. Training modules have been designed in partnership with those consortium members responsible for direct training activities through a series of training workshops targeting trainers for property owners and local authorities.

The appropriate local project partners may add to or adapt these financial mechanisms training modules by including criteria specific to certain member states, regions, and localities supported by members of the Laboratory and local experts identified through Laboratory networks.

This toolkit will be further refined based upon the feedback from the next meeting of the Laboratory on Financial Mechanisms, scheduled for February 2012, and from the feedback and support request that are received from the first set of trainers, also commencing in February 2012 and running through June 2012.

1.3 Continuation

As the training modules that are being developed will be “institutionalised”, the toolkit is being developed according to an on-going iterative process. This allows trainers to receive support as they adapt this toolkit in the most effective way to address local resources, conditions, target audiences, and contingencies. This iterative process is

necessary to better secure the continuation of the training schemes after the project is finished and reach the overall objectives.

Trainers, local authorities and property owners are encouraged to submit their feedback and support requests regarding this toolkit on financial mechanisms to:

info@trainrebuild.eu

The overall project objectives are intended to have a large-scale impact with the increased uptake of building retrofitting by individual and small-scale property owners throughout Europe. These objectives include the development of an on-going platform, awareness of available financial mechanisms, generation of greater interest on the part of banks in offering new financial products for retrofitting, and an increase in the level of bank financing for retrofitting based on the demand for these products.

TRAINREBUILD intends to create an on-going educational platform to research, develop and disseminate relevant and appropriate financing information to financial professionals and other key stakeholders in TRAINREBUILD to be energy-efficient and energy secure. This outreach must be designed to be reflexive in light of various local, regional and national contingencies.

Regarding financial mechanisms, specifically, materials will be customized at the local level to reflect rapidly changing conditions in financing and fiscal instruments, and adapt the financial mechanism scenarios to better match the local experience.

1.3.1 **Awareness**

One of the greatest potential strengths of the TRAINREBUILD initiative is the potential to increase awareness of financial mechanisms supporting the retrofitting of buildings and energy generation. Key stakeholder groups, such as landlord, property owners, property managers, and financial professionals can be reached through local training and outreach initiatives launched by the Training Forum and it's partners.

The ultimate goal is to see a 5-10% increase in the participation with retrofitting programs by the target groups in at least 3 national associations in the priority countries. This will be impacted not only by the availability of financing in target countries, but also by the ability of property owners and local authorities to effectively navigate the complex and constantly changing landscape of existing programmes as the local, regional, and national levels.

1.3.2 **Banking Products**

Originally, TRAINREBUILD intended to generate further interest in banks and financial institutions to act as intermediaries and co-financiers for public energy efficiency and building retrofitting funds. The potential aim of 5-10% increase in private banking participation benchmarked from 2009 levels to the end of the project was proposed.

This goal has come into question by the Laboratory on Financial Mechanisms for a number of reasons.

- It will not be possible to increase bank participation unless there are specific interventions on the part of national governments and EU-level policy makers.
- Banks may not be the best partners for such types of special financing because most publically backed instruments are seen as being potentially competitive with traditional forms of bank financing. In the absence of specific public policy interventions, banks have very little incentive to participate, although several examples have been found of successful public-private financing schemes in certain countries.
- Additional research has indicated that there is no empirical evidence that a bank-driven strategy will make this goal credible, especially in light of tight credit markets that have resulted from the on-going financial crisis and real estate market volatility.
- Most finance providers have indicated that they will develop financial products for energy efficiency retrofitting and renewable energy integration into buildings if they can be assured that consumer demand is sufficient enough to ensure a profitable and economically sustainable offering.

The current strategy of the Laboratory on Financial Mechanisms is to see if the increase in awareness on the part of property owners can create enough interest on the demand-side to move banks and financial institutions in this direction.

1.3.3 **Increased Bank Financing of Retrofitting**

TRAINREBUILD's original aim was to effect a 5-10% increase in private bank and financial institution financing in each of the priority countries for building retrofitting benchmarked from 2009 levels to the end of the project.

The Laboratory on Financial Mechanisms has also questioned this goal. If retrofitting has gone through traditional bank financing mechanisms that cover general property improvement and renovation, it may be difficult to attribute any increases in retrofitting financing through current data collection and financial reporting methods. Additionally, in light of the Laboratory findings under section 1.3.3, specific government interventions will be required, which are out of the scope and resources of this project.

Currently, most financial institutions offer financing for energy efficiency retrofitting and renewable energy integration through their traditional channels or mortgage, second-mortgage and consumer credit products. As a result, measuring the increase in financing going to renewable energy retrofitting may be a difficult task. At the same time, this goal is fully achievable within the scope of this project.

1.4 How to Use the Toolkit

This toolkit has been divided into eleven sections, with appendices offering additional information and resources.

This document was not intended to be exhaustive, rather, it is offered as a starting point to provide trainers and property owners with the ability to seek out specific information and resources at the European, national, regional, and local levels, and to respond to changing conditions with public policy, building regulations, financing programmes, and building technologies.

Since property owners associations and local authorities are the specific target audience of the project, a more reflexive process based on the expressed needs of property owners has been implemented. Each section should be seen as a starting point of educating property owners and local authorities of *possible* methods and practices. Due to the complexity and risks inherent in any building renovation project, specific contingencies may not necessarily be covered by this toolkit. Property owners and local authorities are encouraged to do additional research on financing

1.5 Toolkit Objective - Financial Mechanisms

1.5.1 About Financial Mechanisms

A *financial mechanism* is the core concept for the financing of building retrofitting. *Financial mechanisms* are generic (i.e. the financial strategy described in a 'financial mechanism' has, in principle, to be applicable to any EU country).

Specific country-by-country application is needed to see how and whether a particular mechanism is potentially operational in a specified market. *Financial mechanisms* are not an inventory, for instance, of current bank policies. In this case, *financial mechanisms* represent the strategic description of a *potential way* in which the financial management of retrofitting *could be* implemented.

We are currently researching the practical applicability of various 'financial mechanisms'. These mechanisms are not mutually exclusive; often more than one could be combined into a broader strategy.

The financial mechanisms that are currently considered to be viable by the Laboratory on Financial Mechanisms include the following features and criteria in their composition: relational complexity, influence, and large-scale dissemination.

1.5.2 Stakeholder Relationships

What is the best way to address the complex relationships between property owners, renters, banks, building professionals and local authorities? How do all of these groups interact with and around financial mechanisms?

In most cases, this occurs in a manner that is both structurally and resource contingent. This means that the technical difficulty, inconvenience and costs of retrofitting a building, as well as personal financial considerations, tend to take precedence over any specific public policy or financial programmes from the perspective of the property owner.

Moreover, energy efficiency is not a single market. It covers measures diverse and multiple ranges of end-user sectors, end-use equipment and technologies and

consists of very large numbers of small-to-medium sized projects that are geographically scattered with a highly dispersed range of decision makers and stakeholders. Saying that there is an "energy efficiency retrofitting value chain" is very premature at this point. There is neither enough cohesion between various stakeholders and there is no single public policy front to tie all of these processes together.

Although, many energy efficiency technologies are proven and economically viable, if not properly financed, the investment costs may not be paid back over reasonable periods (especially not from energy cost savings). Obviously, other motivations may exist for retrofitting, but wide-scale adoption will not happen until the economic case has been fully developed or energy prices demand action. As a result, projects with convincing economic returns are not being implemented. Major causes for this gap are the lack of energy efficiency finance and delivery mechanisms that suit the specifics of proposed projects and the lack, in many European markets of finance-ready energy efficiency projects proposed by property owners.[1]

Members of the Laboratory on Financial Mechanisms have consistently reported that that publically backed financial instruments would be the most effective way to address some of these gaps in the short-term; however, this may not be enough to create a large-scale shift of property owners towards retrofitting. Moreover, the current climate of government austerity makes such a solution less likely to happen in the coming years.

Public finance programmes can, at best, *influence* a specific property owner's decision to retrofit. Additional factors, such as the economic, regulatory, and social contingencies on a national, regional and local level also have the ability influence the retrofitting decision.

The recent announcements to reduce feed-in tariffs in the UK and Germany, as well as several other European countries considering reducing, eliminating, or delaying the implementation of feed-in tariffs may have a significant reductive effect on new renewable energy installations (specifically solar and wind).[2]

1.5.3 **Role of Influence**

Given the need for financial mechanisms to both *influence* property owners and *to be influenced by* local and regional conditions and contingencies, financial mechanisms that are scenario-based, easily communicable across various regions, and highly adaptable have been considered by the Laboratory on Financial Mechanisms to be the most effective pedagogical form for the training toolkit on financial mechanisms.

The Laboratory has recommended that this module focus on setting up a basic framework that can then be adapted to local conditions by regional and local trainers

[1] Rezessy, S & Bertoldi, P. (2010) Financing Energy Efficiency: Forging the Link between Financing and Project Implementation, Report prepared by the Joint Research Centre of the European Commission, European Commission

[2] Bringall, M. (2011) Sun set to go down on solar feed-in tariffs, The Guardian (UK), http://www.guardian.co.uk/money/blog/2011/oct/20/solar-feed-in-tariffs-severe-cuts

to better fit with the target audience(s) and their specific capacities and interests. In this sense, trainers do have the ability to influence the decision-making process of property owners, and perhaps they will have the ability to inspire action. However, absent a major public policy initiative, the decision to retrofit is entirely in the hands of the property owner and is subject to the drivers and motivations that are unique to each.

1.5.4 **Large-scale Dissemination**

Scenario-based financial mechanisms are the best method to communicate an idea with which property owners, local authorities, policy makers, building professionals, and financial professionals (all from different countries, regions and backgrounds) may be able to personally identify and disseminate further.

A number of potential scenarios have been included with this toolkit in order to start the process of further elaboration. Trainers are invited to consider developing additional scenarios that may be compelling on the local and regional level in the targeted member states.

2 Target Audience and Profiles

In deploying this tool-kit, trainers should consider the targeted segmentation variables and property owner profiles for the project. These segments and profiles have been developed in coordination with TRAINREBUILD project partners and the Laboratory on Financial Mechanisms.

2.1 Property Owner and Local Authority Segments

The segmentation variables represent a sub-set of property owners with one or more characteristics that cause them to demand similar retrofitting services based on the various qualities of the technologies or methods, such as:

- Price sensitivity
- Return on Investment (ROI)
- Objectives for retrofitting (i.e. part of a larger renovation, desire to enhance property value, enhance occupancy rates, etc.)
- Type of building
- Local regulations
- Local climatic or environmental conditions
- Desired functionality

A true market segment in this sector should meet all of the following criteria:

- It is distinct from other segments (different segments have different needs)
- It is homogeneous within the segment (exhibits common needs)
- It responds similarly to a market stimulus
- It can be reached by a marketing or communications intervention

A market segment is identified when a series of the segmentation variables have been combined and applied to form a relatively a homogenous group of property owners.

Property owners, as an extremely heterogeneous group, cannot be easily segmented by demographics, psychographics, or behavioural characteristics. Even if we undertake this effort, there would be far too many segments to accomplish the task at hand. Nevertheless, we have suggested key target populations segmentation variables to create a project identity and communications programme with the broadest possible reach in order to reach the project objectives.

The defined target audience are individual property owners initially accessible through Property Owners Associations, with and a secondary target that includes the officials in charge with the retrofit of buildings in some Covenant of Mayors (CoM) cities.

A detailed list of segmentation variables has been provided in Annex I, with priority variables identified below.

2.2 Priority Segmentation Variables

A 360-degree analysis process to determine the most effective segmentation variables of focus for trainers was completed in August 2011. The most useful segmentation variables, considering the current project goals and pedagogic considerations, are:

2.2.1 Type of Property

- Single Owner Houses (with a focus on younger demographics)
- Apartment Building - Single Owner, Multiple Dwellings
- Apartment Building - Multiple Owners (Focus on behavioural motivations)

The type of property is one of the primary factors that influence the financing options in addition to the types of renovations likely to take place. Single owner houses generally qualify for mortgages, second-mortgages and consumer credit financing, in addition to on-bill repayment and pay as you save schemes. Tax credits and refunds may also incentivize property owners to renovate, with these being integrated into the financing decision process.

Apartment buildings that are single owner but with multiple dwellings may qualify for additional forms of small-business or capital improvement financing. Apartment buildings with multiple owners may also qualify through owner's syndicates and associations, but generally require a super-majority or unanimous owner approval of such actions before financing can be secured. Generally, the sources of finance for building renovations for multiple owners occur through the syndicates and owner associations that manage them.

2.2.2 Quality of Building

- When it was built? (Age of the building stock.)
- How has it been maintained? (Building qualities.)

Building quality and type significantly influence the overall project costs and, as a consequence, determine the ability to secure financing. Larger projects may also require a regulatory and permitting assessment depending on the specific regulations of other areas. Older buildings with historical designations and classifications may require renovations that comply with local or regional style or façade guidelines.

2.2.3 Social Status or Wealth of Property Owner(s)

- High relative to local economic expectations
- High relative to European Union averages
- Lower relative to local economic expectations
- Lower relative to European Union averages

Obviously, existing resources and economic networks are a extremely significant factor in obtaining financing. Moreover, such demographic considerations may mean the perception of better suitability for traditional financing or may help property

owners qualify for special programs targeting the economically disadvantaged in various member states and regions.

2.2.4 **Number of Properties Owned**

- Single
- Small (less than 5)
- Med (less than 20)

The size of the property portfolio also has a significant impact on financing as well as the cost of financing. Generally, larger property owners, with stable rent receipts are in a better position to access financing and have more options for financing than small landlords or individual property owners. Furthermore, property owners with multiple adjacent properties may qualify for large-scale public redevelopment financing schemes.

Individual owners are more likely to rely on tradition bank and consumer credit financing schemes, however, certain countries and regions may offer special programs for larger property portfolios or large scale developments.

2.2.5 **Target Country**

- Targeted by Property Owner Associations (BE, FR, DE, GR, ES, IT, UK)
- Targeted by Local Authorities (HU, RO, BG, PT, FR)

The target countries are informed by both the terms of the TRAINREBUILD project specifications and the readiness of Property Owner's associations to implement the training programme. Furthermore, targeted countries have also set interesting energy savings goals under the National Energy Efficiency Action Plans (NEEAP):

These segmentation priorities will be continuously evaluated and refined through feedback of the trainers at the regional and local level to support an effective strategy for on-going actions once the project has been handed-off to external organizations.

This segmentation can be particularly useful in targeting information and offering examples and arguments that would most appeal to the targeted segments. An owner of a single 1960's era building with high relative social status in Germany is going to have much different concerns and needs than an owner of multiple buildings built in the 1980's era of lower relative social status in northern Italy. Generally, the arguments and process for coming to a decision to retrofit for energy efficiency, which technologies and materials to use, and then the decision as to how to best finance it, will be highly contingent on local economic, legal, regulatory, climatic, considerations. These segments can help ensure that trainers will send the most effective possible message and provide the most useful materials for each type of audience.

Figure 2.2.5 - Energy Efficiency Targets of EU Member States (NEEAPs)

Member State	Target for 2016	Percent of average consumption
Austria	22 333 GWh	9%
Belgium	28 246 GWh	9%
Bulgaria	7 291 GWh	9%
Cyprus	2 125 GWh	10%
Czech Republic	19 842 GWh	9%
Denmark (calculated by Wuppertal Institute)	16 667 GWh	(Two scenarios) 10.7% 9.2%
Estonia	2 125 GWh	9%
Finland	17 800 GWh	9%
France	139 560 GWh	9%
Germany	231 389 GWh	9%
Greece	16 460 GWh	9%
Hungary	15 955 GWh	9%
Ireland	13 117 GWh	9%
Italy	126 327 GWh	9.6%
Latvia	3 483 GWh	9%
Lithuania	4 652 GWh	9.7%
Luxemburg	1 582 GWh	9%
Malta	378 GWh	9%
Netherlands	51 190 GWh	9%
Poland	53 333 GWh	9%
Portugal	20 841 GWh	9.8%
Romania	32 564 GWh	13.5%
Slovakia	10 338 GWh	9%
Slovenia	4 261 GWh	9%
Spain	116 219 GWh	11.4%
Sweden	41 100 GWh	9%
UK	136 500 GWh	9%
Total	**1 135 708 GWh[1]**	**9.5%**
	1 280 565 GWh[2]	**10.7%**

Source: NEEAPs
[1] With higher consumption in Denmark
[2] With expected savings in Denmark, Ireland and UK

2.3 Property Owner Retrofitting Profiles

The profile of the property owner, much like segmentation, is closely linked to the

As part of the initial scoping work completed by the Laboratory on Financial Mechanisms, as well as the segmentation exercise completed through the project communication efforts, four property owner profiles have been developed to better identify those property owners likely to benefit from outreach and training efforts on the part of property owner associations and local authorities. Furthermore, these various profiles may help trainers better adapt their outreach and training methods to

more effectively communicate the benefits of retrofitting and build a larger network within their organisations and communities.

Moreover, these profiles offer additional behavioural and psychographic elements when combined with the segmentation variables. This will allow trainers to further refine the general demographic segmentation when offering training to property owners and local authorities. These profiles descriptions are not exhaustive, and the specific characteristics may vary from locality to locality.

The four profiles consist of the following categories, based on the motivation and likelihood of retrofitting considered in light of the suitability of retrofitting:

1. Retrofitting champions
2. Easy Green Lights
3. Questions Marks
4. No Go's

2.3.1 **Retrofitting Champions (Profile 1)**

The champions are property owners who can provide a positive model to other property owners for energy efficiency retrofitting and renewable energy integration, having decided to move forward with a retrofit or having already completed the process. These will form the basis of the reference groups, opinion leaders, and early adopters necessary to influence a larger audience.

The enthusiasm and positive experiences that the Retrofitting Champions share with other property owners will be instrumental to encourage a broader uptake of the retrofitting agenda. This will create the overall scale and scope necessary to reach the TRAINREBUILD project objectives.

Project partners and trainers that are active in the target countries should identify the *retrofitting champions* that are most likely to share their experiences with other property owners, local authorities, and key stakeholders in their regions. As opinion leaders, these are the people identified by trainers who can best influence the attitudes or behaviors of other property owners. The ideal retrofitting champion should be perceived as possessing expertise about retrofitting, have a high interest in the process and its benefits, and will be willing to open to imparting both the upsides and the downsides that may come with retrofitting.

2.3.2 **Easy Green Lights (Profile 2)**

The 'Easy Green Lights' are those property owners that are in circumstances that appear to be a great position for retrofit and will reach a green light decision on retrofitting fairly easily. Usually it is a question of creating awareness, educating them about the benefits and options of retrofitting, and/or providing some form of support and encouragement through the process.

Trainers should examine their networks for property owners that may interested in the environmental or financial benefits of retrofitting, may have properties that can be

easily retrofitted to good effect, or that may see the largest costs savings associated with retrofitting.

Property owners that are more likely to match this profile may be younger than typical property owners, in a better financial position, belong to environmental or social groups, may be persuaded by an energy and cost savings argument, and/or own property that can be easily and effectively retrofitted with minimal legal, regulatory, or social resistance.

2.3.3 **Question Marks (Profile 3)**

Question Marks are those property owners that may appear to be excellent looking for retrofitting their property, but will not easily to reach the green light decision.

Trainers may encounter property owners that may have properties that can be easily retrofitted to good effect, but they may not be in a financial position to do so, may not be easily persuaded for cultural or ideological reasons, may not be able to pull together financing, may encounter resistance from building or neighbourhood associations, experience problems with local regulations, and/or may have complicated legal issues that could come into play.

Property owners more likely to match this profile may tend to be much older, have several family members or business partners (shared or overlapping titles to property), and/or live in specific regions with unfavourable economic or social conditions for energy efficiency retrofitting. While some of these criteria may present limiting factors, the presence of several criteria may require long term engagement, awareness raising, and public policy support.

2.3.4 **No Go (Profile 4)**

‘No Go’s’ are those properties or property owners that are dubious looking for retrofitting and will not easily reach a green light decision on retrofitting for various reasons. This is the profile that will be the hardest to reach under the TRAINREBUILD programme, and property owners in this profile may not be receptive to or benefit from programme communications or training.

Trainers may encounter property owners that may have properties that cannot be easily retrofitted to good effect. Their buildings may require expensive materials, extensive renovations, or have other legal or design limits. They may not achieve energy savings commensurate with the costs. Moreover, the property owner may not be in a financial position to retrofit, may not be easily persuaded for cultural or ideological reasons, or may encounter resistance from multiple stakeholders and due to a large variety of conditions.

Property owners most likely to match this profile may tend to be much older, have several family members or business partners (shared or overlapping titles to property), and/or live in specific regions with unfavourable economic or social conditions for energy efficiency retrofitting. While some of these criteria may present limiting factors, the presence of many of these factors may require significant effort beyond the resources of the national or regional training and support network.

It may be best for trainers to avoid expending too many resources on property owners with this profile until conditions for retrofitting (such as energy prices, regulations, financing and public policy factors) have evolved.

Figure 2.1 - Matrix of Property Owner Profiles

2.4 Energy Efficiency Retrofitting as Part of a Much Larger Project

The decision to implement an energy saving project depends on several parameters:

1. The need to replace outdated equipment;
2. The willingness to improve comfort;
3. The desire to save on operational costs;
4. Social or behavioural dedication to energy efficiency or environmental stewardship.

The final decision will often be based on economic criteria: the return on investment.

This return on investment (ROI) is assessed over a certain period of time and the evolution of the energy price is one of the key parameters of the calculation of the return on investment. However, it is difficult to anticipate at the outset. Costs of the project may be higher or lower, and the rates of saving may be difficult to determine until the installation is complete. A number of other factors can also add uncertainty to the costs and savings calculations:

- The recent price trend of gas and electricity in EU member states is not necessarily predictive for the future. Power generation on gas and oil depends on a very volatile global market whose exploitation will be more and more expensive.

- In 2010, gas prices fell by an average of -3% (excluded tax) in the European Union, however the price of electricity remained stable for industry and increased 2% for households. In France, gas and electricity prices for households are among the lowest in Europe after Ireland, UK and Luxembourg for gas, and Finland for electricity.

- The share of renewable energies in the total primary energy consumption in France was 7.7% in 2009. The Grenelle has set a target of 23% renewables in final energy consumption by 2020, in accordance with the European 2009 Renewables Directive (http://www.statistiques.développement-durable.gouv.fr).

- After the shocks of the 1970s and the backlash of 1986, the price issue of the demand, the surge in oil prices since 2003 marks the return of the problem of the formation of this price.

- For decades oil has played a key role in energy prices due to its predominant market share. The recollection of past predictions encourages modesty: Wasn't there a consensus in the 1970s on an inevitable increase in oil prices by 3% per year in dollars? With such strong certainties, an international oil company had said in 1999 (when oil prices had fallen to $ 9 / barrel) that oil prices must remain permanently below 15 $ / barrel. Oil companies are not any more likely to do this kind of predictions, even if they have their own scenario for price developments for their investment decisions. In other words, oil prices remain cyclical, but we should expect to see a significant upward trend.[3]

Other factors may also influence the decision to retrofit, with various degrees of influence over the retrofitting process:

- Gentrification Trends / Urban Redevelopment Programmes: As neighbourhoods improve, pressure is put on landlords to increase the quality of their rental properties as rents increase.

- Purchase of a new (existing) building: The need to refurbish and upgrade a recently purchased building offers opportunities to increase energy efficiency as other desired work is being completed.

- Necessity: Condemned property, building inspectors, fire regulations, insurance premiums all may force a property owner to renovate.

[3] Report Perspectives énergétiques de la France à l'horizon 2020-2050, brainchild of the Energy Committee chaired by Jean Syrota).

- Economic need to increase building attractiveness: Property owners may decide to renovate either to lower vacancy rates or to justify higher rents. While tenants may be unwilling to pay higher rent for energy efficiency, they generally are willing to pay higher rents for a more comfortable living environment. The economic crisis is going to play into this, as property owners are going to need premium features to charge you want premium rents.

Owners are generally not motivated to refurbish because it seems that neither the market real estate value will rise, nor will rent be revalued proportionally. However, some elements are commonly taken into consideration when taking the decision to invest:

- Statistically tenants stay in private housing for an average of 4 years in the same dwelling.

- Even though the prospects for return on investment are not excellent, the execution of refurbishment works (not only energy efficiency refurbishments) allows landlords to meet the demand on quality requirements. Energy efficiency refurbishment also helps reduce the risk of prolonged vacancy of property on an uncertain market. Old apartments put on the renting market without being refurbished often require a significant reduction of the rent (about 7%), too avoid risk of too long vacancy that would cause significant losses of rental income (on average around 3 months of rent). In a declining market (where offer is higher than demand), this vacancy can easily exceed 6 months and even up to 18 months. [4]

- Vacant houses in France represent an estimated 7.1% of the building stock according to the INSEE (French Institut National de la Statistique et des Etudes Economique) for whom a vacant unit is an unoccupied dwelling if it is:
    - Offered for sale or rental;
    - Already assigned to a buyer or tenant and is waiting for occupancy;
    - Pending settlement of succession;
    - Maintained by an employer for future use of its employees;
    - Kept vacant and without specific assignment (e.g. a very decrepit property, under renovation, etc.).[5]

[4] Clameur Bilan and Union Nationale de la Propriété Immobilière (2011), UNPI 2011 vacancy survey, www.clameur.fr

[5] INSEE's definition of vacant home: http://www.insee.fr/fr/methodes/default.asp?page=definitions/taux-de-vacance.htm.

3 Financial and Fiscal Instruments

Financial programmes fall into several categories, and in many cases, property owners may utilize multiple financial instruments. In most cases, specific energy efficiency retrofitting schemes are funded or supported in some way by public authorities. However, property owners often seek financing for retrofitting directly from a bank or other institution as part of a bigger renovation or improvement project. Many energy efficiency improvements are incidental in this context.

Chart 3.1 - Exisiting Financial and Fiscal Incentives in EU Member States

	Preferential Loans	Subsidies	Grants	3rd Party Financing	Trading	Tax Rebate	Tax Deduction	Reduced VAT
Austria	1	1	3	2				
Belgium		5					1	1
Czech Republic	1	1	6					
Denmark			1					
Estonia	1							
France	5		2		1	1		1
Germany	3		1					
Hungary	4		3					
Italy	3		1		1	2	1	
Netherlands				1		1	1	
Norway	1		1					
Poland		1		1				
Romania			1					
Slovenia	2		5					
Spain	2		2					
Sweden			1				1	
UK	2		6			2	1	1

Source: EuroACE (2010) Making Money Work for Building Report

Specific financial instruments may be at the national/federal member state level, or may be specific to a region or local area, such as a city or department. EU structural funds and resources from other EU and international sources are also available for renovation works, particularly in the Central and East region countries. Most of these financial or fiscal instruments that are supported with public funds are targeted at energy inefficient apartment blocks, public housing, or other large scale housing complexes. Other fiscal instruments, such as energy tariff (or white certificate schemes) place an obligation on utilities or energy companies, with the initial investment being covered by energy users through their energy bills.

Various forms of loans, tax incentives and hybrid schemes are used on the local level, and the availability and requirements of these programmes can change with little notice. It is up to the trainers on the local level to find out which schemes are currently operating and can be combined with other schemes. (Keeping in mind that some schemes cannot be combined with other schemes, and that most public funds are limited to very specific types of technologies or projects of a certain size or value.)

One should also be aware of the recent finding of the BPIE 2011 survey[6] that highlights the current weaknesses of the financial instruments available in Europe for energy efficiency and renewable technology integration in buildings:

> One major concern is that the use of financial instruments today is only achieving the business-as-usual case in Europe with very few financial instruments providing enough funding for deep renovations. If the goal is to significantly increase the number of deep renovations to meet 2050 aspirations, it will require more innovative approaches than what is seen today. There are steps underway to improve the availability of new financing instruments. Innovative approaches include Energy Supplier Obligations, energy service companies, the use of EU structural funds more effectively and possible targets to renovate specific building sub-sectors (e.g. the proposal in the draft Energy Efficiency Directive to Member States to renovate a certain percentage of public buildings annually) which will require Member States to "unlock" funding for such renovations. (p. 94)

Keeping in mind that many property owners and local authorities rely on multiple schemes or incentives, focusing on combinations of financial instruments, the main categories are:

- Bank/Third Party Financing
- Preferential Loans
- Subsidies
- Grants
- Tax Rebates
- Tax Deductions
- VAT Reductions
- Trading/Energy Certificates

3.1 Third Party/Bank Financing

Third Party financing is the most typical form of financing energy efficiency retrofitting, particularly in cases where it is part of a larger renovation effort. In fact, over 95% of energy efficiency financing for private property owners is financed through third party sources.[7]

With this type of financing, a third-party makes the initial investment in the building retrofit or renewable energy system integration. These third parties may include

[6] Buildings Performance Institute Europe - BPIE (2011); Europe's buildings under the microscope: A country-by-country review of the energy performance of buildings; ISBN: 9789491143014

[7] Interview, Jonathan Rose Companies, Nov. 2011

banks, other financial institutions, investment funds, mortgage brokers, Energy Service Companies ESCO, professional builders or installers, or other relatives, friends, or business partners of the property owner. Building owners must pay back this investment over time.

Because of the risk assumed by the property owner with this type of financing, issues such as interest rates, return on investment (ROI), payback period, and planned vs. actual energy cost savings figure prominently in the decision to retrofit. Furthermore, depending on the type of financing product, national lending regulations, and the specific lending policies unique to each bank, the property owner will be screened for credit suitability and the project may be assessed for other risks. (See Sec. 4 on Risk and Sec 5 on Financing Criteria)

Different forms of this type of financing may involve the possibility of paying back the investment as share of energy savings or production to various forms of lease agreements from installers or equipment providers.

Trainers are advised to understand the point of view of the property owners with third party financing, as these types of financing tend to come from banks, who are not always willing partners in the energy efficiency retrofitting process. Frequently, banks have little or no incentive to steer their clients to other, more beneficial forms of financing that may conflict with their own financing products, particularly if the retrofitting is part of a larger renovation or building upgrade effort. Wit third-party financing that comes through building professionals, “pay-as-you-save” schemes and other forms of private financing may not always offer the best interest rates and payment terms, and may contain fees and charges that are not beneficial to the property owner and can skew the cost of project financing upwards.

Banks and financial institutions offer various types of financing products, which vary by country and by the specific lending policies and marketing practices. Some banks offer specific products for energy efficiency renovations or renewable energy installations. The specific financing products also vary by property owner segment.

3.2 Preferential Loans (Soft Loans)

Preferential Loans, also called soft loans, provided for building energy efficiency improvements offer better terms and/or reduced interest rates to property owners or long-term leaseholders than traditional bank loans and other forms of financing.

These types of loans can be used to finance a small part, most, or all of a retrofitting or renewable technology integration investment. These loan programmes usually specify what materials and installations are covered, such as new windows, heating controls, central heating installations, insulation, ventilation systems, renewable energy technologies, housing access and other energy efficiency or renewable technology features.

Examples of successful current preferential loan programs include:

- **Estonia: The Credit and Export Guarantee Fund (KredEx) (2001 – ongoing)**

KredEx is to facilitates the increase of competitive strength of Estonian companies by improving the availability of financing and managing credit risks, and the improvement of the housing conditions of Estonian inhabitants by expanding financing possibilities and offering financing solutions aimed at energy efficiency.

KredEx was founded in 2001 with the purpose to improve the financing possibilities that enable people to build or renovate a home and develop energy-efficient way of thinking. KredEx offers credit lines for the banks, credit insurance, renovation loans for apartment buildings, housing loan guarantees and loan guarantee for apartment buildings.

For apartment buildings, ordinary loans have too short repayment period and high interest. In connection with financial resources obtained from European Union structural funds and borrowing of additional loan from The Council of Europe Development Bank, Kredex enables banks to grant more favorable loans with longer repayment periods (up to 20 years) with the intended purpose to achieve energy sustainability using reconstruction works.

KredEx allows for the improvement of the availability of apartment building renovation loans, reconstruction of main constructions (bearing and peripheral structures) of apartment buildings built before the year 1993 as well as reconstruction work related to modification and replacement of heating and ventilation systems are supported, and owner associations are motivated to mount facilities for renewable energy.[8]

Sources: EuroAce, KredEx

- **France: A zero per cent eco-loan (Éco-Prêt a Taux Zero) (2009-2020)**

This scheme provides preferential loans to cover energy efficiency refurbishment projects. If 2 types of work are undertaken, a 0% loan of 20,000€ over 10 years is available. If 3 types of work are undertaken, this goes up to 30,000€ at 0% interest over 10 years.

Over 152 000 such preferential loans were granted at the end of 2010, with over 400,000 new loans expected to be allocated by 2013.[9]

- **Germany: KfW Programme Energy-Efficient Construction (2005 – ongoing)**

The German KfW Programme for Energy-Efficient Construction is designed to support investment in energy renovation of buildings and is one of the most

[8] http://www.kredex.ee/renovation-loan-for-apartment-buildings/

[9] World Green Building Council (2011) Existing Financial Structures in Europe that Support Energy Efficiency and/or RES Uptake into Buildings

successful examples of a public-private partnership. The programme offers a preferential loan for refurbishment measures aimed at reducing energy consumption with an additional repayment grant offered if the KfW Efficiency House standard is achieved. The budget was € 4bn (in total loans) from 2006-09 and € 2bn per annum in 2010-2011.

3.3 Subsidies

Subsidies (or subvention) money given by national or local governments (or other public bodies) to help support energy efficiency improvements or renewable energy integration in buildings, particularly in cases where the market mechanisms are not fully in place to support it.

Typically, subsidies for energy efficiency retrofitting are provided for insulation, lighting, energy efficient heating and cooling systems (and appliances), and combined heat and power (CHP).

Examples of successful current subsidies include:

- Poland: Infrastructure and Environmental Operation Programme (2007-2013)
- Slovenia: Financial stimulation for energy efficiency renovation and sustainable buildings of new buildings (2008-2016).
- UK: Carbon Emissions Reduction Target (2008-2012)

3.4 Grants

Grants are funds disbursed by a national or local government or department, corporation, foundation or trust, directly to a recipient project or projects, or to the property owner. Grants for energy efficiency retrofitting and renewable energy integration in buildings typically finance only a part of the retrofitting investment and require other sources of dedicated financing to be identified before the grant is awarded.

Grants have been awarded for renewable energy integration into buildings, insulation, weather proofing, heating systems (including biomass, heat pumps, thermal regulation, combined heat & power (CHP), solar installations, energy efficient appliances, energy efficient windows and doors, and district heating projects.

Examples of current successful grant programs include:

- Czech Republic: Green Investment Scheme (2009 – 2012)
- Hungary: Grants for Renovation & Prefabricated-Panel Residences (2001 - ongoing)
- Romania: Programs for the thermal rehabilitation of multi-level residential buildings (2002 – ongoing)

3.5 Tax Rebates

Tax rebates (or tax refunds) are reductions or credits on income taxes when the tax liability is lowered on the amount owed. Taxpayers can sometimes receive a tax refund on their income tax if the tax that they owe is less than the sum of the total amount of the withholding taxes and estimated taxes that they paid, plus the refundable tax credits that they claim. Various forms of personal tax reductions are offered to building owners that have made investments in energy efficiency renovations or in renewable energy technology integration into their buildings.

In Europe, tax credits have been offered for the replacement of old boilers, solar water heaters, roof installation, double glazing, central heating systems, energy audits, boiler maintenance, energy efficient appliances, insulation, weather proofing, passive houses and zero-carbon houses.

Current successful examples include a range of reductions or rebates from personal income taxes to reductions in building transfer taxes (stamp duty):

- Belgium: Tax Rebates for Home Improvements (2003 – ongoing)
- UK: Stamp Duty Relief for Zero Carbon Homes (2007 – 2012)

3.6 Tax Deductions

Tax deductions offer a reduction in the amount of income that is subject to tax for personal income or corporate taxes. This reduction is equal to some or all of the amount invested in energy efficiency retrofitting or renewable energy technology.

Tax deductions have been offered in some member states in Europe for insulation, weather proofing and combined heat and power (CHP). Eligible technologies and installations are frequently changed and updated with the tax code.

Some of the current examples of tax deductions include:

Netherlands: Energy Investment Allowance (2004 – ongoing)
UK: Landlords' Energy Saving Allowance (2004 – 2015)

3.7 VAT Reductions

Value Added Tax (VAT) Reductions for energy efficiency renovations and renewable energy installations, is used to provide a stimulus the building industry and to encourage retrofitting in general.

Lowered VAT rates have been applied, in most cases, to energy efficiency products and materials and renewable energy installations. Additionally, insulation, weather stripping, heating and hot water controls, solar panels, wind and water turbines, heat pumps, micro combined heat and power (CHP) projects, biomass and other transformation/restoration works.

Some of the current examples of VAT reductions include:

- Belgium: Reduced VAT on home refurbishment (2000 – ongoing)
- UK: Reduced Sales Tax for Energy Savings Materials (2000 – ongoing)

3.8 Trading (Energy Certificates)

Tradable Energy Certificates (often called White Certificates) are documents that certify the attainment of an energy consumption reduction. In most circumstances, these certificates are tradable and combined with an obligation to achieve a certain target of energy savings.

Under the energy certificate or white certificate system, producers, suppliers or distributors of electricity, gas and oil are required to undertake energy efficiency measures on behalf of the end consumer that are consistent with a pre-defined percentage of their annual energy usage. If the utilities or energy suppliers (and in some cases the end consumer) do not meet the mandated target for energy consumption, they are required to pay a penalty or pay back a larger percentage of the energy efficiency investments.

The energy certificates are given to the energy producers or consumers whenever an amount of energy is saved. The certificate holder can then use the certificate for their own target compliance or they can sell it to others who cannot meet their targets. This is similar to the concept of emissions trading, with the tradability guaranteeing, in theory, that the overall energy savings has been achieved at the lowest possible cost, while the certificates are supposed to guarantee that the overall energy saving target has been achieved.

Governments typically require these certificates for energy suppliers, for savings generated with end consumers. They are typically used to as financial instrument to fund insulation, heating, hot water production, lighting, ventilation and energy efficient appliances.

A recent example of a successful energy certificate scheme includes the French White Certificate Trading Scheme (2006 - 2009).

Training note: *Each of these financial instruments and relevant factors may or may not be of interest to specific segments of the target audience. Much of following information is organized to appeal to a general audience, other information is labelled specifically for key property owner segments. Based on the audience, you may want to adjust which factors may or may not be included.*

Examples of best practices and typically financed technologies have been provided by the 2010 EuroACE Report on Financial and Fiscal Instruments for Energy Efficiency in Buildings, which should be consulted for more detailed information on specific financing schemes. The report from the Joint Research Centre of the European Commission (2010) also contains detailed descriptions of specific public programs for which some property owners may be eligible.

The current economic and public policy situation in Europe is evolving rapidly. Many of the public financing instruments that are provided as examples may be discontinued, scaled down, or fundamentally altered. At the time that this toolkit was drafted six of the eighteen example schemes are likely to be discontinued within the next year.

4 Financing Risks for Property Owners

There are a number of risks that property owners and local authorities face during and after the energy efficiency retrofitting process. These include macro-level and individual-level risks.

4.1 Macro-Level Risks

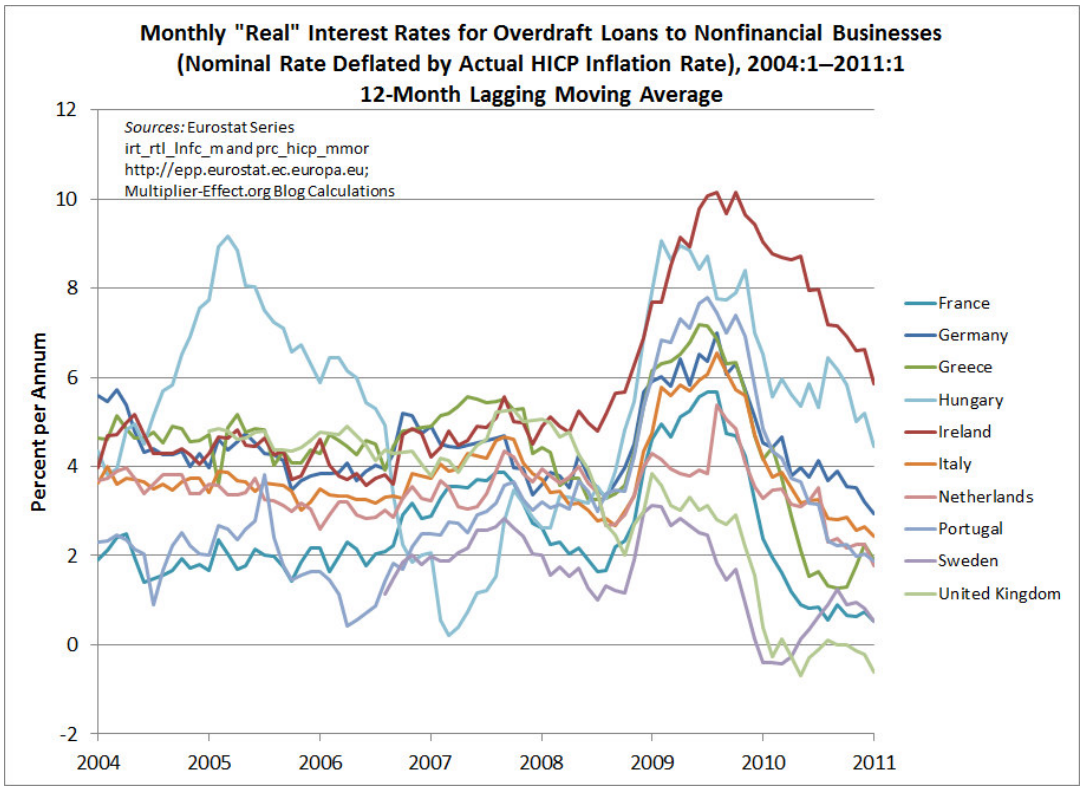
Macro-level risks include global, national and regional economic, social and political factors that may have a negative impact on the financial viability and long-term economic benefit of a retrofitting project. These risks may lead to undesirable economic and personal outcomes for property owners.

Many of these macro-level risks have been heavily impacted by the current global financial and the Euro currency crises, leading to tightening credit markets, volatile interest rates, weakening real estate markets and a turn to austerity in public policy.

4.1.1 Interest Rates

Interest rates have been fluctuating heavily since 2007, and have been particularly volatile since the financial crisis emerged in 2008. Will borrowing costs rise or fall? This will have a significant impact on the total project cost. Indeed, the costs of financing a retrofitting project will be higher than originally anticipated if the effective interest rate is higher.

Chart 4.1.1 - Key Interest Rates Averages Through 2011

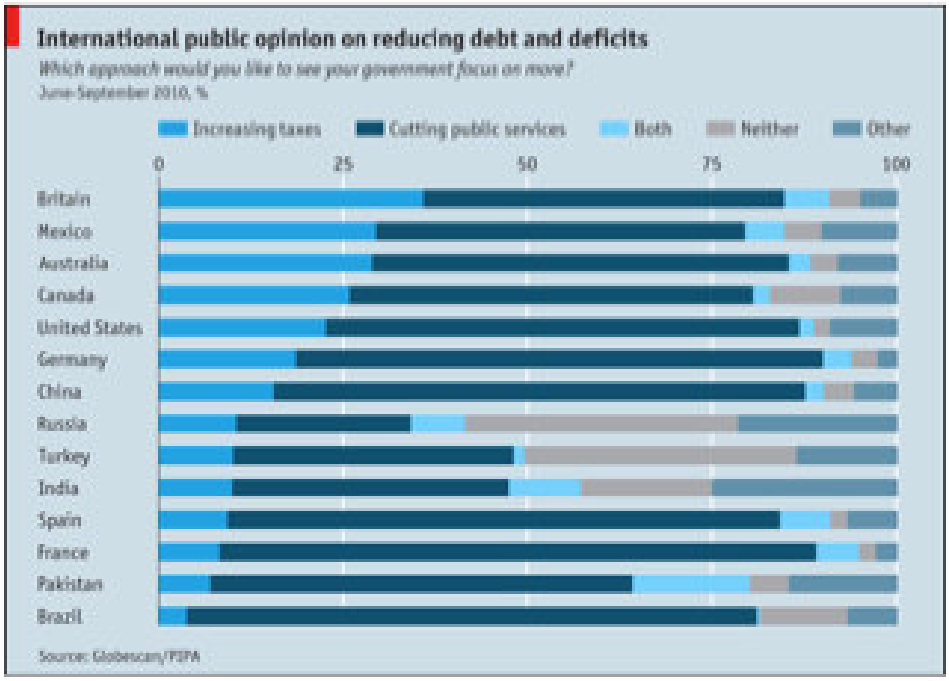


Source: European Economic Forecast

4.1.2 **Tax Policy Instability**

In the current economic climate, there is a move in public policy towards austerity. A large risk for property owners includes increases in government fees and charges as well as decreasing support for subsidies and incentives.

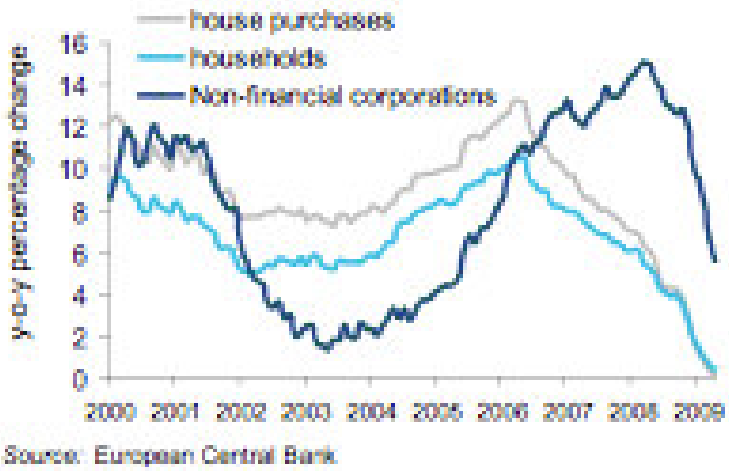
This trend is indicated in for several European countries in the following chart.



4.1.3 **Tightening Credit Markets**

Access to financing is getting more difficult. The trend is towards tighter credit markets, impacting property owners attempting to finance upgrades and rennovations.

Chart 4.1.3 - Bank lending to the private economy in the Euro area

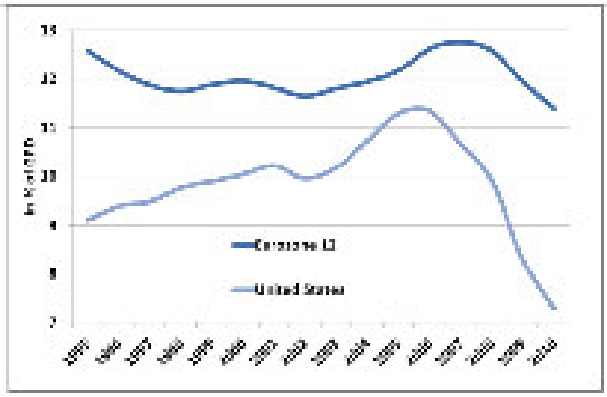


4.1.4 **Real Estate Markets**

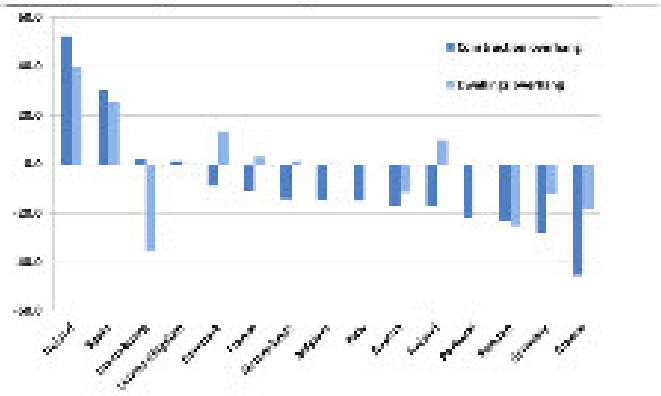
Property markets are becoming more volatile in many regions, and the exposure to a collapse of local real estate markets (United Kingdom, Ireland, Spain, and Denmark, in particular) continues to unspool in unpredictable ways.

There is a real possibility that, despite renovating for energy efficiency and renewable energy, the value of a property may continue to decline.[10]

US vs. eurozone construction boom/bust, 1995-2010



European construction and housing overbuilding 2001-09, percentage of long-term average 1970-2000



4.1.5 **Energy Costs**

European households face at least 20 years of electricity price rises. With extensive growth in more expensive renewable energy sources (especially in the number of wind farms) prices are expected to increase a higher rate.[11]

Figure 4.1.5: Household electricity and gas prices in 2007 — adjusted to purchasing power

[10] Sources: European Economic Forecast, New Mortgage Credit Regime for Europe

[11] Source: Energy & Environment Report 2008, EEA, FT

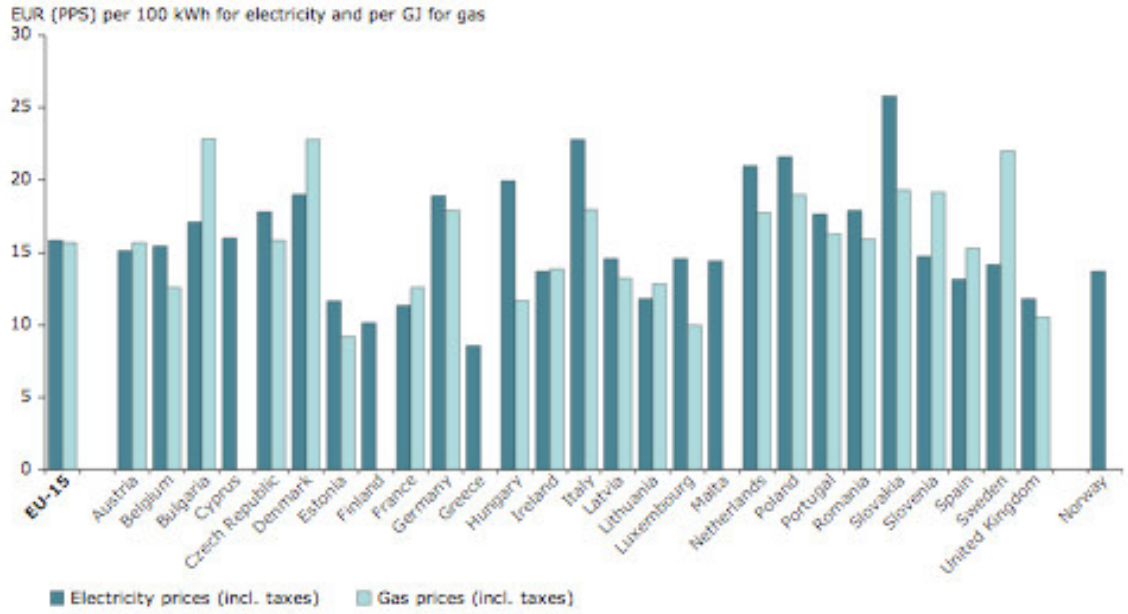


Figure 4.3: Trends in nominal end□user energy prices and disposable income, EU□15

With regards to energy prices, the savings are relative only to the future increases. In short, the higher the rise in energy prices in the future, the more the property owner saves and the shorter the payback period.

4.2 Individual-Level Risks

4.2.1 Property Value

Is there an investment risk to retrofitting for energy efficiency? Is the property owner counting on the renovation as an investment for a higher property value? After the renovations have occurred, how much higher will the value of the property be?

The current housing market price increases related to the cost of land and low energy consuming buildings standards as being between + 2 and 7% in 2011.[12] Without being able to predict the real financial impact, future sales of non refurbished existing property are likely to be more difficult and at a lower price compared to real estate that meets new standards for energy efficiency. This, however, is contingent on energy prices and the effects of energy efficiency regulations.

4.2.2 **Debt/Equity Ratios**

The debt/equit ratio is the measure of a property's (or property portfolio's) financial leverage calculated by dividing its total liabilities (debt) by the market value of the property. It indicates what proportion of equity and debt the property owner is using to finance its assets:

$$\frac{Total\ Debt\ of\ Propoerty\ Portfolio}{Market\ Value\ of\ Property\ Portfolio} = Debt\ Equity\ Ratio$$

A debt equity ratio of 1 (one) indicates that the property is fully leveraged. A ratio under 1.0 indicates that the property has net value greater than it's leverage, while a ratio over 1.0 indicates that the property is underwater. Generally, most financial institutions will not offer financing in cases where the debt/equity ratio is over .70 - .80, and many banks have significantly lowered the eligible ratios.[13] However, based on the financing assessment and document checklist in Annexes IV and V, the tolerable debt/equity ratio for bank financing may be higher or lower.

There is a significant risk associated with the variability of equity to the value of the building stock. The overall equity is the amount your property is worth above what is still owed on it. Is your property worth less or more than what you owe?

Generally, the higher the level of debt, the greater the probability that the debt going to be the deciding factor in your ability to attain external financing and overall viability of retrofitting.

4.2.3 **Technology Risk**

Will the chosen technologies for the renovation become out-dated, non-competitive, or unsustainable? Some key questions to consider are:

- Will the technology work as anticipated? If the savings provided by the technology do not cover the cost in a reasonable period of time, it may not be suitable for financing.
- Will other technologies be better? The threat of more effective or less costly technologies is an ever-present problem, especially since the available technologies change rapidly.
- How mature is the technology? Is the technology proven to be effective in your region?

[12] Source: Immobilier des Notaires
[13] Source:

- What is the cost/benefit of the technology?

4.2.4 **Opportunity Costs**

Could something of greater value be accomplished with your renovation funds? There are several indicators that a energy efficiency renovation may not be the best use of capital funds:

- Savings interest rates
- Equities
- Other investments?

In the past, it real estate investments were considered to be a safer bet in a bad economy. However, with property values being one of the drivers of the current economic situation for some countries and regions in Europe (Spain, Italy, Ireland, France) it may make more sense to invest elsewhere. Where the real estate markets have held their value, it may make more sense to invest in buildings.

4.2.5 **Building Professional / Contractor Risk**[14]

4.2.5.1 Contractor Skills

Contractor reliability correlates heavily with final outcomes. Costs and quality of the renovation can have a huge influence on the success or failure of the project. Property owners need to consider the skill level and service levels of the property owners.

4.2.5.2 Contract Terms

Another important factors to consider are the unanticipated catches with the renovation contract terms:

- Will you need a project manager? Project managers generally take a percentage of the total project costs and can insure that various risks and tasks are managed properly.
- Timeline: What if the project takes longer?
- Budget: Will it cost more than anticipated? What is acceptable in terms of cost increases? When will the property owner or project manager be informed of cost overruns?
- Collateral damages: Who is responsible for repairing damage that occurs carrying out the project?
- Clean Up: Who has the responsibility for finishing and clean up?
- Timeframe: How long will the project take? What will be the level of displacement?
- Insurance: Do the building professionals carry the propoer insurance should there be damage to your property or a neighbour's property? How well insured are they? What will the claims process be like?

[14] Sources: Jonathan Rose & Company, TRAINREBUILD Financial Laboratory

4.2.6 **Displacement**

Depending on the nature of the retrofitting, some projects allow property owners or renters to live in the premises while the work is being completed. Other projects create conditions that are uninhabitable (dust, construction material, unusable facilities, lack of heating or cooling) or may present physical dangers. There are several forms of displacement that may occur and these costs should be included in the project budget:

- Renters: In most cases, landlords are required to provide temporary accommodation to renters, as well as to cover the costs of moving personal effects should belongings need to be moved or removed. Some localities have strict laws regarding tenants rights in these situations.
- Owners: Much like renters, owners renovating their own property may need to relocate temporarily. In these cases, there are options of staying with family of friends, but there may still be costs associated with any form of temporary accommodations as well as the moving or removing personal belongings.
- Inconvenience: Obviously, the process of renovating creates a number of inconveniences, even if displacement is not involved. Will kitchen or sanitary facilities be unavailable? Not only is there the possibility that construction dust and debris create discomfort or will possessions be damaged?

4.2.7 **Property Damage**

The risk of damage to property is inherent in any renovation or retrofitting project. A quick assessment of these risks will ensure that hidden costs can be adequately prepared for and covered:

- Damage to Owned Property:
    - Any damage to your property that will require additional or unforeseen repairs?
    - Problems after project completed?
- Damage to Other Properties:
    - Do renovation activities damage neighbours property?
    - To what cost and inconvenience will these damages incur?
- Unforeseen Repairs:
    - Did you find additional problems that needed to be addressed during the project causing delays or additional costs?
    - Have you set aside a budget for contingencies or needed additions to the project scope of work?

5 Sources of Finance for Energy Efficiency Retrofitting

5.1 Sources of Public Financing

There are six major sources of public finance for energy efficiency retrofitting. It is important to be aware of these sources if it is the intention of a property owner to access public funds or participate in other financing programmes supported by public funds for their retrofitting project. Each of these sources have direct implications on the eligibility requirements, process, as well as the terms and conditions of financing.[15]

5.1.1 European Regional Development Fund (ERDF)

The European Regional Development Fund (ERDF) offers funding for energy efficiency related programmes across Europe. This €308bn fund offers financing for energy efficiency improvements and renewable energy integration into in existing housing. The fund bylaws have a provision that up to of 4% of the total ERDF allocation will be eligible for such projects. In the 2007-2013 period, ERDF is funding 4 national programmes, 2 multi-regional programmes, over 30 regional programmes, and 2 cross-border programmes. Examples of ERDF funded projects include:

- The JESSICA Holding Fund in Lithuania: In June 2009 a tripartite agreement between the Ministry of Finance of the Republic of Lithuania, the Ministry of Environment of the Republic of Lithuania and the EIB was signed, which established the JESSICA Holding Fund for the modernization of residential apartment houses. The EIB-managed JESSICA Holding Fund shall invest in energy efficiency projects for multi-apartment housing via the Lithuanian banking sector. Funds have been contributed from the ERDF alongside national match funding. Intermediary banks will act as energy-efficiency focused JESSICA Urban Development Funds (UDFs) in providing long term preferential loans with a fixed interest rate not exceeding 3%. The loans will be offered to home-owners in multi-apartment buildings with tenant associations acting as representatives and managing the process of implementation of chosen energy efficiency projects. The contribution invested in the Holding Fund is 227 million Euro, which consists of ERDF funds (127 million Euro) and national funding (100 million Euro). The expectations are that commercial banks step in with further 20-40 million Euro.

- Revolving fund for energy refurbishment in housing in Estonia: One leverage option for structural funds is to combine ERDF funding with loans from European banks like the CEB or the EIB. This system has been used in Estonia where a central revolving loan fund consisting of grant funds from the ERDF and loans from the CEB has been combined with funds from the Credit and Export Guarantee Fund KredEx (national guarantee fund) to provide long-term (up to 20 years) low-interest loans (currently 4.5% compared to 7%

[15] ibid.

minimum on the market) through local commercial banks to multiple-unit residential buildings built before 1993. A 15% contribution should be brought by the home owners. This lending scheme, which was set up by Credit and Export Guarantee Fund KredEx with the help of technical assistance provided by KfW Bankengruppe, targets energy efficiency investments that have been defined as priority measures in an energy audit. The objective is to reach minimum 20-30% savings in the building's energy consumption.

- Grants for energy efficiency in housing in France: Each French region will be permitted to use up to 4% of their Operational Programme funding for energy efficiency investments and greater use of renewable energy in existing housing. Operations must target a significant number of housing, most energy inefficient buildings or most effective energy-saving refurbishment actions. Two types of housing will be eligible: social housing and run-down co-ownership with social occupation, within the framework of an operation supported by ANAH (national housing agency). For the most recently constructed buildings, the eligible actions will be the ones that achieve a gain of at least 8kWh/m2 and reach an energy consumption of less than 150kWh/m2. The French government has chosen to use the ERDF in a grant scheme as an additional resource to reach its objectives of retrofitting 800,000 very energy inefficient dwellings. In many cases, like in the Nord-Pas de Calais region, the ERDF will serve to release the extra investment needed to improve the increase energy performance of buildings.[16]

5.1.2 **European Investment Bank (EIB)**

The EIB contributes towards the "integration, balanced development and economic and social cohesion of the EU" by lending to Member States. In 2008, the EIB signed energy loans totalling more than €8.6bn for projects within the European Union, around 700mn of which were focused on energy efficiency projects.

The primary and most successful example of EIB funded programmes include the EIB-KfW Carbon Programme. This is a programme for acquiring greenhouse gas emission certificates. Certificates within the meaning of this programme are Emission Reduction Units (ERUs) and Certified Emission Reductions (CERs) from projects approved in accordance with Article 12 of the Kyoto Protocol (Clean Development Mechanism/CDM), and in each case, must be applicable under the EU Linking Directive for use in Phase II of the EU ETS.

The aim of the Programme is twofold. First, by way of providing additional cashflow to projects the purchase of Certificates encourages the implementation of projects that contribute to reducing global greenhouse gas emissions. Secondly, the Programme provides Buyers, who have otherwise no access to CDM and JI projects, with cost-effective Certificates that can be used to fulfil their obligations under the EU ETS.

[16] Rezessy, S & Bertoldi, P. (2010) Financing Energy Efficiency: Forging the Link between Financing and Project Implementation, Report prepared by the Joint Research Centre of the European Commission, European Commission

Eligible Buyers are European corporate entities, and/or intermediaries representing corporate entities, who have compliance obligations under the ETS. The Programme is preferentially designed for the needs of those entities, who do not have the capacity to establish an in-house carbon trading activity. To meet the needs of buyers, there will be the option to receive a delivery guarantee at the point that they enter into the Purchase and Agency Agreement. Commitments by Buyers will usually be accepted with a minimum commitment level of 500,000 Euro for each individual buyer (smaller amounts may be accommodated through intermediaries participating in the programme) and a maximum commitment level of 10 million Euro (for an intermediary acting on behalf of individual companies, a maximum commitment level of 15 million Euro). The programme volume is 100 million Euro.

KfW will select the projects according to customary banking practice and to cost and risk criteria. Selected projects must be applicable under the Kyoto Protocol and under the EU Linking Directive for use in Phase II of the EU Emissions Trading Scheme and shall fall within one of the following sectors: Renewable Energy; Land fill gas; Coal mine methane, coal bed methane; Fuel Switch; Energy efficiency; Carbon sequestration; Carbon capture and storage (CCS);. Land use, land use change and forestry.[17]

5.1.3 **Cohesion funds**

Cohesion Funds aim to reduce economic and social disparities by financing up to 85% of eligible large-scale projects involving the environment and transport infrastructure. Eligible Member States must have a per capita GDP of less than 90% of the community average. Eligible environment projects must help to achieve the objectives of the European Commission treaty and align with the priorities conferred on Community Environmental policy by the relevant Environment and Sustainable Development action plans.

5.1.4 **Intelligent Energy Europe Programme (IEE)**

The Intelligent Energy Europe (IEE) programme aims to boost actions towards achieving EU energy targets, including fostering energy efficiency and the promotion of renewable energy. IEE Programmes consider Local Authorities to be the main target group. A budget is regularly earmarked for local authorities to develop sustainable energy policies at local level.

IEE funds three different types of activities: projects pioneering sustainable energy ideas in practice; products and services procured to meet the needs of the European Commission and/or the EACI; and the ELENA financing facility to mobilise funds for investments in sustainable energy at local level. Money is available through each of these different financing streams, although the majority of the budget is given over to funding projects. €730 million is available from 2007-2013.

[17] Rezessy, S & Bertoldi, P. (2010) Financing Energy Efficiency: Forging the Link between Financing and Project Implementation, Report prepared by the Joint Research Centre of the European Commission, European Commission

5.1.5 **EU Emissions Trading Scheme (EU ETS)**

Since 2005 the EU ETS scheme has been the largest multi-national greenhouse gas (GHG) emissions trading scheme in the world. The scheme requires large emitters of CO2 to trade credits to ensure that they pay extra for additional CO2 emitted over and above their allocated allowance, or they profit from reducing CO2 emissions. Some investments in energy efficiency and CO2 emission mitigation may qualify for credits.

In January 2008, the EC proposed a number of changes to the scheme, including centralised allocation of permits and extending the scheme to cover other GHGs. Changes are not expected to become effective until 2013. These changes may offer more opportunities for energy efficiency investments in energy efficiency retrofitting for buildings.

5.1.6 **European Local Energy Assistance Fund (ELENA)**

Available to Covenant of Mayors signatories, the ELENA fund aims to boost investment projects in the areas of energy efficiency; renewable energy sources and sustainable urban transport. The facility is funded from the IEE programme, and has an initial budget of €15 million for the first year of operation. Technical assistance, supported by the ELENA facility, can be provided either to a local or regional authority, or to another public body or their groupings within the countries participating in the IEE programme. Up to 90% of eligible costs can be covered by a community grant, following a selection and award procedure.

6 Financial Mechanism Scenarios (Strategic Management of Retrofitting)

Each of the following *financial mechanism scenarios* represent a strategic description of a *potential way* in which the financial management of retrofitting *could be* implemented and communicated to a particular audience. The *Laboratory for Financial Mechanisms* will continue to identify and refine these scenarios for their practical applicability. These mechanisms are not mutually exclusive; often more than one could be combined into a broader strategy. Not all of them will be applicable in every region or to every audience.

Trainers are encouraged to develop additional scenarios at the local level that could be used to communicate the project and offer additional opportunities to property owners and local authorities to advance the energy efficiency and renewable technology integration agenda.

Current financial mechanism scenarios fall into three categories: property owners; government and local authorities; and banks and financial professionals. These scenarios listed under each category may be cross-functional, meaning that they may apply to multiple audiences depending on the training objects and curriculum set by the trainers once they have identified the targeted segments and profiles that they have chosen as the primary focus.

6.1 Property Owners

6.1.1 Insurance Policy Against Higher Energy Prices

Energy prices are projected to continue rising in the future. Retrofitting can offer a way for property owners to insure that their energy expenses will be lower now and into the future:

- Between 2009 & 2010 , the EU average prices evolution for electricity was +2,5% and for gas -2% with great disparities. There is great pressure from energy producers to increase them, especially on imported fossil fuels.
- From 1997 to 2010, the prices in € increased by nearly 3 times for gas & oil.
- Anticipation scenarios on oil prices are few: SHELL's forecast shows an increase of 47% for the next 10 years.

Greater energy independence and less risk for property owners can be a powerful argument.

6.1.2 Value Protection

The real estate market is becoming increasingly depressed and thus potentially competitive as a buyer's market. One possible owner strategy is to up-grade properties so as to protect their value. Moreover, future regulations and building energy efficiency requirements may become increasingly strict in the future. Refitting could be offered to help meet this need.

- Vacancy of rented dwellings is limited if there is an effort to improve and care for them.
- The difference in rents between two tenants (what price they are willing to pay) depends on the work done.
- There is a necessity to meet the demand of the rental market.

Owners are not motivated to refurbish because it seems that neither the market real estate value will rise, nor will rent be reevalued proportionally.

However, some elements need to be taken into consideration when taking the decision to invest:

- Statistically tenants stay in private housings for an average of 4 years in the same dwelling.
- Even though the prospects for return on investment are not excellent, the execution of refurbishment works (not only energy efficiency refurbishments) allows landlords to meet the demand on quality requirements and helps reduce the risk of prolonged vacancy of property on an uncertain market. Old apartments put on the renting market without being refurbished often require a significant reduction of the rent (about 7%), too avoid risk of too long vacancy that would cause significant losses of rental income (on average around 3 months of rent). In a declining market (where offer is higher than demand), this vacancy can easily exceed 6 months and even up to 18 months.[18]

Vacant houses in France represent an estimated 7.1% of the building stock according to the INSEE[19] for whom a vacant unit is an unoccupied dwelling if it is:

- Offered for sale or rental;
- Already assigned to a buyer or tenant and is waiting for occupancy;
- Pending settlement of succession;
- Maintained by an employer for future use of its employees;
- Kept vacant and without specific assignment (e.g. a very decrepit property, under renovation, etc.)

6.1.3 **Renters**

Often renters have more financial interest in refitting than owners; as the savings in energy costs are often for the renters. Thus retrofit programmes involving the renters where the owners play a passive role may be a logical strategy. The financing instruments involved would need to offer a model of collective refitting serving the renters' needs.

[18] Clameur Bilan 2011 (Clameur is a French observatory of rental market in France resulting from a partnership of all the main real estate professionals, www.clameur.fr) and Union Nationale de la Propriété Immobilière – UNPI 2011 vacancy survey.

[19] French Institut National de la Statistique et des Etudes Economique

Generally, property owners do not like to give up control of their buildings to renters, and renters may be incentivised to move to a cheaper location if the rents are increased to offset the cost of retrofitting in the light of energy savings. Other evidence, based on studies completed in the United States, indicate that renters, while not being willing to pay more, tend to stay longer in rental units that are energy efficient and more environmentally and community-oriented.[20]

6.2 Government & Local Authorities

6.2.1 Economic Stimulus

The economic downturn seems here to stay. A sector that will be hit quickly and severely by recession is construction. A possible alternative to unproductive unemployment payments is refitting as economic crisis measure. Since refitting works as an investment (less energy costs earn back the investment in the long run) this is a recession measure that does not produce national debt, and thus is attractive.

In the United States, economic stimulus funds were attached to energy efficiency retrofitting. In 2009, The Department of Energy released an $8 billion package for home improvements throughout the U.S. Participating homes, which will receive as much as $6,500 worth of improvements. Similar measures are being considered in the Netherlands and United Kindom.[21]

6.2.2 Material Manufacturers and Retailers

Manufacturers and retailers of double glass, isolation material and heat pumps need to market their wares effectively. One-stop-shopping wherein one purchases these refitting products, plus installation, plus financing is a potential point of competitive advantage.

6.2.3 Member State Subsidies

National governments, for instance in the name of environmental responsibility, can choose for subsidies (or offer support in the form of tax breaks) to help finance retrofitting.

Take note that the present economic climate makes national subsidies less and less likely in the future and that property owners should take advantage of these programs now. Recent public policy trends indicate that subsidies, feed-in tariffs and tax deductions and credits are under threat in many member states due to the introduction of austerity measures and balanced budget initiatives. In particular, UK, Germany, Spain and Denmark have all either cut back or eliminated their subsidies and feed-in tariff programs in the past year.

[20] Source: US Dept. of Energy, EnergyStar Program
[21] Source: The Daily Green 2009

With regards to income tax subsidies, loan guarantees, and direct subsidies, a number of factors at the national, regional, or local levels come into play:

1. Overhead costs must be kept to an exact minimum in order to preserve the value of energy savings for property owners.
2. The best examples of financial instruments are when governments assume a portion of the risk (i.e. influencing the interest rates and the price of loans).
3. Generally these programs do not help banks (as it lowers their profit and competes with their traditional line of second mortgage and home renovation products.)
4. Some political groups will object to these programs because of the current distrust of subsidies in light of austerity measures.
5. Income tax deductions to the owners when combined with rent controls when these initiatives are put into place may prevent some of the effects that polarize renters and owners.

6.2.4 **Education and Training to SMEs**

Small companies are going to feel the economic squeeze powerfully. Relatively few builders are capable of performing retrofitting. Knowledge, training and internships could be made available to support quality retrofitting, linked to quality control measures and certification.

6.2.5 **Slums**

Europe has a ‘slum’ problem in particular regions, and most of this is construction from the 1950’s to 1980’s. The value of many buildings in communities that are perceived a ‘blighted’ or in decline is rapidly falling. Refitting is a potential value retention strategy and community redevelopment strategy.

6.2.6 **Education**

Very few builders can accomplish energy efficiency retrofitting competently. Expertise for retrofitting could be better integrated into building trades education by offering subsidized internships and apprenticeships. (Labour for certain projects can be provided at greatly reduced costs for approved projects that offer training opportunities for internships and apprenticeships.

6.2.7 **Energy Companies**

In Europe there is increased competition between energy companies. They need strategies to build stable customer relationships through long-term commitments from financing and service contracts. Refitting linked to energy company loans would lock clients into a provider.

6.3 Banks & Financial Professionals

6.3.1 **Green Banking**

Non-economic political motives can lead to bottom-up (local initiative) motivation for the funding of refits. ‘Green financing’ may want to meet this demand.

Green and/or local banks looking for a marketing tool could be encouraged to actively enter the retrofitting market as point of creating a favourable identity. This form of positioning may also work for the selling of (second) mortgages and other financial products in support of retrofitting.

6.3.2 **Foreclosure / Repossession**

The possibility that properties are repossessed is increasingly real. Repossessed properties often have not had adequate up-keep. Banks or other lenders are faced with major write offs or they need to act to preserve the value of their loans. Retrofitting fitting could become an element in this market.

6.3.3 **Insurance Companies**

Insurers looking for competitive advantage could link house or building insurance to improved up-keep and retrofitting.

7 Additional Findings Relevant to Training Curriculum Development

The Laboratory on Financial Mechanisms, through meetings, conversations and engagement, has a number of findings from the research and engagement process that may be relevant for further curriculum and training development.

Each of these findings has influenced the development of the current toolkit or has potential to influence the training process development moving forward. Trainers can help refine the curriculum by responding to or working through some of these additional findings.

7.1 No Single Solution

There is no possible single solution model for Europe for financing mechanisms and for training property owners on financial instruments and mechanisms. There is a complicated field of players at the EU, national, regional and local levels. In order to effectively train property owners and local authorities under these conditions, trainers should consider undertaking the following actions:

1. Map out the factors in play in your local area. Try to identify the key players in terms of public policy, financing, and building professionals and installers, as well as the decision processes that property owners are likely to encounter.
2. What needs to happen in training situations is to go through the factors in play to arrive at a solution that is applicable for the particular target group in question.
3. Much of the information to be communicated in financial training is not about financial literacy for property owners, rather, the main argument is that this is an insurance policy when energy costs go up and that retrofitting helps to protect overall value.

7.2 Strongest Argument in Favour of Retrofitting

In general, protecting the value of one's property is the strongest argument in favour of retrofitting for most property owners, based on the current property owner profiles under consideration.

7.3 Bank Strategies

Bank strategies to increase retrofitting are not supportable by the evidence collected by the Financing Laboratory and we have not been able to find any large-scale examples of banks taking the lead on retrofitting. There is a small subset of specialist banks and groups that are ideological, as part of the green movement, that will further retrofitting as a part of their ideological conviction. The chance they will become more than 1-2% of the market is highly remote. In general, mainstream banks have no interest in the retrofitting agenda at this time.

In general, Laboratory research has shown that banks do not want to get involved in green politics. More likely, it is in the bank's interest to frustrate policy as far as government is involved to minimize the take-up.

It is possible that in the short to medium term (next five years) that the political pressure could grow so that banks may be required to do more socially responsible activities. This scenario is more likely if the banks fail again, then perhaps they would be willing to do something more politically palatable. However, in general, there is no desire for the financial sector to engage in this issues, expect in some documented cases where a form of 'greenwash' has been at play.

7.4 Renters

Renters, when they have a choice, will choose against retrofitting. In many cases, they will move out if their rent goes up, even if their energy costs go down.

7.5 Value Chain

There is no compelling 'value chain' argument that will convince private property owners to undertake retrofitting. Generally, the inevitability of large scale retrofitting caused by increased energy costs (i.e. depletion of fossil fuels/climate change) is more convincing.

7.6 Pilot Programs

Pilot programs of retrofitting, to develop the necessary environmental and social technologies, are needed in order to be ready for large-scale deployment. Trainers may want to consider how their networks may be able to form a larger pilot program for their regions and localities.

There are several reasons why a pilot project approach may be an appropriate form to move forward. Firstly, retrofitting is, in terms of human capital, very demanding. It is very labour intensive and it cannot be implemented quickly on a large scale without a number of other factors already in place. A wise governmental policy would be necessary to build up the necessary human base with training and education for building professionals and develop coherent regulatory frameworks.

If Europe does not have these technologies in place and nations, regions and local communities do not have the knowledge to properly implement a retrofitting agenda, then property owners stand to see their property and communities lose value. To avoid these gaps, cooperation among key stakeholders and the implementations need to be figured out.

7.7 Certified Energy Advisors

Trust has been identified as a huge issue in advancing the retrofitting agenda. Building owners often do not have the knowledge necessary to make effective decisions about retrofitting and building suppliers and banks have their own economic interest. In short, nobody is currently considered fully trustworthy to assess the technologies, financing and regulations: not builders, banks, or local authorities.

In this case, neutral advisors with no economic interest would make the most sense, with some sort of 'Certified Energy Advisors' program set up in the targeted countries. Given that ownership models are different in the various target countries, even among the various regions within the target countries, who owns rental property and what is the condition of that property can be extremely heterogeneous. Who owns, what, they own and what their problems are not homogenous.

This also brings up the issue of training and certification of advisors across the EU. The feasibility of creating an EU-wide training and accreditation programme for EU energy advisors has come up in a number of Laboratory engagements. There is room for the EU to intervene much more strongly in terms of basic building and architecture courses, as there is a lack of building trades expertise at the vocational level. Such a programme and its related curriculum needs to be addressed on the trades and vocational level to be fully effective.

7.8 Opportunistic Retrofitting

Energy efficiency retrofitting is much more likely to happen if you a property owner is already planning on completing a renovation anyway. There is minimal disruption in addition to the renovation already taking place.

7.9 Financial Stimulus

With a robust financial stimulus, such as subsidies, grants, rebates, and tax incentives, property owner willingness to retrofit increases dramatically if they can see short to medium-term financial benefit in doing so.

7.10 Macro-economic Considerations

Compulsory retrofitting is perceived as being severely destructive of financial and social capital for owners. It is not politically realizable and ethically justifiable in most cases. In general, property owners do not want to do something that they have no control over.

7.11 Unemployment

Unemployment issues as they relate to a retrofitting program solution are extremely interesting for local authorities, but not part of the world view of the property owners.

8 Annex I: Market Segmentation of Property Owners

A full segmentation of the target audience was completed with the co-operation of project partners and laboratory participants. Currently the segmentation variables identified include the following nine segments, with some containing up to 4 sub-segments. These segments are:

1. Type of Dwelling

    1.1. Single Owner Houses (Focus on Younger Demographics)
    1.2. Apartment Building - Single Owner, Multiple Dwellings
    1.3. Apartment Building - Multiple Owners

2. Target Country (with local consortium partner)

    2.1. Countries: Targeted by Property Owner Associations
        2.1.1. Belgium-BE (ABSA)
        2.1.2. France-FR (ARENE)
        2.1.3. Germany-DE (UIPI)
        2.1.4. Greece-GR (UIPI)
        2.1.5. Italy-IT (BIELLA),
        2.1.6. Spain-ES (UIPI)
        2.1.7. United Kingdom-UK (RICS)

    2.2. Public authorities in Covenant of Mayors (CoM) cities :
        2.2.1. France-FR (ARENE)
        2.2.2. Bulgaria-BG (REC)
        2.2.3. Hungary-HU (REC)
        2.2.4. Poland-PT (REC)
        2.2.5. Romania-RO (REC)

3. Locality - Specificity of the Housing Market

    3.1. Germany

        3.1.1. Owners (East)
        3.1.2. Renters (West)

    3.2. France

        3.2.1. Cities (tax incentives for buildings - in some cases there is more housing stock than renters to fill them)
        3.2.2. Supply and Demand of the Market

4. Age / Demographics

    4.1. Under 50
    4.2. Over 50

5. Number of Properties Owned

    5.1. Single
    5.2. Small (less than 5 buildings or 25 rental units)

5.3. Med (less than 20 buildings or 100 rental units)
5.4. In the single to medium category contingent on local composition of property owner associations.

5.4.1. UK - Landlords
5.4.2. FR / BE - Landlords, Owner/Occupiers, Condos
5.4.3. DE, ES, GR - Landlords (Some owner occupiers)

6. Level of Professionalization

6.1. High: Landlords or property owners with professional building management expertise and a strong organizational environment (Mostly SME)
6.2. Low: Individual owner-occupiers or property owners/landlord with little or no professional building management expertise and little or no organizational support. (Individuals and SMEs)

7. Associations - and their makeup

7.1. Bottom-Up Associations: DE, ES
7.2. Hybrid (Between decentralized and Centralized): IT, UK, FR
7.3. Centralized: GR, BE (BE is organized around language groups)

8. Age of Building Stock <*Under Review*>

8.1. Original construction before 1900
8.2. Original construction 1900-1946
8.3. Original construction 1946-1990

9. Level of Upkeep

9.1. Old buildings well maintained
9.2. Old buildings poorly maintained
9.3. Newer buildings well maintained
9.4. Newer buildings poorly maintained

10. Income & Social Status of owners

10.1. High relative to local economic expectations
10.2. High relative to European Union averages
10.3. Lower relative to local economic expectations
10.4. Lower relative to European Union averages

9 Annex II: Recommendations and Proposed Actions

Selected Excerpts from the Recommendations and Proposed Actions for Local Authorities and National Associations of Property Owners

Communicating the Retrofit Value to Property Owners and Creating a Scale Effect
Crisis in trust for technologies, finance, policies and professionals are widespread among property owners. Retrofitting should be presented as part of an enhanced value proposition and the message should be clear, simple, targeted and relevant (not overloaded with technical information). The focus of a successful communication campaign to property owners should not only be on energy saving but also on improved comfort, indoors quality and well-being. It is recommended to set up communities of property owners sharing experiences, grouped online and/or through face to face dialogue (multiple approaches needed). The community creates the bonding platform for knowledge transfer and can trigger the scale effect needed to create a critical mass behind the renovation process. The communities will feature the participation of different types of property owners based on the building type and individual mindset characteristics along the following lines:

- **PROFILE ONE**: Property owners' champions of retrofit, having already retrofitted and providing a model for other property owners to follow. Partners active in the target countries will identify the champions to share their experience
- **PROFILE TWO**: Excellent looking for retrofit and fairly easy to reach a green light decision on retrofitting
- **PROFILE THREE**: Excellent looking for retrofit, but not easy to reach the green light decision on retrofitting
- **PROFILE FOUR**: Dubious looking for retrofitting and not easy to reach the green light decision on retrofitting

Case studies should be collected to illustrate and learn from successful renovation experiences on the ground. Successful communications activities may include "Open Homes" weekends, interactive websites and Low Carbon Homes shows touring local venues. Property owners should be offered a simple package of measures referring to the retrofit process from which they can pick what is most suitable to them. A low level of renovation (low hanging fruit) is what needs to be aimed at first, scaling up progressively and incrementally to higher levels.

PROPOSED ACTION: Following the example of ENERGISPRONG program in the Netherlands, local authorities and property owners associations should set up online communities of property owners to share experiences and stimulate mutual learning. Networks of local parliamentarians and other high visibility individuals could also be established to support the initiatives.

Breaking the Financing Dilemma
Only the establishment of a large-scale pan European retrofit program is the most effective route to convince banks to devolve appropriate financing. Reaching a critical mass among property owners is key. Banks are still the major providers of finance for retrofit and alternative financing is still depending on banks. Cost optimal renovation is a decisive factor that can convince property owners. The choice to retrofit should make financial sense taking into consideration return of investment, interest rate, banks fees, payoff period, etc. Banks will not develop new instruments unless property owners will retrofit widely; a stable regulatory framework is in place and red tape is curtailed in the member States.

Stakeholders should seek to influence more participation of banks in support to training programs, encourage more financial institutions to serve as intermediaries for public funded projects and to leverage greater private financing for public programs. EU expenditure for the renovation of the building stock (i.e. by Structural and Regional Development Funds) should introduce the minimum requirement for implementing measures at cost-optimal levels and provide support (through guarantee schemes in partnership with private banks) to those member States which are not using enough EU funding for buildings retrofit. More projects should also be supported by the EU institutions on vocation education and training (VET) directed to property owners associations.

PROPOSED ACTION: The establishment of a EU Renovation Fund (possibly via the European Investment Bank and designed for different building types) should be considered as it could complement national financing schemes and share risks, offering more financial flexibility and additional confidence to the private investors.

10 Annex III: Profiles and Segments

TRAINREBUILD COMMUNICATION OUTREACH				
VARIABLE	**DESCRIPTION**	**MAIN SEGMENT**	**SUBSEGMENT**	**GEOGRAPHIC**
Profile One CHAMPION	Property owners' champions of retrofit, having already retrofitted and providing a model for other property owners to follow	Type of Dwelling	Single Owner Houses	
			Apartment Building - Multiple Owners	
			Apartment Building - Single Owner	
		Target Country	Targeted by Property Owner Associations	BE
				FR
				DE
				GR
				ES
				IT
				UK
Profile Two EASY GREEN LIGHT	Excellent looking for retrofit and fairly easy to reach a green light decision on retrofitting		Targetted by Local Authorities	HU
				RO
				BG
				PT
				FR
		Age / Demographic	Under 50	
			Over 50	
		Number of Property Owned	Single	
			Small (less than 5)	
			Large	
			Med (less than 20)	
Profile Three QUESTION MARKS	Excellent looking for retrofit, but not easy to reach the green light decision on retrofitting	Professionalisation Level	High	Mostly SMEs
			Low	Individuals
		Associations and their Makeup	Bottom Up	ES
				DE
			Hybrid	IT
				UK
				FR
			Centralised	GR
				BE
Profile Four NO GO's	Dubious looking for retrofitting and not easy to reach the green light decision on retrofitting	Age of the Building Stock	construction before 1900	
			construction 1900-1946	
			construction 1946-1990	
		Level of Upkeep	Old buildings well maintained	
			Old buildings poorly maintained	
			Newer buildings well maintained	
			Newer buildings poorly maintained	
		Income & Social Status of Owner	High relative to local economic expectations	
			High relative to European Union averages	
			Lower relative to local economic expectations	
			Lower relative to European Union averages	

11 Annex IV: Financing Check List for Property Owners

Frame by the viable segments…

1. Retrofit means a property owner who owns their building(s), rents to others and where the retrofitting is to be professionally carried out.
2. Renters as DIY
3. Owners as a DIY: Need massive skills program

Deep retrofit as a go it alone project is frankly silly - deep reconstruction is a complete renovation process.

Different knowledge situation, different implementation scenario.

Financial Self-Assessment

How much can you afford to invest?

- Income from Labour
  - Employment
  - Pension
  - Self-Employment/Freelance

- Income from Assets
  - Rents
  - Investment Income
  - Pension
  - Other

- Assets
  - Property
  - Equity
  - Savings

- Debts/Liabilities
- Current Assessed Property Value
- Anticipated Property Value Gain
- Anticipated Energy Savings

Project Risk Assessment (1 Low Risk Level - 5 High Risk Level)

- Satisfaction Factor
  - Enjoyment
  - Pride
  - Satisfaction
- Real Estate Market and Property Values
  - Dropping Market - no positive value
  - Counting on the Investment?
  - After the renovations have occurred, how much higher will be the value of your property?

- Interest Rates
  - Will borrowing costs rise?
  - Will overall costs be higher than anticipated?
- Tax and Subsidy Policies
  - Incentives
    - Reduced tax credit, deduction or VAT reduction
  - Tax Levels
    - Property Taxes Rise based on increased value
  - Government Fees & Charges
    - Higher filing fees than anticipated
  - Public Policy
    - Austerity
- Debt/Equity Ratio
  - Variability of Equity Value of Building Stock: is your house worth less?
  - Level of Debt: Is your debt going to be a larger factor.
- Technology Risk
  - Outdated, Non-competitive, Unsustainable?
    - Will it work as anticipated?
    - Will other technologies be better?
    - How mature is the technology?
    - Cost / Benefit
- Opportunity Costs
  - Could something of greater value be accomplished with the funds?
  - Savings interest rates, equities, other investments - in a bad economy, it may make more sense to invest in buildings.
- Building Professional / Contractor Risk
  - Contractor Reliability: Skill level leads to satisfaction or disatisfaction
  - Contract Terms: Unanticipated Catches
  - Project Manager:
  - Timeframe: Is it going to run long? If so, what are the other opportunity and displacement costs that may come into play?
  - Insurance: is the contractor insured, and how easy will it be able to claim off of that insurance.
  - Budget: Will it cost more than expected?
- Displacement Costs
  - Renters
  - Owners
  - Temporary Displacement
  - Permanent Displacement
  - Inconvenience
- Unforeseen Building Costs
  - Damage to Owned Property: Any damage to your property that will require additional or unforeseen repairs? Problems after project completed. (Technology risk)
  - Damage to Other Properties: Do renovation activities damage neighbours property? To what cost and inconvenience?
  - Unforeseen Repairs: Did you find additional problems that needed to be addressed during the project causing delays or additional costs?
- Revenue from Rents
  - Will rental income be disrupted during the process?

- Will renters vacate during the project?
- Will renters be willing to pay additional rent to cover the costs of the project (almost never).
- How important is the revenue from your property?

Project Assessment

- How many units (single family) are going to be rennovated?
  - 4 or less
  - 5 - 10
  - 10 - 20
  - More than 20

- Renovations to be Completed (Deliverable 4.1)
- Expected Costs of EE Measures
- Additional Labor / Installation Costs
- What type of financial instruments are avialble for your project?

Project Financial Position

$$\frac{Project\ Cost\ Assessment}{Financial\ Self\ Asessment} \times Risk\ Asessment \times \frac{Debt}{Equity} Ratio$$

Rental Property vs. Owner Occupied Propery/Renters

- DIY vs. Professional Installations
- Scale of the projects?

12 Annex V: Financing Document Preparation

This is a list of the documents that are most often required during the application process for financing (public or private) home retrofitting. Each financing scheme will require different documentation, which is usually listed with the application materials. Before beginning the process, it helps to ensure that you have the documents or will have access to them during the financing process.

- Proof of identity: birth certificate, passport, marriage certificate and divorce certificate if applicable
- 3 months salary slips, tax returns, pension statement, or proof of any other income
- If you are self-employed or a director of your own company - at least 2 years trading accounts and tax returns
- Banks statements (3 months) showing receipt of income and payment of loans.
- Statement proving your fund for the deposit to your mortgage
- Statements (1-2 months) relating to existing mortgage(s), loans and credit cards and maintenance agreement if applicable
- If you own your property, you will be required to show the title or proof of ownership. If you live in rented accommodation you will be required to show your rental or lease agreement
- (For uncollateralized financing) A complete statement of assets
- Professional estimates or invoices from tradesmen registered in your country (usually with a copy of their insurance certificate and/or proof of their professional trade certification).
- For a financing scheme that involves re-financing or equity release - the title deed or loan deed with the complete repayment table.
- A professional valuation of the property
- Proof of mortgage, liability, or life insurance greater than or equal to the amount of requested financing

For tax credits and deductions, the documentation that may be required includes:

- Material and labor invoices (these may need to be certified by a government official in some areas)
- Revised energy certificate or energy audit statement
- Inspection certificates