

Guideline

on Social Housing Energy Retrofitting Financing Schemes in EU New Member States



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**Innovative Financing of Social Housing Refurbishment
in Enlarged Europe**

www.join-inofin.eu

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1 Introduction

1.1 The InoFin project

InoFin is a project supported by the Intelligent Energy Europe programme aimed to design and implement tailored financing schemes for energy retrofitting of the social housing stock with emphasis on New Member States.

The project has explored what are the best approaches to set-up of financing schemes, including mixing financing sources such as grants, commercial and soft loans, third party financing, revolving funds, structural fund means and public participation models. The key focus of the studies has been on Latvia, Poland, Germany (Brandenburg region), Czech Republic, Slovakia and Bulgaria and has also drawn on experience from EU-15, mainly Germany, the Netherlands and Denmark.

The present Guideline presents some main findings of the InoFin project with a view to inspiring stakeholders to take initiatives for improving the conditions for undertaking investments in the social housing sector, thereby achieving both social and energy benefits.

1.2 To whom is the Guideline relevant

This guideline is dedicated for stakeholders involved in the process of implementing energy refurbishment projects in the social housing sector in EU New Member States.

It addresses decision makers at national, regional and local level as well as market actors that can contribute to launch and develop tailored financing schemes within the social housing sector in relation to prevailing barriers. This includes housing owners, tenants, financing institutions, construction companies, planners, service companies etc.

1.3 The starting point

Reviews within the InoFin project indicate that old EU Member States like Denmark, Germany and the Netherlands have a relatively large and well-defined social housing sector. Although not always defined by law (e.g. Netherlands), it is relatively easy to divide the social housing sector from the owner occupied sector. In all three countries, housing cooperatives are the main (in the Netherlands the only) owner of social housing. In the new EU Member States dealt with within the InoFin project (Czech Republic, Slovakia, Poland, Latvia and Bulgaria) however, a specific social housing sector cannot be easily defined. This is due to the rapidly changing ownership structure during the economic transition in the nineties.

Due to these different kinds of ownership structures, the target group for social housing refurbishment cannot be easily defined. Rental dwellings, and especially those occupied by weak social groups, form a very limited share of the housing stock and one cannot say that only this selected category encompasses the social housing stock. Generally, the prefabricated housing blocks in the new Member States (built after WW II) are those that are in the largest need of refurbishment.

Because of these different kinds of ownership structures it was necessary to create a broader definition of social housing within the InoFin project. Social housing has therefore been defined as *“accommodation for lower income groups including recently privatised housing stock as well as accommodation for vulnerable social groups”*. This definition covers the broad sector of housing that can be specified as “social” in all the countries participating in InoFin.

1.3.1 Energy performance

Countries like Denmark, Germany and the Netherlands have significantly reduced the energy performance of new buildings during the second part of the twentieth century. The energy performance of the dwellings in the new Member States lags behind and the energy consumption is in most cases at least twice as high. Especially the housing blocks build between 1960 and 1990 have very high-energy intensities meaning that the quality of these dwellings, at least from an energy efficiency viewpoint, is very low. Due to rapidly increasing energy costs during the last decade, combined with the poor energy performance of the existing building stock, energy costs of households have increased leading to unbearable energy costs among parts of the population. Energy costs as percentage of the household budget in the new Member States are significantly higher than in the old Member States and vary between 10-16%.

1.3.2 The housing regulatory framework

In Denmark, Germany and the Netherlands a separate social housing sector is covered in the regulatory framework. All three countries have introduced acts and decrees regulating the rent of social dwellings and have also rental subsidies in place for low-income groups.

The situation in the five new Member States is less organised, partly due to dramatically changing ownership structures after the economic transition. A regulatory framework for (social) housing has been developed in recent years in many new Member States. Examples are rental laws declaring the relationship between tenants and owners and maximum rent increases for special housing. The problem is that in many cases, housing and rental laws are still outdated leading to problems like:

- Insufficient rental income in rental dwellings for regular maintenance, because allowed rent increases in (part) of rental housing remains strictly regulated.
- Insufficient decision-making procedures in flats occupied by homeowners as there is usually the condition that 75% or even 100% of homeowners should agree on any planned refurbishment.

1.3.3 Housing ownership structures

In Denmark, Germany and the Netherlands, housing cooperatives and municipalities own the complete social housing stock. In the Netherlands, housing cooperatives are practically the only owners, in Denmark and Germany, both municipalities and housing cooperatives own social housing.

The housing ownership structure in the new Member States is heavily influenced by the housing stock privatisation in the nineties. Municipalities became the owners of the formal state owned housing stock in the early nineties and as they did often not have the capacity or the financial means to take care of this building stock, the major share of this building stock has been privatised. This means that they have been sold to the occupants at relatively attractive prices.

The fact that the greater part of the housing stock in multifamily dwellings is in private hands creates an additional barrier when planning any housing refurbishment. Plans for refurbishment have to be agreed by a large majority of the owners and often require an organised approach. In countries where homeowner associations have been formed, decision-making procedures are often easier, but not every association can act as a legal entity representing the owners in e.g. applying for a loan.

1.3.4 Barriers and drivers to housing refurbishment

Major barriers to accelerated housing refurbishments are generally related to financing, ownership structures and awareness:

- Lack of suitable financial mechanisms - Given the enormous amount of houses that need to be refurbished, the available public financial sources and programmes are limited.
- Conditions for access to capital (e.g. mortgages) remain relatively restricted and a large part of the population does not qualify for loans. Furthermore, an important psychological barrier is that people are not yet used to take loans.
- Transfer of ownership and resulting problems with decision-making about refurbishment - The privatisation of the housing stock in the new Member States leads to complex decision making processes among the new homeowners.
- Lack of awareness among residents towards new energy efficient technologies and the experience with starting a refurbishment project. This remains a serious barrier as little to no information is available from independent agencies.

The main drivers for housing refurbishment are related to:

- Rapidly increasing prices of the main energy carriers making housing refurbishment projects more economically feasible.
- The aging and deteriorating housing stock increases the need for refurbishment. Extending the lifetime of the existing housing stock

represents a far cheaper option than demolishing this old building stock and building new houses.

- Housing refurbishment and increasing the energy performance will make the housing stock more attractive; possibility to increase rent of rental housing and increase of real estate value of owner-occupied dwellings.

2 Checklist Refurbishing Social Housing

This guidebook functions as a reference document for stakeholders involved in refurbishment of social housing. This chapter contains a general checklist that discusses the major topics to be addressed for a systematic improvement of social housing.

The checklist contains 10 basic steps and is useful for three different target groups:

- National authorities
- Local authorities
- Building owners

Obviously the activities of these groups to stimulate refurbishment differ. Therefore the checklist distinguishes three levels of activities. Steps 1 and 2 are useful for national authorities, 3 and 4 for local authorities and step 5 to 10 for building owners. Nevertheless, every actor should be aware of the actions and responsibilities of other organisations. That's why it's recommended to get notice of all the steps discussed in here.

The checklist gives a broad overview and redirects to chapters in the guidebook for more specific information.

2.1 Steps to be made at a national level

Step 1. Identify (inter)national goals on energy efficiency in social housing

European Policy

To improve social housing on a national scale, it's necessary to be aware of the general context. Improvement of social housing should contribute to national and international targets concerning energy saving and social development.

The European Commission has set different targets for energy efficiency in houses. Most of these are formulated in strategic documents that contain a general view on energy security, efficiency and climate change. Examples are (in order of appearance):

[2006, Green paper – A European Strategy for Sustainable, competitive secure energy](#)

This formulates the major topics related to energy that should be addressed by the European Union

[2006, Action Plan for Energy Efficiency \(2007-12\)](#)

The Commission sets a target to save 20% of annual primary energy consumption in 2020. The biggest potentials for saving can be found in residential (27%) and commercial (30%) buildings. The necessity for the development of financial schemes is also addressed in the action plan.

[2008, Second Strategic Energy Review – Securing our Energy Future](#)

Among other things, the Commission gives suggestions for improvement of the EPBD directive.

These strategic documents in itself aren't legally binding for member states. Some of the targets are translated into more binding agreements or even into directives. These directives are legally binding and must be transformed into national legislation in every member state. Important directives are:

- The Energy Performance of Buildings Directive
- The Energy Service directive

The [European Regional Development Fund \(ERDF\)](#) is introduced to support less-developed regions in Europe. Energy efficiency related improvements in social housing are eligible for support.

In paragraph 3.1 *European policies and legal framework on energy and social housing* you'll find more detailed descriptions and references towards European policies.

National Policy

As a result of the Energy service directive, member states must formulate a National Energy Efficiency action plan. In such a plan national governments should describe which policy measures they're taking to improve the energy efficiency in their country. These action plans are publicly available and give good insight in national policies.

In paragraph 3.2 National policies and legal framework on energy and social housing, you'll find more detailed descriptions and references towards national policies.

Step 2. Examine the status of social housing in general

After setting national goals in step1, it is important to determine the actual present state of the social housing sector. This is important to estimate the effort that is needed to improve the housing stock. It also is important to have a reference situation so you'll be able to measure progress made. It would be most optimal if a reference scenario could be made for the social housing in which the expected business as usual developments is estimated. Such a reference gives insight in the housing stock and in energy consumption on longer terms

Brief overview of social housing in participating countries

Here we give a brief overview of the housing stock in the participating countries. In paragraph 3.2 you can find more details about the social housing situation in the Member States involved in the InoFin project.

Table 2-1 Shares of social housing in the housing stock

Country	No. of social dwellings	Total No. of dwellings	% social dwellings
Denmark	522,000	2,443,806	21%
Germany	*20,600,000	35,800,000	58%
Netherlands	2,362,000	6,800,000	35%
Bulgaria	**707,441	3,352,255	21%
Czech Republic	**1,165,000	4,302,084	27%
Latvia	***444,533	795,723	56%
Poland	**7,046,746	12,596,000	56%
Slovakia	**778,000	1,655,536	47%

* - in rental flats, ** - in panel buildings, *** - in municipal flats

Table 2-2 Energy performance of housing stock (kWh/m² year per period of construction) including space heating and DHW

Country	Before 1945	1946-1960	1961-1970	1971-1980	1981-1990	Since 1990
Denmark	161	140	119	106	89	64
Netherlands***	100	87	86		*66	**50
Bulgaria	170		200			180
Czech Republic	170	160	200	240	180	150
Latvia (excl. DHW)	n.a.	150				
Poland (excl. DHW)	250-380				160-200	120-160
Slovakia (excl. DHW)	182	179	170		159	128

*1981-1995, **since 1995, ***apartments only

2.2 Steps to be made at a local level

Step 3. Examine the status of local social housing

After setting target on a local level, it's good to determine the present state of social housing on a local level. Of course there must be interaction between step 3 and 4. Realistic targets depend on the present state of housing.

When examining the status of housing, it's important to have a more strategic and long term perspective. You only want to invest in real estate that has a strategic value. This value depends on the needs of future residents and if the dwellings meet this needs. In other words it's important to assess the quality of the housing stock. Energy efficiency is part of the overall quality assessment. It's clear that energy costs are an important issue for present and future residents. It's recommended to combine these energy related issues with other aspects of

quality. This can lead to opportunities for a more integral approach that can save money on the long term.

The following questions could be a guideline for this assessment:

- What type of residents will there be in the future? (Is the local population ageing? What income distribution will there be in the future?)
- What type of houses do these residents expect? (Apartments or single family? What size? What sort of neighbourhood?)
- What quality standards do these residents expect? (*What type of dwellings? How energy efficient?*)
- Does my housing stock meet these future needs?
- How should my housing stock evolve?
- Can I improve existing houses to meet future needs?
- Should I improve neighbourhoods to meet future needs?
- Should I build new houses to meet future needs?
- Should I demolish houses, and when should I do this?

In this step it's important to get a clear picture of the strengths and weaknesses of the present housing stock. This helps to make clear how the housing stock should ideally evolve and in this way it's easier to priority your actions. Practical and financial barriers should not play a role in this assessment. In later steps these barriers will be addressed.

Another part of this examination must be to get a clear picture of all relevant stakeholders.

- Who owns the houses?
- What is their legal status?
- What is their financial status?
- What authorities play a role in the refurbishment process?
- What interests do these stakeholders have?
-

Step 4. Identify existing local goals on energy efficiency and social housing or develop new ones

In step 1 and 2 energy efficiency of the social housing is seen from a national point of view. In this step these national goals must be transferred in local goals and policies. The present state and ideal state of the housing stock, as determined in step 3, should form the basis for the local goals. The ideal situation cannot be translated directly into targets, but could function as a long term ambition from which more realistic short en medium term targets can be distilled. The goals should be formulated in a 'SMART' way. That is Specific, Measurable, Attainable, Realistic and Timely.

Of course new goals must match with existing goals on a local level. This guidebook is not suitable for describing existing local housing targets in detail. Check local authorities for more details. On the website www.join-inofin.eu you can find some examples of local initiatives.

2.3 Steps to be made at project level

Step 5. Identify energy performance of building(s)

After step 3 and 4 it's made clear which buildings have priority and should be refurbished. In this stage it's important to get a detailed picture of the energy efficiency of the building(s). The Energy Performance of Buildings Directive (EPBD) contains the obligation for countries to implement an energy performance certification (EPC) scheme for buildings. These certificates must give detailed information about the efficiency of specific buildings. At present all EU member states have implemented such a scheme, but all in a different way. (see for instance the www.buildingsplatform.eu for a quick overview of the Implementation status) Independent of the sort of scheme implemented, the certificates should give a clear picture of the energetic quality of a specific building.

The IEE project Impact gives more information on energy auditing and certification. (<http://www.e-impact.org>)

Step 6. Choose technical means and estimate costs

In most countries, the certificates discussed under step 5 are combined with an advice for improvement of the building. Often technical means are mentioned with their saving effect. This information can be used for selecting the best suited technical means for improving energy efficiency.

The best technical approach will always differ for every specific refurbishment project. This guidebook will not give a lengthy list of all technical options available.

Most important recommendation is to get qualified technical assistance that helps to get the most optimal technical solutions for the specific buildings. Involvement of experts will help you to find cost-effective solution by fulfilling requirements on thermal technical parameters of buildings, achieving hygienic requirements, increasing of indoor thermal comfort and etc.

A very extensive source for the technical aspects of refurbishing can be found in the IEE project EI-education. On its website <http://ei-education.aarch.dk/>, you can find very detailed information about technical means and best practices. The project also produced a guidebook called, *EI-Education guidebook on energy intelligent retrofitting* that describes the complete refurbishing process and technical options in detail.

In the guidebook the authors sum up several steps for a holistic approach on refurbishment (text copied from guidebook):

1. Inventory of building condition and technical assessment of building components
2. List of measures / investments necessary that are necessary for the building to further comply with 6 essential requirements (mechanical resistance and stability, safety in case of fire, hygiene, health and the environment, safety in use, protection against noise, energy saving and heat retention); the investments are necessary for maintenance of the original building condition
3. Analysis of energy costs and energy use – identification of energy saving potential
4. Energy audit including economic evaluation of RES and RUE measures, feasibility study, if needed
5. Definition of the targets of building renovation (improvement of thermal comfort, prolongation of the building life time, low energy building, passive house standard refurbishment, increased value of the building ...)
6. Evaluation of refurbishment scenarios; methods: life cycle costing (LCC), LCA, social acceptance...
7. Definition of an action plan – list of renovation measures including EE measures and other necessary investments for renovation of a social housing
8. Design phase

The project website also redirects to other helpful tools.

Step 7. Identify (financial) barriers

To get the technical means installed and the building refurbished major barriers must be broken. For every project there will be specific barriers that cannot all be discussed in this guidebook. In the table 2-3, the most important barriers for the participating countries are summarized.

Step 8. Set financial scheme to address barriers

After identifying the barriers preventing refurbishment in step 7, in this step solutions must be found to overcome them. In this guidebook we focus on financial barriers. In **Fehler! Verweisquelle konnte nicht gefunden werden.** on page 11 you'll find a general overview of barriers and financial schemes suited to overcome them.

More information you'll find in chapter 4 and 5.

Table 2-3 Overview of barriers to housing refurbishment

COUNTRY	LEGAL	INSTITUTIONAL	FINANCIAL	TECHNICAL	OTHER
Denmark		District heat saving measures not prioritised (waste product, less motivation to save energy)	Rent has to be low in social housing sector		Unoccupied dwellings Very democratic decision making in social housing sector (time-consuming)
Germany	High performance refurbishments don't pay as raise in rents restricted		No more structural funding expected	Little integrated projects (renovation and energy supply combined)	
Netherlands			Rent increase after refurbishment lowers support (rent subsidies) Government grant budget lowered	Bad experiences with insulation technology in 1980s because of worsened ventilation causing moisture and mould problems	Prejudice against certain technologies (e.g. solar systems) due to lack of information
Bulgaria	Outdated law on ownership, it requires agreement of <i>all</i> owners (100%) for refurbishment	Owners of flats not organised in home-owner associations No housing cooperative for social housing	Low-income people cannot afford loans Banks only grant loans to organised group (association) of owners (often not existing)	Possibility to measure and monitor energy consumption, availability of technical data, ability to carry out energy audits	Mixed ownership of dwellings Mix of low- and high income people in housing blocks

COUNTRY	LEGAL	INSTITUTIONAL	FINANCIAL	TECHNICAL	OTHER
Czech Republic	Social housing not officially defined	No institution or special programme dealing with social housing Existing refurbishment programmes not coordinated	No possibility to increase rents after refurbishment of housing owned by municipalities	Lack of awareness on new technology (e.g. use waste heat and RES in buildings)	Lack of awareness on financing possibilities
Latvia	> 75% of apartment owners to vote for renovation		Practically no government support for refurbishment Relatively low income level		Fear of inhabitants of taking loans
Poland		Lack of promotion from the state	Long payback time of projects State support remains limited	Housing cooperatives not technically skilled	Inhabitants avoiding loans (preferring state support)
Slovakia	> 75% of apartment owners to vote for renovation	Lack of capacity at government agencies Unsuccessful energy planning at local / regional level Ongoing transfer of ownership	Limited access to capital Low utilisation of grant schemes (too restrictive)	Short-sight view (extending lifetime of panel building not seen as priority yet)	Lack of awareness on possibilities for refurbishment

Step 9. Implement financial scheme

The implementation of the financial scheme will overall include:

- Management set-up (day to day management and overall programming/management)
- Setting up the needed legislative framework
- Measures to verify projects
- Measures to support projects

Step 10. Evaluate effects

Despite all the planning before refurbishment, in practice unexpected events will occur. A good evaluation process helps, so adjustments can be made during the project. If the project is part of a broader local or national policy, evaluation is even more important. It's necessary to figure out whether or not the chosen approach is successful and if up scaling to other projects will be sufficient to meet the targets.

The end goals for the project can be about energy efficiency or social development. The evaluation process should have a wider scope than these goals alone. Often is evaluation missing after the implementation of refurbishment process even though it is a very good tool for further support of the refurbishment process on local as well as on national level.

Evaluations should be made about:

- Energy consumption and savings
- Costs of technical measures
- Energy costs after refurbishment
- Satisfaction of residents
- Positive and negative aspects of refurbishment process

The end results of the project should be compared with the initial state as determined in Step 2, 3 and 5. In this way it's possible to monitor what contribution the project made on project, local and national level.

3 Government Policies and Legal Framework

For a successful refurbishment projects it's important to be aware of the legal and policy context. In this chapter the most important European and national policies are described. Local policies are also very important but because of their diversity they cannot be described in here.

This chapter can be seen as a reference in which you can find links towards the most important legal and policy documents.

3.1 European policies and legal framework on energy and social housing

More and more policy measures on energy efficiency of buildings are initiated by the European Commission. In this paragraph the most important legislation and policy plans are discussed.

The European Commission published a variety of documents concerning energy efficiency. Most of these documents represent a stage in the total decision making process of the Union. In general this process starts with a general long term vision on energy efficiency. This vision is elaborated further in action plans and finally formalised in directives. These directives form the legal framework for member states to implement national legislation.

Second Strategic Energy Review - Securing our Energy Future

The most recent overall vision published in November 2008 is the "*Second Strategic Energy Review - Securing our Energy Future*". This document could be seen as a roadmap for Europe to meet its 20-20-20 goals.¹ In comparison with earlier action plans, this review focuses more on security of supply. The commission proposes five major focus points for energy:

- Infrastructure needs and the diversification of energy supplies
- External energy relations
- Oil and gas stocks and crisis response mechanisms
- Energy efficiency
- Making the best use of the EU's indigenous energy resources.

When energy efficiency is concerned, the commission is planning to improve existing policies and legislation. For buildings the EPBD should be revised (see further below). Also a Sustainable Energy Financing Initiative is under preparation to stimulate large scale funding from the capital market in energy efficiency among others.

¹ Reducing greenhouse gas emissions by 20%, increasing the share of renewables in the energy consumption to 20% and improving energy efficiency by 20%, all of it by 2020.

More info:

http://ec.europa.eu/energy/strategies/2008/2008_11_ser2_en.htm

Energy Efficiency Action plan

The actions considering energy efficiency mentioned in the review are seen as follow ups of the present Energy Efficiency Action plan. The commission sets a target to save 20% of annual primary energy consumption in 2020. The biggest potentials for saving can be found in residential (27%) and commercial (30%) buildings.

The main topics in the action plan are:

- Improving energy performance
- Improving energy transformation
- Limiting the costs linked to transport
- Financing, incentives and fares
- Changing behaviour
- Adapting and developing international partnerships

The actions are formalised into three different directives

- The [Eco-design directive](#) to stimulate the efficiency of appliances
- The Directive on end-use energy efficiency and energy services, to stimulate energy efficiency in general and the development of Energy service companies
- The Energy Performance of Buildings Directive, to stimulate energy savings in buildings.

The last two will be discussed below.

The necessity for the development of financial schemes is also addressed in the action plan. The structural and cohesion fund can be used for new member states to finance improvements in energy efficiency.

More info:

[2006, Action Plan for Energy Efficiency \(2007-12\)](#)

Energy Performance of buildings directive

The Directive is set to promote the improvement of energy performance of buildings with the following requirements to be implemented by the Member States:

- The general framework for a methodology of calculation of the integrated energy performance of building
- The application of minimum requirements on the energy performance of new building
- The application of minimum requirements on the energy performance of large existing buildings that are subject to major renovation

- Energy performance certification of buildings
- Regular inspection of boilers and of air-conditioning systems in buildings and in addition an assessment of the heating installation in which the boilers are more than 15 years old
- Requirements for experts and inspectors for the certification of buildings, the drafting of the accompanying recommendations and the inspection of boilers and air-conditioning systems

Text of directive:	http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&type_doc=Directive&an_doc=2002&nu_doc=91&lg=en
General information	www.buildingsplatform.eu

Proposal for a directive on the energy performance of buildings (recast)

In the Second strategic Energy review, the Commission proposed a revision of the EPBD. The most important aspect of this recast is the elimination of the 1000 m² limit for obligatory improvement. At present the EPBD forces building owners to invest in energy saving measures when a building with an floor area over 1000 m² is refurbished. When this limit is removed, for all buildings, including residential buildings, large scale refurbishing must be combined with energy saving measures.

Text of directive	http://ec.europa.eu/energy/strategies/2008/doc/2008_11_ser2/buildings_directive_proposal.pdf
General information	www.buildingsplatform.eu

Energy Service directive

The energy Service directive (ESD) contains different key elements, some of which are important for energy efficiency in social housing:

- National governments must prepare National Energy Efficiency action plans (NEEAP) every three years.
- Within the directive an indicative energy saving target of 9% in 9 years is set.
- National governments should create conditions to develop and promote a market for energy Services.
- The directive sets requirements on metering and billing

Text of directive	http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=Directive&an_doc=2006&nu_doc=32
General information	http://www.euroace.org/esdirective.htm

European Regional policies

The purpose of these funds is to reduce the gap between the levels of development of Europe's regions. One of the issues that are eligible for support is energy-efficiency.

Text of directive	http://ec.europa.eu/regional_policy/sources/docoffic/official/regulation/newregl0713_en.htm
General information	Working for the regions, EU Regional Policy 2007-2013

3.2 National policies and legal framework on energy and social housing

Apart from the European policies, national authorities have their own approach on energy efficiency in buildings. There are international websites that provide an overview on policy measures.

Energy efficiency

MURE Database

The MURE Database is a result of the Intelligent Energy in Europe project Odyssey-MURE. In the database all policy measures to stimulate energy efficiency in all end-user sectors are comprehensively described. Since 2007 all 27 EU countries, Norway and Croatia are included in the database. Not only the presently active measures but also historical measures (from about 1995) can be found in here.

<http://www.isis-it.com/mure/>

IEA Policy and measures

The International Energy Agency has a public database with energy efficiency policy measures for many countries, including most of the EU27.

http://www.iea.org/textbase/pm/index_effi.asp

National Energy Efficiency action plans

As a result of the Energy Service directive, all member states must formulate a National Energy Efficiency plan. In such a plan the country must describe in detail which policy measures it takes or will take to meet the energy efficiency targets. In 2007 all countries have published the first version of this plan that must be updated every three years.

http://ec.europa.eu/energy/efficiency/end-use_en.htm

Implementation EPBD

The energy performance of Buildings directive is a regulatory framework for member states to implement energy efficiency policies for buildings. Every country must transfer the directive into national legislations. The status of this implementation is monitored by the EU. The national progress reports can be found on <http://www.buildingsplatform.eu/cms/index.php?id=178#c730>

Social housing and financial means

Social housing policy is to a large extent independent of the international context. There are some organisations that have can give an overview on national social housing policies

Cecodhas

Cecodhas is a European network for parties involved in social housing. The organisations' website offers a comprehensive overview of social housing in most European countries.

www.cecodhas.org

InoFin Overview Report

The first stage of the InoFin project contains an inventory of national social housing policies. An overview report with a description of these policies can be downloaded in here:

<http://www.join-inofin.eu/country-surveys.html>

In the next paragraphs we give a summary of the regulatory framework discussed in the report for all the countries participating in the InoFin project.

3.2.1 Denmark

Table 3-1: Regulatory framework Denmark

Regulatory framework on social housing	
<p>The number of dwellings in social housings in Denmark is approximately 522,000 out of a total of 2,444,000 dwellings nationwide. Social housing in Denmark is here defined as: <i>"rental accommodations that have received state support for either establishment or renovation or is owned by a municipality"</i>. Most of these are owned by a not-for-profit housing cooperative (mission: common social benefit).</p>	
<i>Responsible (National) authority:</i>	The Ministry of Social Affairs
<i>Legislation/ policy</i>	<p>"Act relative to the Rent", LBK no. 920 of 10/09/2004 (Valid)</p> <p>"Act on the Rent of Social Dwellings", LBK no 921 of 10/09/2004 (Valid)</p> <p>"Act on Social Dwellings" LBK no. 610 of 21/06/05</p>
Regulatory framework on energy saving	
<p>To support energy saving measures and increase the efficiency of energy consumption in buildings the <i>"Law on energy savings in buildings"</i> has been adopted. The law does not directly target social housing but applies to all housing in Denmark and includes:</p> <ul style="list-style-type: none"> ■ Energy Labelling (since 1996) ■ Renovation exceeding 25% of building envelop or exceeding 25% of building costs must apply to stricter building regulation ■ Heat costs to be set by the Danish Energy Regulatory Authority ■ Until 2002 subsidies were available for energy efficient heating systems 	
<i>Legislation/ policy</i>	"Law on energy savings in buildings" Law no. 585 of 24/06/2005 (Valid)
Financial framework	
<p>Within the last years, financing of the different social housing types is unified. In details, the following is valid from 15 June 2001 until 1 January 2007:</p> <ul style="list-style-type: none"> ■ Original capital covers 7 % of the initial costs (covered by municipality or commune), ■ The tenants (department) contribution covers 2% of the capital and ■ 91 % is covered by loan or` by mortgage on real property, the state is then covering the debt servicing on the granted loan. <p>Resources for Construction and Refurbishment in the Social Housing Sector in Denmark are generated through the <i>National Building Fund</i>. The National Building Fund is an independent institution, with the objective to promote the self-financing of social housing.</p>	
<i>Legislation/ policy</i>	National Building Fund

3.2.2 Netherlands

Table 3-2: Regulatory framework the Netherlands

Regulatory framework on social housing	
<p>In the Netherlands a significant part of the housing stock is owned by social housing cooperatives providing housing to lower and middle-income households. Although not strictly defined, one can say that social housing in the Netherlands is the housing stock owned by social housing cooperatives. Of the total number of dwellings of 6.8 million, about 2.36 million are part of the social housing stock. This social housing stock can further be divided into apartments (1,129,000) and single-family houses (1,233,000).</p>	
<i>Responsible (National) authority:</i>	The ministry of Housing, Spatial planning and the Environment (VROM)
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ The Housing Act (Woningwet) ■ The Act on Rental Prices of Habitation (Uitvoeringswet Huurprijzen Woonruimte) ■ Decree on social housing maintenance (Besluit Beheer Sociale Huursector) ■ Rent Bonus Act (Huurtoeslagwet)
Regulatory framework on energy saving	
<p>From a technical and energy performance perspective new houses as well as refurbishments are covered within the <i>Building Code (Bouwbesluit)</i>, which is derived from the housing act, contains some specific rules on energy saving within new-to-build dwellings. Minimal standards are formulated for insulation quality of walls, floors, ceilings, doors and windows. Next to this standards for specific parts the Energy Performance Standard (EPN) regulates the energy use of entire buildings.</p> <p>In 2008 the Housing cooperatives signed a voluntary agreement to make existing dwellings 20% more efficient in the coming ten years.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Building Code ■ Voluntary agreement Cooperatives on energy efficiency
Financial framework	
<p>Energy conservation became an important issue in the Netherlands at the time of first and second oil crises in the seventies. Energy saving in the residential sector was one of the main issues in the policy plans and grant programmes were developed by then. Since those days several different support schemes have been introduced, of which green funding (attractive interest rates for "green" activities) and EIA (energy investment deduction) are still active.</p> <p>The Dutch government is bound to introduce an adjustment to the rules to determine maximum rental prices. Maximum rental prices will to some extent depend on the Energy performance Certificates introduced in 2008. A landlord can ask more rent for a dwelling with a better energy label. In this way housing cooperatives are compensated somewhat for their investments.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Green Funds Scheme ■ EIA

3.2.3 Germany

Table 3-3: Regulatory framework in Germany

Regulatory framework on social housing	
<p>There are about 37 million flats in Germany, 30% of this housing stock is more than 50 years old, and 11% were constructed in the last decade. After the German reunification, the municipal housing stock in the Eastern part of Germany (incl. Brandenburg) moved to municipal companies and cooperatives and private estate owners. Flats in urban areas and a large part of the remaining flats in multi-storey buildings are being run by housing companies that are members of the Registered Association of Housing Companies of Berlin-Brandenburg (BBU).</p>	
<i>Responsible (National) authority:</i>	The Federal Government, Länder (the German regions)
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ The Second Housing Law ■ The Fair Housing Act ■ The Rent Regulation Law ■ The Second Billing Regulation ■ The New Housing Rent Regulation <p>Including, in the state of Brandenburg:</p> <ul style="list-style-type: none"> ■ The Housing Support Provision, which acts as an administrative regulation.
Regulatory framework on energy saving	
<p>A fundamental part of the Climate Protection Programme of the Federal Government is the Energy Conservation Regulation together with the loan programmes run by the Kreditanstalt für Wiederaufbau (KfW - Reconstruction Loan Corporation) for building refurbishment aiming at reducing CO₂ emissions.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Law on Conservation of Energy ■ Energy Conservation Regulation ■ Heat cost regulation
Financial framework	
<p>There are a number of <i>conventional loan programmes</i> in Germany that support only the modernisation of single parts of the buildings. This includes support of fixing new windows or new heating installations.</p> <p><i>Innovative programmes</i> do treat a building as a system of heating and thermal insulation. In such programmes the support depends either on the decrease of the energy demand, which is to be proved (<i>delta procedure</i>) or on the achievement of a defined energy demand level (<i>target procedure</i>). The target procedure can be linked to the additional requirements on heat conservation in order to outrange the minimum requirements of the Energy Conservation Regulation.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ CO₂ Reduction Programme of the KfW/Kreditanstalt für Wiederaufbau (Reconstruction Loan Corporation) ■ The CO₂ Building Refurbishment Programme of the KfW

3.2.4 The Czech Republic

Table 3-4: Regulatory framework in the Czech Republic

Regulatory framework on social housing	
<p>Social housing includes the following types of housing:</p> <ul style="list-style-type: none"> ■ Housing used for accommodation of that part of population which is under the risk of social segregation, ■ Housing acquired using public financial sources or with their direct support, e.g. housing subsidised by the Ministry for Regional Development or by the State Housing Fund, respectively housing built by municipalities without government grant; ■ Other flats or family houses if their total floor area would not overpass the given surface threshold, e.g. 150 m² in case of family houses and 90 m² in case of flats. <p>Currently there are about 1,165,000 of these dwellings in panel houses, which is about 1/3 of the total housing stock.</p>	
<i>Responsible (National) authority:</i>	The Ministry for Regional Development
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Housing Policy Concept, Resolution No 292 of 16 March 2005 ■ Rental Law
Regulatory framework on energy saving	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Act on Energy Management
Financial framework	
<p>The “Housing Support Programme” of the Ministry of Regional Development includes direct grant support for measures leading to:</p> <ul style="list-style-type: none"> ■ Regeneration of prefabricated panel housing estates ■ The construction of rented flats ■ The construction of technical infrastructure for subsequent construction of apartment blocks and houses. ■ Support for the construction of subsidised flats. ■ Repairs of defects of prefabricated panel building <p>Support financed out of the State Housing Development Fund includes the following:</p> <ul style="list-style-type: none"> ■ Support for the construction of rented flats for persons in defined (low) income classes ■ Provision of low-interest loans to young people up to the age of 36 for new housing construction ■ Provision of low-interest loans to young people up to the age of 36 for the acquisition of a flat ■ PANEL programme - facilitating the financing of comprehensive repairs of residential panel buildings. ■ Support for the provision of low-interest loans to municipal funds. 	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Housing Support Programme ■ State Housing Development Fund

3.2.5 Slovakia

Table 3-5: Regulatory framework in Slovakia

Regulatory framework on social housing	
<p>Total housing stock in Slovakia is represented by 1,931,441 dwellings (2004), of which 1,665,536 are permanently inhabited. Of these dwellings 778,000 are in panel buildings. There is no social housing sector defined in the Slovak Republic. Therefore statistics do not include data particularly for social housing. Social housing can be understood as public rental housing owned by municipalities or the state. This share of rental housing stock has, however, significantly decreased during the last years. It decreased from 24% in 1991 to 3.5% today.</p>	
<i>Responsible (National) authority:</i>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ The National Housing Policy Concept up to 2010 ■ Act on Ownership of Apartments ■ Civil Code ■ Commercial Code ■ National Council Act (No. 16/1996) on Prices
Regulatory framework on energy saving	
<p>According to the Act No. 657/2004 on heat energy sector, municipalities have to prepare development concepts in the field of thermal energy. A special methodology defines the minimum contents of the concept. After the approval of the development concept in the field of thermal energy by municipal representatives, this becomes a binding document.</p>	
<i>Legislation/ policy</i>	
Financial framework	
<p>There are three types of programmes in Slovakia financing housing refurbishment.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ State Fund for Housing Development ■ Building Savings Programme ■ State Support Program for Housing Stock Renewal

3.2.6 Poland

Table 3-6: Regulatory framework in Poland

Regulatory framework on social housing	
<p>Poland is divided into 2478 communes (municipalities) and 884 cities, acting as self-governments. In 1990 they have taken over the ownership of dwellings of the municipal housing stock from the state. The total number dwellings are 12,596,000 dwellings (2003).</p> <p>The only definition which contains the words “social housing” is related to a very limited number of apartments, which are fully at the disposal of municipalities and where the total cost of maintenance is covered by communes. Extension of definition of social housing by “lower income groups” and “recently privatised housing stock” increases significantly the number of apartments. Under “<i>lower income groups</i>” we understand the households, which are not able to construct or purchase their own single-family building or dwelling. It means that all apartments constructed by cooperatives, state, communes, enterprises and so-called social housing societies can be identified under this category.</p>	
<i>Responsible (National) authority:</i>	Ministry of Construction
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> Strategy of long-term development of housing for 2005-2025
Regulatory framework on energy saving	
<p>There are no specific refurbishment plans stated in the state housing policy. The approach of the policy is rather market oriented e.g. owners of buildings and dwellings should take care of the stock. The state provides some support in the form of subsidizing loans and low-income families.</p>	
<i>Legislation/ policy</i>	
Financial framework	
<p>Since 2004 a pilot programme is ongoing, providing a grant of 35% of investment costs for refurbishment projects. It is aimed at projects proposed by municipalities (10 million euros have been reserved). About 3000 apartments can be beneficiaries of this pilot program. This is the only “pure” grant program for energy efficiency refurbishments in Poland and is dedicated to social housing in narrow terms – for vulnerable families only.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> Thermo renovation Fund

3.2.7 Latvia

Table 3-7: Regulatory framework in Latvia

Regulatory framework on social housing	
<p>The Law on Social Apartments and Social Houses in Latvia defines a social house as a house which belongs to municipality and which rents apartments in this house to low-income people. If we take this official Latvian definition than only approx. 35 to 40 buildings are considered to be social housing and it represents very small part of all housing stock. Therefore it was decided to use the InoFin definition and include all housing that was built after 1945 because almost in every house there is at least one low-income family renting a dwelling from their municipality.</p>	
<i>Responsible (National) authority:</i>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Law on Social Apartments and Social Houses ■ Housing Policy Framework Document ■ The National Building Program ■ Law on Rent of Residential Space ■ Law on Apartment Ownership
Regulatory framework on energy saving	
<p>One of its sub-programs of the national building program is Energy Efficiency in Buildings. The objective of this sub-program is to analyse the existing general situation in Latvia in the area of heat retention, provide information on efficiency of heat insulation and heat opportunities and on activities of optimisation. It includes characterisation of the existing situation, more accurate specification of opportunities to save energy resources in (residential) buildings, analyses of the necessary financial resources for raising energy efficiency in buildings and pay-off period of the investment.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Latvian Building Code
Financial framework	
<p>Up to now there are no national/regional subsidy/grant schemes available for (social) housing refurbishment in Latvia. The only state support that has been provided is for energy audits. It is managed by the State Housing Agency.</p>	
<i>Legislation/ policy</i>	

3.2.8 Bulgaria

Table 3-8: Regulatory framework in Bulgaria

Regulatory framework on social housing	
<p>In December 2003 the total housing stock in Bulgaria amounted to 3,688,802 dwellings from which 328,726 in buildings for temporarily habitation (rest houses, villas, etc.) and 7,851 are primitive dwellings.</p> <p>There is no definition of social housing in Bulgaria. The municipalities offer rental dwellings to people that are categorised according to the legislation. This categorisation is not based on income, the requirements concern the social status of the applicants (married, with children, etc.) and they should not have another estate property. The InoFin definition of social housing describes the typical situation in Bulgaria, as many owners of flats are with low income.</p>	
<i>Responsible (National) authority:</i>	The Ministry of Regional Development and Public Works
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ Law for ownership ■ Rules for management, order and control in the blocks of flats
Regulatory framework on energy saving	
<p>With the Regulations to the Energy Efficiency Act are implemented all elements of the EU Directive on Energy Performance in Buildings. The regulations are in force since March 2005. According to them all buildings after major refurbishment should meet the new, higher, energy characteristics. These buildings are subject to energy audits before and after the refurbishment and to energy certification.</p>	
<i>Legislation/ policy</i>	
Financial framework	
<p>In Bulgaria there are currently two grant schemes available for housing refurbishment. The Energy Efficiency Fund (EEFB) - assisting energy efficiency investments, managed as a public-private partnership. The Residential Energy Efficiency Credit Line (REECL), established by the European Bank for Reconstruction and Development.</p>	
<i>Legislation/ policy</i>	<ul style="list-style-type: none"> ■ The Energy Efficiency Fund (EEFB) ■ The Residential Energy Efficiency Credit Line (REECL)

4 Principles of Designing Financial Schemes

4.1 Overview of barriers

The creation of innovative financing schemes is dependent on overcoming prevailing barriers for financing and implementation of energy retrofitting projects in the individual countries. The typical barriers summarized below are of a general cross-national character, but vary from country to country depending on economic development status, framework conditions etc. Thus, the elements to be included in financing schemes must be shaped to the specific local conditions and circumstances within the individual countries.

4.1.1 Awareness and Social-related barriers

Realisation of the huge potential for EE projects within the social housing sector is first of all relying on the social housing companies' awareness of potential EE measures, the potential impact of these, and how to implement and finance them.

Lack of awareness is still a wide-spread problem within the sector. Low incomes combined with relative high heating costs often put a negative attitude towards energy investments and as such enhances this. Low incomes can further create fear to take credits.

Consequently, various measures to raise awareness about energy savings needs to be considered. Most likely dissemination and replication of best practice from real cases would be among the most efficient measures.

Capacity building among banks is also worthwhile considering, as mentioned below.

4.1.2 Organizational barriers

When defining financing schemes it is important to take into consideration how to cope with ownership structures in an appropriate way.

Thus, another initial pre condition for implementing EE measures is the existence of proper ownership structures within the social housing companies. In many cases end-users are not properly organised into clear ownership structures (e.g. house owner associations) or existing structures are not functioning properly with regard to decision-making processes. Proper ownership structure may be hindered by

- Legal frameworks
- Lack of knowledge and experience in common property management
- Inability and/or lack of trust to each other to take common decisions on implementing a project.

4.1.3 Economic and risk-related barriers

Low affordability among social housing companies causes limited access to existing financing schemes for EE projects in general, seen in relation to current financing conditions.

Furthermore the pay-back time for many EE measures is much longer than the maturity time offered by current financing schemes. Particularly local banks in the INOFON countries only offers short maturity times of max. 5-6 years, but with a low interest rate typically ranging from 5 – 7 % (apart from Bulgaria). Some measures may be implemented by means of such existing local bank loans, but the maturity time is too short in relation to the resulting annual energy savings from many measures (e.g. insulation measures).

Ways to make schemes more accessible include softening of the loan conditions, through soft loan schemes, and provision of partial loan guarantees.

Pooling of projects and financing sources may also help to soften the loan conditions as this will help reducing the relatively high transactions costs per project which often causes an increased interest level.

In addition higher awareness among financing institutions on EE projects may help ease risk mitigation procedures, and as such have a positive impact on the loan conditions.

4.1.4 Capacity/capability barriers – qualification of loan applications

Proper capacity and capability is needed to identify, develop and document EE projects in accordance with the requirements of the financing institutions.

Improper project documentation and loan applications are often a source to rejection or delay of projects by financing institutions. The most efficient way to ensure better quality may be financial support for use of pre-qualified consultants possibly supplemented with mandatory energy audits. Other typical measures are elaboration of manuals or help-desks with ad-hoc support.

4.2 Overcoming the barriers

Based on the assessment of pros and cons of various existing schemes within the INOFIN project, it has been generally concluded that proper financing elements/schemes within the social housing sector should help overcome barriers by:

- Heightening awareness towards implementation of energy saving measures
- Supporting qualification of loan applications
- Providing additional financing resources (or sources must be considered in combination)
- Softening the financing conditions thereby creating more access to schemes

In some cases raising awareness would be sufficient to utilise the potential of already existing schemes, while in other cases more of these elements are needed to tailor a suitable scheme. It is also important to stress that an initial pre condition for implementing measures is the existence of proper ownership structures (as mentioned above).

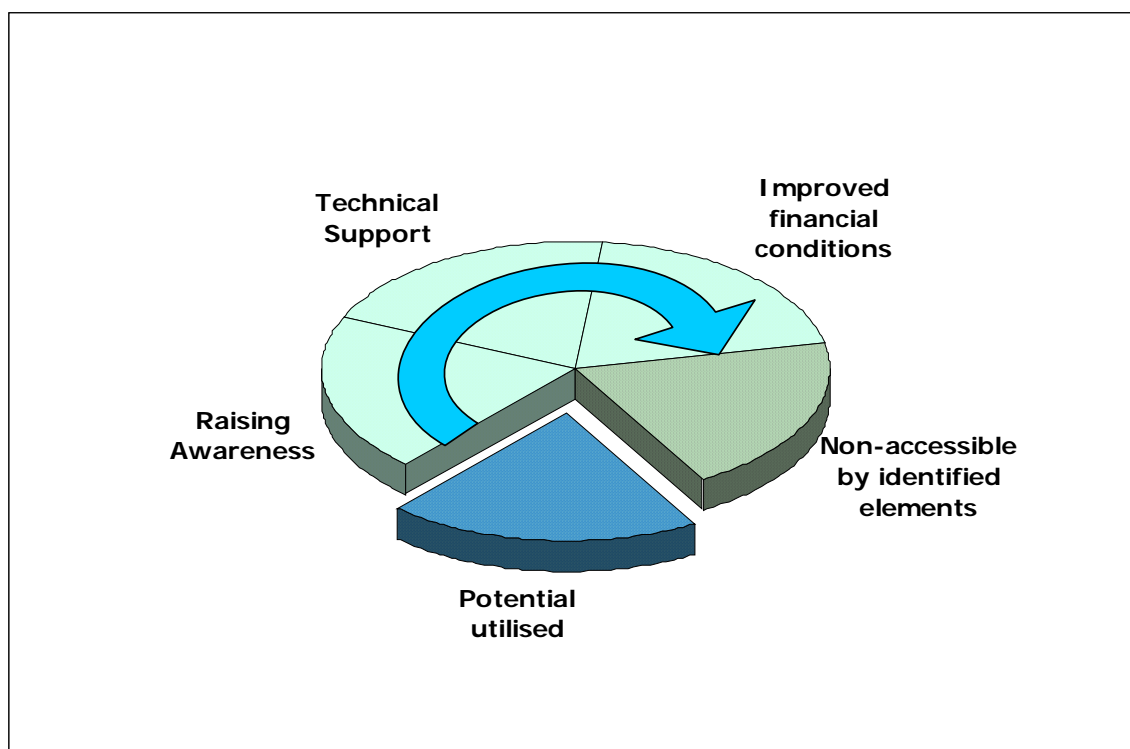


Figure 1: Overall elements identified to overcome barriers for utilisation of the potential for implementing energy saving measures in the social housing sector

As illustrated in the above figure it will most likely not be possible to utilise the whole potential by the identified elements, e.g. in cases involving end-users at the lowest income level (pensioners etc.). In such cases social security support schemes may be considered.

In the table below the overall identified elements are further detailed in relation to the prevailing identified barriers.

The indicated elements could be improved in existing schemes, possibly seen in relation to combination of schemes or could be built into new schemes.

Table 4-1: Overview of measures

General measures	Specific measures		Barriers targeted to be eliminated by the measures
Improvement of financing conditions	1	Loans softened by municipal, state or international donor budget	<i>Low affordability amongst part of the target group causing limited access to financing schemes</i>
	2	Grant schemes with EU money from Structural Funds	<i>Relatively high transaction costs for EE projects</i>
	3	Grant schemes with national money	<i>Low awareness between potential investors (donors) on measures and sources of financing</i>
	4	Guarantee funds financed by national or international organizations	
Provision of additional financing resources	5	Revolving funds based on different sources (international, national, municipal)	<i>Lack of access to financing resources</i>
	6	Green Financing Schemes on the basis of CO ₂ reductions	<i>Implications (organisational or other) in putting these schemes into place</i>
	7	Third Party Financing on the basis of commercial loans	<i>Legal and institutional framework for Green Financing is not in place in many countries</i>
	8	Construction Savings Banks	<i>International financial institutions should not compete with local commercial banks</i>
Raising of awareness	9	Support measures to heighten awareness of energy saving measures and finance options	<i>Lack of awareness</i>
Supporting qualification of loan applications	10	Support measures to identification and preparation of projects for financing	<i>Identification, preparation and documentation of projects are not appropriate to meet requirements of financing institutions</i>

4.3 Selection of a Proper Financing Scheme

The selection of schemes in the individual counties could include a proper mix of the above-mentioned elements tailored in relation to the local conditions and circumstances. This is illustrated in the figure below.

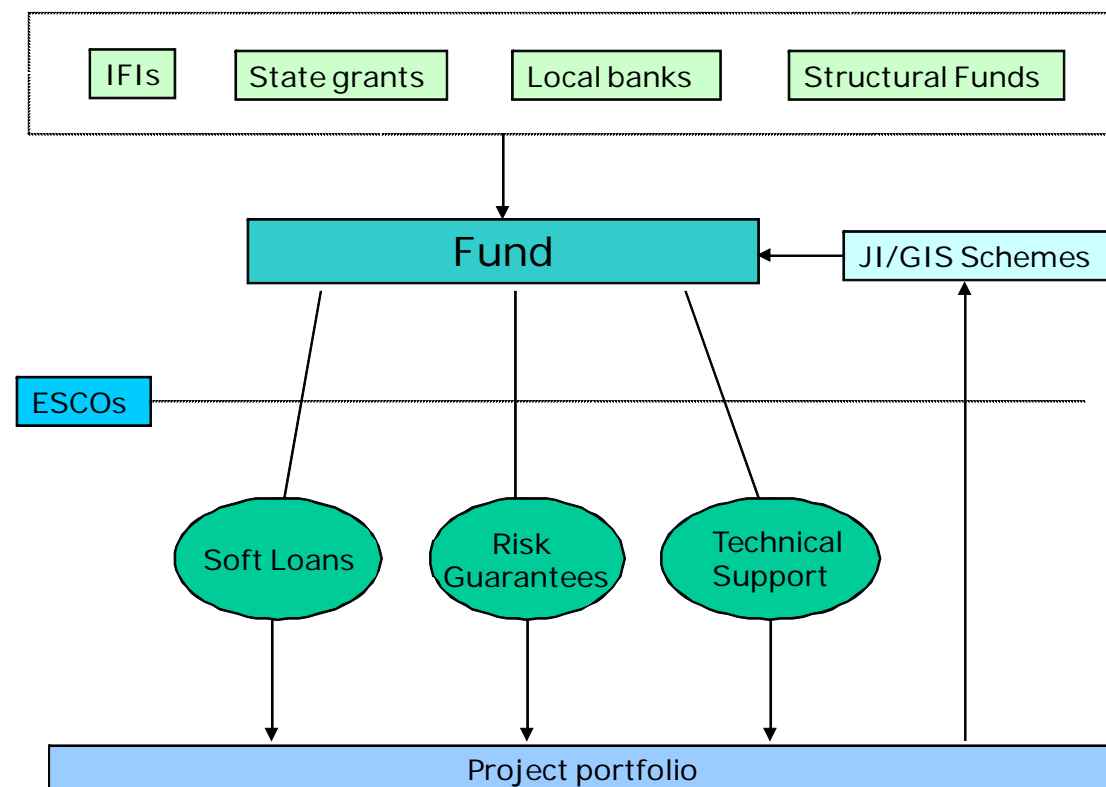


Figure 2: Mixing of financial resources

As illustrated above various financial resources can be combined by means of a thematic fund for refurbishment of social housing. This fund would offer various services including soft loan schemes and risk guarantees.

ESCOs could act as intermediaries between the fund and the project portfolio. However, it should be taken into account that this market is still immature in relation to the residential sector, and may need demonstration projects for further development.

5 Development Options of Financing Schemes

This chapter will review financing schemes of relevance for energy retrofitting of the social housing sector in New Member States. The description is supplemented with practical examples of the financing schemes, based on the studies made under the InoFin project.

5.1 Public grant programmes

Public grant programmes are used in many countries to support energy efficient retrofitting projects that would otherwise not occur due to the existing barriers. The rationale behind would normally be to realise energy and social policies, but other motivating factors can be to raise the economic activity in society and gain spin-off effects like increased employment.

The advantage of public grant programme is that it provides a stable instrument for promoting project's realisation, provided the grant subsidy level is sufficient to attract the building owners, and can be an important factor in raising the general awareness and trust in energy efficient retrofitting projects.

The disadvantage is that it is normally difficult to put aside the necessary grant subsidies in the public budgets to realise the policy goals. Therefore, it is to be considered how public grant programme can interact with other financing schemes in order to increase the investment volume and thereby achieving the desired impact.

Example: The Polish Thermo-Renovation Programme

The Thermo-Renovation Programme was introduced in 1998 as a support mechanism for energy efficient retrofitting projects. The programme provides a grant subsidy of 25% calculated based on 10-years heat cost savings, which will cover repayment of the loan not exceeding 80% of total investment cost - to the applicants that are able to fulfil the related criteria (at least 25% heat demand savings). This entails that the given project must meet minimum technical and financial criteria, as verified by energy audit and financial analysis. The programme is managed by the state owned Bank Gospodarstwa Krajowego/BGK and a number of commercial banks are involved in the loan giving supplementing the grant part.

The Thermo-Renovation Programme has proved to be increasingly successful among target groups in the Polish housing sector. Especially housing associations connected to multi-family buildings have benefited of the programme and it has developed to be a key source for financing of energy efficient retrofitting. Also authorities in Poland have reckoned the benefits of the programme, including its multiplier effect of the subsidies.

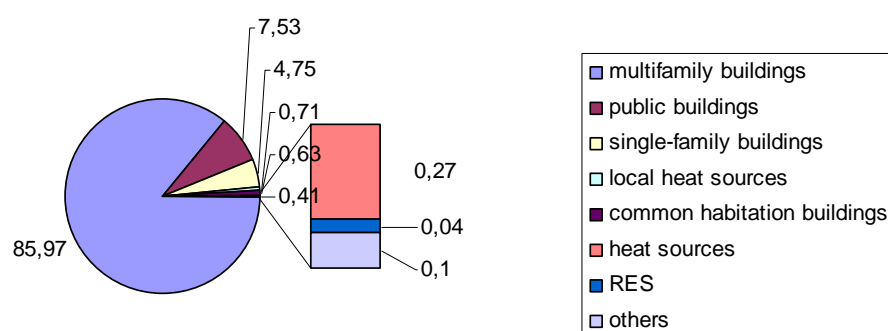
Among the positive side effects can be mentioned that in the period 1999-2006 the construction sector was estimated to increase its employment level by about 60,000 as a result of the programme.

The InoFin project, facilitated via its Polish partner NAPE, has taken part in a new orientation of the Thermo-Renovation Programme, including putting in place innovative elements. This includes that the subsidized loan can be used for financing up to 100% of total cost, which makes it more attractive for home owner`s associations having problems with provision of own equity. Furthermore, there is introduced additional subsidised loan, which can be used for retrofitting measures with low energy efficient impact associated with thermal retrofitting loan.

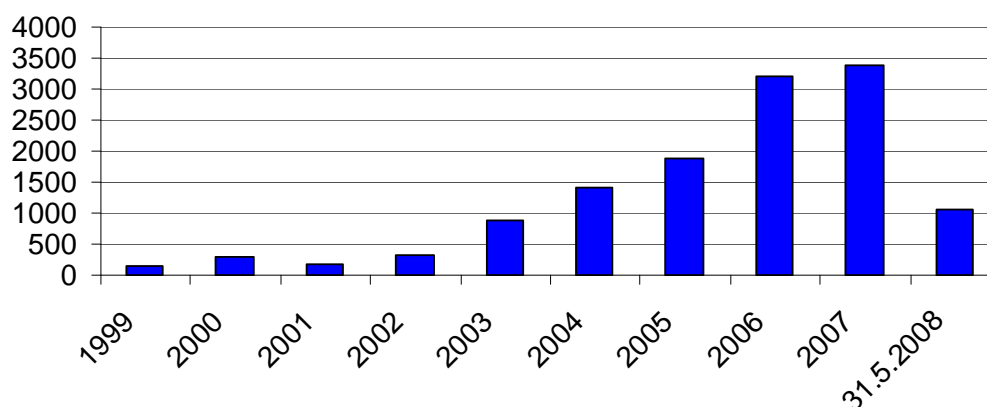
Key facts

In the period 1999-June 2008, the programme supported 12,777 projects, of which 10,979 projects were connected with the social housing sector.

Structure of beneficiaries of Polish Thermorenovation Fund until 2008



Trend of application for subsidy from the Polish Thermorenovation Fund



The cost-benefit analysis of the scheme shows high level of return of the subsidy to the state budget as:

- The value of energy efficient refurbishment measures reached around 1000 million euro (including VAT tax)
- While the value of subsidy was around 180 million euro only
- The implemented measures brought significant CO2 emission reduction, however they are not registered yet



The picture above is an example of a building renovation supported by the Thermo-Renovation Programme. It concerns a building on Bukietowa Street 8 in Warsaw and shows the building before and after refurbishment, April 2003. The building described was constructed 1963 in typical panel technology. It has 48 dwellings, 2,400 m2 usable area and occupied by 98 persons, most pensioners and low-income families. Though the project entails a rather high payback period of 10 years, reflecting a certain complexity in the design of energy efficient measures in multifamily buildings, it has turned to be transparent and affordable for all the involved social groups, including vulnerable households being under municipal care.

5.2 Softening of loans

A soft loan can be defined as a loan with generous repayment, typically due to a below-market rate interest.

Soft loan:

A loan with more generous repayment conditions than conventional bank loans

International financing institutions often set up Soft loan schemes to developing countries. In this context soft loan schemes typically have extended grace periods in which only interest or service charges are due, in addition to offering longer amortization schedules and lower interest rates than conventional bank loans.

Typical ways of softening soft loan schemes are:

- Direct subsidies on interests
- Risk premium, e.g. an IFI or the state can guarantee a certain amount of loans, typically a 30-80 % share.
- Capital grants to a revolving fund. Loans from this revolving fund are typically paid back at low or no interest.

Example: Loans softened by Czech State budget – linked to the ‘PANEL Programme’

This programme is operated in the Czech Republic since 2001, and entails a mix of loans and bank guarantees

Via the PANEL programme the clients can obtain loans that are around three percentage points lower than alternative loan options. The offer is limited to loans not exceeding CZK 4,800 per 1 m² of the floor area of a flat.

As viewed by the InoFin project team the current system works well. However, one problem is that available money for the system from the state budget is limited and will be even more limited in the future due to restrictions in the state budget expenditure. Consequently, it is recommended to reduce the amount of support and saved money could be used for supporting an additional number of projects.

Example: Loans softened by German State budget through KfW



The building refurbishment programme of the German credit bank for reconstruction (KfW – Kreditanstalt für Wiederaufbau) was established in 2001 and is the most important state programme to support reconstruction in Germany

A four storey panel building established in 1960 in Lübbenau/Spreewald was reconstructed to become barrier free during

the InoFin project. Four flats for handicapped were introduced. The layout of flats was adapted. A grant scale entrance was introduced. Based on an investment of 1.2 M€ which was energy related at 18% energy consumption could be reduced from 135 to 77 kWh per square metre. Final rent to pay the investment was achieved at 4.65 € per sqm due to KfW loan at lower interest rate. An additional grant of Land Brandenburg to add a lift could be gained. 56% own equity required a KfW loan of 0,22 M€ (building recovery) at 2.65% interest rate and 2.3% repayment (30 years) and an additional KfW standard loan of 0.35 M€ at 3.65% interest rate and 1.95% repayment (30 years). Former monthly rent of 3.14 € per sqm was lifted up by 1.2 €. Monthly heating costs were reduced by 0.3 € per sqm.

Read more at:

http://www.kfw.de/DE_Home/Research/Sonderthem68/CO2-Gebaeudesanierungsprogramm.jsp

5.3 Loan guarantee

Partial risk guarantees provides collateral from external partners for projects that might not otherwise be eligible for financing. This typically guarantee part of the debt servicing payments from EE projects to selected lenders or other investors in the projects, such as commercial bank lenders.

Partial Risk Guarantee:

Provision of collateral from external partners for part of the debt

Partial risk guarantees could be provided for specific time periods or exposure levels. For example a certain part of a credit line could be guaranteed to the lender, in the case of default by the borrower. Partial credit guarantees could act to extend the loan repayment period and decrease the interest level, thus improving a project's cash flows and the financial viability of the project. Another benefit of the guarantee could be to increase debt-to-equity ratios, further enhancing returns to developers.

Precedents exist for this targeted type of financial mechanism in the activities of the IFIs. Also the system applied in the Czech Republic using state-owned guarantee bank for partial risk guarantee has proved to be very efficient to promote an involvement of commercial bank in financing rehabilitation of housing.

Example: Bank guarantee for loan granted by the State fund of housing development for renovation of housing stock.

This scheme - State Support Programme for the Housing Stock Renewal through the Granting of Bank Guarantees for Loans - represents a very simple and relative successful attempt of the Government of the Slovak republic to support refurbishment of residential buildings directly by their owners.

Granting of bank guarantees for loans enabled wider utilization of bank resources in financing of housing stock reconstructions and thus started up a faster renewal than it could be in case of using only public resources or resources of buildings owners.

Read more at:

<http://www.szrb.sk/en/Default.aspx?CatID=156>



Another risk exposed to EE projects is high transaction costs for project development and due diligence work. These are relatively high in smaller projects compared to conventional projects, as they are not direct proportional in relation to the project size. Consequently, project development costs – including financing, legal and engineering fees, consultants, and permitting costs – have a proportionately higher impact on the costs of EE projects.

These costs can be reduced by various support measures to project development or establishment of funds or global loan facilities pooling many projects into one portfolio, thereby increasing the credit strength of the overall portfolio and possibly reducing the interest rate.

5.4 Revolving Fund

One main barrier for investments in energy efficiency projects is their long repayment period. Without public-sector intervention, this usually leads to no availability of funding at all, or loans at increased interest rates, making energy retrofitting unattractive. To overcome this barrier, the establishment of revolving funds is a promising option. A revolving fund is a self-sustaining financing scheme that mainly requires a one-time initial investment.

Revolving funds only support specific activities that are clearly defined by the investors and owners of the fund. With regard to funding for energy efficiency, a revolving fund accumulates savings from energy retrofitting projects for regenerating income for financing of additional projects. If managed properly, the operation of the funds accumulates adequate savings over time, thereby sustaining future financing.

In the area of energy efficiency, a revolving fund could perform subsequent functions:

- Combine public-sector grants for building and adequate financing structure for energy efficiency funding,
- Provision of loan guarantees to cover the default risks related to energy efficiency investments,
- Provision of private sector loans in an adequate size.

In order to reap the maximum benefits from the savings obtained through investments of the revolving fund, an adequate and systematic metering and monitoring of energy savings is required. For achieving this task, all relevant energy-consuming entities should be equipped with metering devices.

Revolving funds can be applied on different political levels, i.e. national, regional or local. At the local level, a municipality can establish its own energy efficiency revolving fund, or apply to participate in an existing one being owned by a variety of entities such as private companies, non-profit organizations or governmental bodies.

The advantage of revolving funds is that they do not depend fully on external investors or on municipalities' credit rating. If they are operated effectively, revolving fund can contribute to a permanent financing structure for energy efficiency investments, which is separate from political influence.

Typical disadvantages for using revolving funds in energy efficiency are that they require substantial upfront investment and also might be cumbersome and expensive to administer. Further legislative and institutional barrier may prevent municipalities from making benefit of the gained savings.

Example: Energy Saving/Revolving Fund in the Czech Republic

An example of a revolving fund is the Phare ESF in Czech Republic in which the loans are composed of a mix of 33% Phare ESF resources and 67% bank's own resources. The included 33% Phare money requires no guarantee and is to be paid back interest-free.

Read more at:

www.mpo.cz/zprava12750.html

5.5 Structural funds, including JESSICA and JASPERS instruments

European regional policy is aimed at reducing the gap between the development levels of the various regions by helping to finance concrete projects for regions, towns and their inhabitants. This is to foster growth and competitiveness in conjunction with exchanging ideas and best practices.

The overall objectives of the Structural Funds are set at an EU level in form of Community Strategic Guidelines, which Member States and regions then transform into national priorities.

The present period of Structural Funds cover the period 2007-13, and cover most regions in New Member States.

The Community Strategic Guidelines (CSG) contains the principles and priorities of cohesion policy and suggests ways for the adequate spending of the aid programmes due to these priorities:

- Improving the attractiveness of Member States, regions and cities by improving accessibility, ensuring adequate quality and level of services, and preserving their environmental potential;
- Encouraging innovation, entrepreneurship and the growth of the knowledge economy by research and innovation capacities, including new information and communication technologies; and

- Creating more and better jobs by attracting more people into employment entrepreneurial activity, improving adaptability of workers and enterprises and increasing investment in human capital.

Based on the CSG each Member State prepares a **National Strategic Reference Framework** (NSRF). This document defines the strategy chosen by the Member State and proposes a list of operational programmes that it aims to implement. It is thus much up to the priorities of each Member State to which extent support to energy retrofitting of social housing is provided.

Support under Structural Funds is mostly given in form of grants² to projects that fulfil the given criteria of the NSRF and the specific underlying measure, and is either administered by central authorities or regional/local authorities.

Information on the specific conditions for obtaining grants and the associated application procedures is to be sought by the relevant programme administrators, cf. links given below.

Links to further reading:

http://ec.europa.eu/regional_policy

5.5.1 Financial instrument related to structural funds: JASPERS and JESSICA

In order to fulfil the EC's policy goals, the European Commission has taken initiative to put in place instruments in order to increase the impact of Structural Fund aid in the field of sustainable energy.

A main intention is to improve the interaction of the European Commission, the European Investment Bank and other International Financial Institutions on financial engineering

Some overall objectives are:

- Providing additional loan resources for business formation and development in the regions of the EU;
- Contributing financial and managerial expertise from specialist institutions such as the EIB Group and other International Financial Institutions;
- Creating strong incentives for successful implementation by beneficiaries by combining grants with loans;
- Ensuring long-term sustainability through the revolving character of the European Regional Development Fund's (ERDF) contribution to financial engineering actions;

Of relevance to social housing are the JASPERS and JESSICA programmes.

² E.g. enabling to cover 50-75% of the investment

JASPERS

JASPERS (Joint Assistance in Supporting Projects in European Regions) is a partnership between the Commission, the European Investment Bank and the European Bank for Reconstruction and Development. It aims to improve the preparation of major projects to be co-financed by the Cohesion Fund and the European Regional Development Fund (ERDF), in particular in the new Member States. It foresees using the technical and financial expertise of the banks to strengthen the capacity of national and regional authorities, helping them to deliver high-quality project proposals, which will make efficient use of EU funds and mobilise additional sources of funding.

JASPERS support the following type of projects:

- Trans-European networks (TENs)
- The transport sector outside of TENs, including rail, river and sea transport
- Inter-modal transport systems and their interoperability
- Management of road and air traffic
- Clean urban and public transport
- The environment, including energy efficiency and renewable energy
- Private public partnerships

However, as the focus is on major infrastructure projects, JASPERS will only be relevant for large social housing investments; e.g. in form of bundling of several building renovation projects.

JESSICA

JESSICA (Joint European Support for Sustainable Investment in City Areas) is a joint initiative of the EU Commission, the European Investment Bank and the Council of Europe Development Bank. The parties involved, already experienced in the field of lending for urban development and renewal, as well for social housing, have agreed to work jointly in the framework of the new ERDF programmes.

The aim is to combine the grants under the programmes for urban development and renewal, or social housing where appropriate, with the loans and the expertise of the Banks for urban development and renewal, including social housing. The Banks have also committed themselves to a more streamlined approach to lending in this field of urban development, making it more user-friendly for end-users.³

Since projects will not be supported through grants, programme contributions to urban development funds will be revolving and help to enhance the sustainability of the investment effort. The programme contributions will be used to finance

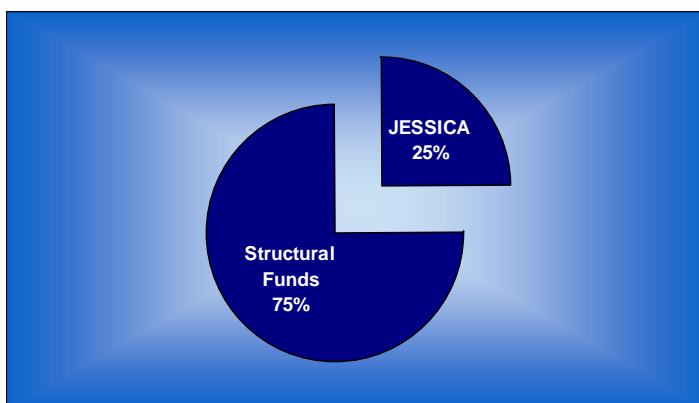
3

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/693&format=HTML&aged=0&language=EN&guiLanguage=fr>

loans provided by the urban development funds to the final beneficiaries, backed by guarantee schemes established by the funds and the participating banks themselves. No State guarantee for these loans is involved; hence they would not aggravate public finance and debt.

JESSICA will work in direct relationship with Urban Development Funds. It would be possible for a given project to be supported partly by the non-grant urban development funds, and partly by public grants (including from operational programmes). Other private banks or investors may also participate. Project promoters could be public, municipal or private sector enterprises, or joint enterprises involving these actors in any possible combination between them. The funds will monitor implementation of projects by final beneficiaries. They will report to the managing authorities on their activities (selection of projects, implementation by final beneficiaries).

JESSICA can be mixed with Structural Funds and provide loan, equity or guarantees, as illustrated in the figure below:



Among the potential advantages of JESSICA can be mentioned:

- Recycling of funds: as long as JESSICA funds have been invested in eligible project expenditure before the expiry date of the Structural Fund programming period, then any returns/receipts generated from that investment can be either retained by the Urban Development Funds or returned to Managing Authorities for reinvestment in new urban regeneration projects. There is therefore no need to repay the investment returns/receipts to the EU Commission. For those Member States facing a prospect of reduced EU grant funding in the next programming period, JESSICA offers the opportunity to create a lasting legacy for the current funds.
- Flexibility: the principles of JESSICA potentially provide a more flexible approach, both in terms of broader eligibility of expenditures and in the use of JESSICA funds by way of either equity, debt or guarantee investment.
- Creativity: JESSICA can be used in urban areas of market failure/weakness and therefore complement other initiatives or sources of

funding that may already exist in the Member State. Involvement of the private sector, however, will still need to take account of “State Aid” rules.”

The disadvantage or hurdle is to manage the implications of putting such instrument into place in addition to all the other procedures associated with Structural Fund aid. However, it must be expected that when first practical experience with JESSICA is gained and turns successful and the administrators get familiar with this, this may lead to wider scale adoption of the instrument.

Example: Jessica instrument in Polish regions

Since Poland is divided into 16 regions and there is no sectoral programme aimed to restructuring of urban areas, the regional authorities are only decision-maker for utilisation scheme of funds allocated in Regional Operational Programmes (RPO). During negotiations of the RPO`s with EC, there were putted efforts by Polish Government for making regional authorities aware of the existence of the JESSICA scheme. In parallel, the European Investment Bank and Bank of European Council provided information about rules and advantages of utilisation of JESSICA scheme. Currently four large Polish regions (Masovia, Western Pomerania, Lower Silesia and Wielkopolska) consider using the JESSICA scheme with respect to the activities related to urban development. However, the legal study, which was performed in September 2008, indicated obstacles in Polish Law related to spending of Structural Funds under JESSICA scheme and the Polish Government made aware of these obstacles.

The JESSICA instrument would be very useful for Polish municipalities, which have identified the so called crisis urban areas already, since the projects to be financed under JESSICA scheme should be located in such areas. There are around 100 local urban development plans developed in Poland, mostly by large cities. Elimination of legal barriers by Polish government in conjunction with political willingness of regional authorities may establish foundation for further development of JESSICA schemes in Poland.

Links to further reading

www.jaspers.europa.eu

http://ec.europa.eu/regional_policy/funds/2007/jjj/jessica_en.htm

5.6 International Financing Institutions**5.6.1 European Investment Bank**

The European Investment Bank (EIB) and the **Council of Europe Development Bank (CEB)** can contribute to financing social housing. Within the EU and in the accession countries, projects considered for financing by the EIB, among other objectives, must contribute to “strengthening economic and social cohesion”, “human capital formation” or “preserving the environment and improving the quality of life”. Recently the EIB has been more involved in housing renovation in the context of urban renewal, but it considers a wider opening to social housing finance in general, mainly using the argument of social cohesion.

CEB, the Council of Europe Development Bank, is the social development bank in Europe.

The overall objectives of EIB are as follows:

- Development of the European Union's less-favoured regions;
- Modernisation of businesses and creation of new activities which cannot be entirely covered by national funding resources;
- Aid for investment in infrastructures of Community interest which, as a result of their scope or nature, cannot be funded by one Member State alone.

Major incentives of the EIB concerns the two initiatives described above:

- **JASPERS** (Joint Assistance to Support Projects in European RegionS) is a major joint policy initiative of the EIB, European Commission (Regional Policy Directorate-General – DG Regio) and the European Bank for Reconstruction and Development (EBRD).
- **JESSICA** (Joint European Support for Sustainable Investment in City Areas) is launched by the European Commission in cooperation with the EIB and the CEB, as an initiative for sustainable urban development.

<http://eib.europa.eu/>

<http://europa.eu/scadplus/leg/en/lvb/g24221.htm>

5.6.2 European Bank for Reconstruction and Development - EBRD

The European Bank for Reconstruction and Development/EBRD was founded in 1991 and is involved in investments to help build market economies and democracies in countries from central Europe to central Asia.

In recent years the EBRD has expanded its activities in sustainable energy and for that reason established an Energy Efficiency Team. Supporting energy retrofitting of buildings, including social housing in NMS, is among the priorities. These efforts are combined with supporting the development of sustainable mechanisms using local banks to provide financing to smaller projects; either in the form of dedicated credit lines or risk sharing.

As part of this EBRD has been working on putting in place schemes for undertaking energy saving measures in the residential sector in cooperation with local banks. Below is an example of such credit line scheme from Bulgaria.

Example: EBRD Residential Energy Efficiency Credit Line in Bulgaria

The Residential Energy Efficiency Credit Line/REECL is a scheme designed for building house owners in Bulgaria.

The scheme offers the house owners an opportunity to apply for financing of energy saving measures based on given criteria, where the financing offered is a mix of grant and loan.

According to the InoFin team REECL implies a straightforward set-up and easy to use approach. However, one problem observed relates to the individual household approach, leading to partial implementation of saving measures (in the single flat) and inadequate energy performance of the entire building.

www.reecl.org/indexen.php

Example: EBRD credit line in Slovakia – SLOVSEFF

The European Bank for Reconstruction and Development (EBRD) in cooperation with the Ministry of Economy has launched the Slovak Energy Efficiency and Renewable Energy Finance Facility (SLOVSEFF).

Loans between EUR 20,000 and EUR 2,000,000, as well as grants - 20% of loan amount for housing associations and free technical assistance was available through local banks.

Upon successful implementation and verification of completion of every sub-project, the Sub-borrowers were eligible to receive an incentive payment calculated as a percentage of the loan amount. The minimum level of energy savings to be achieved after the investment should be 15%.

This credit line was very successful and this approach seems to be good driver for refurbishment process of apartment buildings in Slovakia.

<http://www.slovseff.eu>

5.7 Carbon Financing Schemes

Carbon financing following the flexible mechanisms agreed under the international treaties for measures against climate change can be used in developing financing schemes for energy retrofitting in the social housing sectors. Below is a general description of the mechanisms as well as examples on how they can be used.

There are three relevant climate financing options that can be used for energy retrofitting in residential sectors in Eastern Europe. These are:

- Joint Implementation,
- Emission Trading combined with a Green Investment Scheme and
- EU Emission Allowance Trading for EU member countries.

Joint Implementation

Joint Implementation projects are generating Emission Reduction Units that can be traded between states or be imported into the European Emission Trading Scheme. Only very few JI and CDM household Demand side projects have been developed illustrating that the sector is complex and that some crucial methodology questions not have been settled yet.

The Programmatic approach introduces an opportunity to develop a scheme suitable for small-scale investments. The challenges for developing JI projects on energy retrofitting of social housing sector are to define projects that:

- Are simple and replicable so that a stringent methodology can be developed
- Have a clear-cut baseline that constitute the most likely future development without the project
- Can easily be monitored
- Constitute enough CO₂ reductions so that transaction costs are not prohibitive
- Are in areas where other financing sources can be utilised
- Are supported by residents and other key stakeholders.

A JI system can be set up as follows for large scale implementation:

A) Small-Scale JI projects

A system/support centre is established to support owners and/or owner associations of social houses to develop small-scale JI projects and provide further financial means through framework contracts with commercial banks on the basis of the estimated cash flow in the system (and soft loans/state loans if achievable).

An owner association contacts the support centre and are eligible for a small-scale JI project as there are meters on the energy consumption for the building(s) and their estimated annual energy savings will be below 15 GWh.

The association develops a JI project on the basis of an energy audit and decision on the investments to be made. The project is sent to the Government for approval and an Independent Entity for Determination and the ERUs sold.

The financing are then finalised and if possible with an upfront payment for the ERUs and the project is implemented.

The annual monitoring and verification trigger the generation of the sold ERUs for delivery and an income to the association.

B) Programmatic JI

A Thermal Rehabilitation Programme is defined by the government that gives clear incentives and financing for energy retrofitting of residential buildings.

Financial means are allocated from the national budget and additional financial means are found through either EU structural funds, soft loans or international commercial loans.

The TRP is registered at UNFCCC as a Programmatic JI project

Projects are implemented according to the programme.

ERUs are generated according to the annual monitoring and verification of activities. The ERUs can be sold to states or imported into EU ETS at higher prices. The revenue can either be put back into the programme or sent to the residents/owners of the buildings to reduce their share of the investments.

C) The district heating company or an ESCO develop a project

The DH company or an ESCO define a JI project on specified locations and with a business plan including financing. Agreements are made with the owners of the locations that the payment of the planned investments in energy saving measures are paid over the energy bill so that the savings will only show up in the bill after the investments have been paid.

The project is sent to the government for approval and to an independent Entity for determination before it is registered and the ERUs are sold and form part of the financing package.

The project is implemented and the ERUs are generated for delivery to the buyer according to the achieved CO₂ reductions calculated by the monitoring team and independently verified.

The Membership of the European Union has led to low activity in terms of Joint Implementation in New Member States and thus there are not good prospects for realising the Programmatic approach for the social housing sector.

Green Investment Schemes

Emission Trading is made with Assigned Amount Units/AAUs⁴ that only can be traded amongst States. So far States have been reluctant to buy AAUs, as they fear that it will harm their environmental integrity to buy 'hot air'.

However, the environmental integrity can be achieved if a system is set up where the revenue from the sale of AAUs is used in a Green Investment Scheme; e.g. they are linked with real measures. Such a system will not be subject to any international procedural requirements other than stated in the agreement with the buyer of the AAUs.

⁴ The Assigned Amount is defined on basis of the national emissions in the baseline year 1990 according to the international treaties

A GIS system can be set up as follows: EBRD or another large political/institutional investor makes an agreement with e.g. Bulgaria to buy 2 million AAUs, provided that Bulgaria will put the revenue from the sale in a Green Investments Scheme in cooperation with EBRD that can save at least 2 million tonnes of CO₂ over the next 20 years.

The Fund that is established is then also attracting other financial sources with a guarantee in the revenue from the sale of AAUs.

The fund is now developing standardised energy retrofitting projects in residential buildings and is promoting and issuing loans to these projects against only limited guarantees. Energy audits are made in order to ensure eligibility to the scheme while quality audits of the work performed forms the basis for an estimation of the energy savings and thus CO₂ reductions over the lifetime of the investments (or e.g. 20-30 years- whatever is less). Random samples are taken over the years to verify the assumptions of CO₂ savings.

Higher interest rates and low (if any) grant shares can make the system a revolving fund⁵.

Emission Trading Scheme

Industrial installations like e.g. district heating boilers or CHP plants in EU with a capacity above 20 MW that are using fossil fuels are included in the EU Emission Trading Scheme and have thus been allocated Emission Allowance Units/EAs⁶ for the emissions of CO₂ under National Allocation Plans. These National Allocation Plans give both the principles for the allocations and the actual allocation to the installations in the allocation period – e.g. 2005-2007 or 2008-2012.

This means that a district heating company under the Emission Trading Scheme can sell EAs if the installation emits less than the given allocation. E.g. an energy efficiency measure in the district heating system will result in both energy savings and freed EAs that can be sold on the market.

The EU ETS model can be described as follows:

The district heating company decides to (co-)finance energy retrofitting measures at its consumers. The resulting energy savings at the end users and better control and regulation gives the district heating company the opportunity to make investments in more efficient distribution networks that could otherwise not have been so efficient.

The district heating company can now calculate the expected total energy savings and sell the annually freed EAs on the market for the rest of the allocation period. Depending on the allocation criteria's the energy savings may also have an EA value in for succeeding allocation periods.

⁵ See separate description of the revolving fund concept in Section 7.4

⁶ EU Allowance Unit is the unit of ton CO₂ that are traded in the European Emission Trading Scheme.

Which option to choose

The table below summarise the two most promising options for a financing scheme related to carbon financing. The options are different in their nature and also have different scopes that make them relevant from different perspectives.

Perspective/Active Developer	Mechanism	Comments
Government	Green Investment Scheme	<p>The Green Investment Scheme is suitable for governmental implementation in thermal rehabilitation programmes.</p> <p>The concept implies that selling of emission rights between States that would otherwise be 'hot air' instead is associated with real energy saving measures and thus ensuring the environmental integrity. Such a system will not be subject to any international procedural requirements other than stated in the agreement with the buyer of the AAUs.</p>
District Heating Company in cooperation with Housing Association	EU Emission Trading Scheme	<p>For installations included in the EU ETS it is possible to sell EUAs at any time it is considered that there is a surplus. Any energy efficiency measures undertaken can thus result in the sale of EAUs without any further legal or administrative actions – unless it trigger the reduction of issuance of Allowances to the installation. Thus it represents a promising option for district heating companies that would engage in energy retrofitting in the housing sector and taking advantage of the gained CO₂ savings.</p>

5.8 National Bank Sector

One problem about financing energy retrofitting of the social housing sector is that financiers in the national bank sectors in general lack knowledge about this kind of financing. This has an implication on the risk assessment in the way that the interest level of loans tends to be relatively high and thus providing a barrier for investments.

Experience shows that when the financiers get more acquainted with this type of projects, they get more confident and can provide more favourable loans. E.g. it can be observed in relation to the Thermo-Renovation Programme in Poland that the commercial banks' involvement in this programme has raised their interest and willingness to provide loans⁷

Another example is from the Slovak Republic, where the private bank Istrobanka together with Baunit, a provider of materials for building insulation, has developed a financing scheme that has led to the renovation and modernisation of flats in the social housing sector.

Example: Financing scheme developed by Slovak bank – Obnova Plus

Obnova Plus (RENOVATION Plus) is a programme for renovation and modernisation of flat houses, prepared by Slovak bank ISTROBANKA in cooperation with BAUNIT (local leader in a field of buildings thermal isolation).

The programme has been developed since 2005 and is designed specifically for thermal insulation of dwelling houses in Slovakia.

A main asset of the scheme is that it provides a favourable interest rate, fixed or variable; long loan maturity up to 20 years, no real property needed as security and provision of free advisory to the clients. Financial scheme tailored for thermal-insulation refurbishment of dwelling houses as a representative of typical housing in Slovak towns has a big potential in Slovakia.

<http://english.istrobanka.sk/products&services/produkt.cgi?m=3&p=obnova&g=3-3uvery.html>

5.9 Initiatives of Building Owners

The owner of the social housing stock is by nature a key actor in making the energy retrofitting process happens. The simplest way is where the housing association or other actor serving project owner decide and implement the energy saving measures by own initiative and via existing financial sources.

The InoFin studies have shown that the building owners in social housing in New Member States are generally facing severe barriers in turning project ideas into practice or even lack the awareness of the potential benefits that energy saving measures can bring about.

⁷ See also description in Section 6.1 Public grant programme

Nevertheless and fortunately, there are a growing number of examples where the building owners in the social housing sector are able to carry through building renovations by own initiative and via existing channels.

Below is an example of such initiative by a housing association in Latvia (taken from IEE project EI-Education)

Example: Housing Association in Latvia

In summer 2001 the Cooperative in question decided to take a loan for energy efficiency measures and reconstruction of the building. The main reasons for taking the loan were:

- To increase the thermal comfort in the building;
- To decrease the costs for heat;
- To improve the appearance of the building.



The loan in amount of 63 000 LVL (approx. 100 000 EUR) was taken in Latvian Mortgage bank for 12 years with the annual interest rate of 10% (in 2002 the interest rate was decreased to 7.5%). The loan is paid back from the payments for maintenance, which was increased to 0.30 LVL/m²month (0.50 EUR/m²month).

See more via this link

http://ei-education.aarch.dk/fileadmin/filer/EI-Education/Best_practice_examples/Bulgaria/24-11-06/Kuldiga_LV.doc

5.10 Energy performance contracting

Energy performance contracting (also called energy saving contracting) deals with the optimisation across trades of automation installations in buildings and building operation by a contractor in the form of a co-operation based on partnership. The main object of agreement between the contractor and the client is the implementation of investments to modernize and refurbish buildings in order to realize energy savings. The aim is to achieve the guaranteed objectives in particular with regard to economic efficiency, energy saving, net asset value of the buildings and building conditioning. The main distinguishing feature is the financing of the investments via the guaranteed cost savings achieved through improved energy efficiency within the terms of the contract. Performance components of the contractor are financing, planning and installation of components for energy generation, distribution and usage as well as their operation and maintenance. Integration and training of the users are usually part of performance contracting. The remuneration for services corresponds to the savings achieved.

The differences between both types of contracting are illustrated in the following table.

Table 5-1: Energy Performance Contracting Procedures

Energy Performance Contracting	
Application	Rationalisation investments in the entire field of energy utilisation (provision and demand)
Contracting service	Financing, planning, installation and support of specific energy saving measures
Contracting rate (financing)	User fee as contractor's remuneration for the energy and operating cost savings achieved
Advantages	Know-how advantages of the contractor lead to high and guaranteed energy cost savings over the entire contract period and possibly to attractive bonus provisions with additional financial incentives
Features or contract principles	Subject matter of contract: Guaranteed energy and operating cost savings Risk distribution Duration Allocation of the savings achieved Definition of an energy costs baseline

Performance contracting is a third-party financing model, i.e. an external company pre-finances the investments and amortises them through its participation in the energy supply cost savings. Typically, performance contracting is applied by public administrations. The investments for this type of contracting are financed out of the budget estimate for operating costs which due to the difficult financial situation of public authorities is usually not subject to the general reduction requirements. All other public financing models require that the relevant budget estimate be increased or new budget items be established.

In so far, performance contracting is not a typical alternative form of financing such as payment plan agreements or leasing, as **the performance features of performance contracting always include the business risk**. In other words, in the case of leasing or payment plan agreements the third party's periodic remuneration is determined beforehand for the duration of the contract. In the case of performance contracting, however, the remuneration depends on the actual achievement of the contractually defined energy cost savings.

Risk distribution, which is a key matter of the guarantee and, above all, the advantage or risk-free pre-financing by the contractor are thus decisive features of performance contracting. Contract principles such as duration, allocation of the savings and determination of the energy costs baseline determine the handling of the contractual relationship as regards commercial matters.

The advantages of involving ESCOs can be summarised as:

- Reduced risks to the building owners – the ESCO takes on the risk of not achieving the prescribed savings
- Turn-key services – the ESCO provides all required services
- Project financing can be 'off balance sheet' and not affect debt load
- State-of-the-art products and services are normally used
- Additional efficiency improvements can be paid for out of the energy savings

Energy performance contracting in the residential sector

The Czech Republic has been able to foster a thriving ESCO industry with numerous players competing for business, although ESCOs have encountered problems along the way. Also in Slovak Republic, Poland and Bulgaria the ESCO market is developing.

However to date ESCOs have focused mainly on commercial, office and institutional buildings such as hospitals and schools. These types of projects are sufficiently large scale for ESCOs, they have simplified approval processes, and are easy to replicate. On the contrary the residential market has been viewed as high risk, diffuse and difficult to manage.

Some typical barriers in relation to energy performance in the residential sector are:

- ESCO's have difficulties in controlling occupant behaviour (e.g. heat levels, window openings), which will reduce the effectiveness of upgrades, particularly in a rental context where most tenants have no financial incentive to conserve.
- The current ownership structures and the complexity of decision-making authority complicate the ESCO contract.
- There is a general lack of trust towards third party intervention
- The residential sector projects are too small in size
- As ESCOs prefer short-term payback period they usually prefer individually measures to comprehensive approach to rehabilitation of housing (e.g. heating systems versus thermal insulation and window replacement).

Thus the potential ESCO intervention within the residential sector is still considered an immature market. This may depend on further development of ESCO concepts tailored to the residential market and initiation of demonstration projects in this regard.

Example of Third Party Energy Services in the Latvian Context

In this example the “General meeting” of the apartment owners authorizes a building management company to take all necessary actions related to energy efficiency measures in the building including tendering and contracting for energy audits, development of technical project documentation, construction works, or accepting financial offers such as commercial loans or state and / or municipal co-financing. This means that the building manager prepares and signs all necessary documents on the basis of the apartment owners issued delegation of authority, but does not have any financial obligations for loan redemption, since he/she only acts as an intermediary, not as a borrower. That implies that ongoing financing redemption period is not an obstacle in case if the general meeting of the apartment owners decides to change the building manager since the apartment owners are the borrowers themselves. Loan payment for energy efficiency works is included in the monthly costs for management.

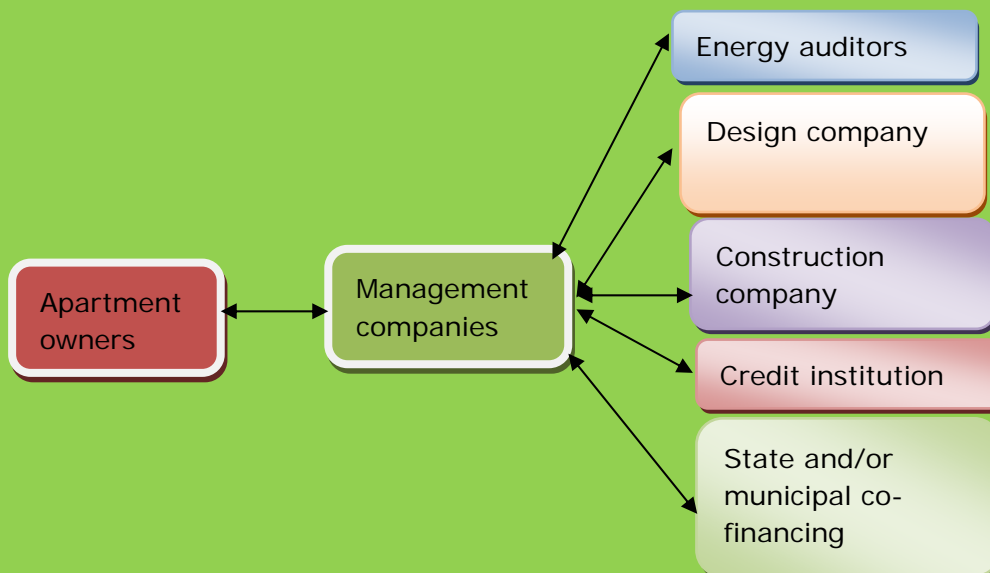


Figure: Operating principle of the financing scheme where building managers act as intermediaries

The main advantages of the financial scheme are:

- Building managers have the knowledge and experience in management of common ownership, in performing various building works and their supervision, and performing and evaluation of tenders for various services and works, as well as have the resources that are necessary for these activities;
- Residents and the manager are familiar to each other and collaboration is formed based on the mutual trust that has been developed for many years;
- The building manager knows most of the apartment owners, so it is more possible to convince them about the necessity and effectiveness of the energy-efficient project implementation.

Lack of these schemes appears in those cases when the apartment owners and the building manager have developed strong distrust during many years. Then it is very hard or even impossible to implement the developed scheme on practice.

Only a few energy-efficiency projects have been implemented in Latvia according to this scheme. One of these projects has been implemented in Daugavpils, where the building manager “Daugavpils housing and public utilities holding company” as an intermediary implemented all activities related to energy efficiency measures.

Example: Heating Company as an investor in Latvia

In order to develop a successful and sustainable heat supply system a complex approach is needed including considering heat energy end-users. Innovative financing scheme offers a company an opportunity to invest in end-user energy efficiency improvement being involved as a financial investor, and at the same time to adjust the whole heating system. This financing scheme might be attractive for an energy supply company due to several reasons:

- in case of heat tariff increase, customers are able to pay the bills for heating;
- customers are satisfied with the services provided;
- the company develops implementing innovative projects;
- it is possible to provide the required indoor temperature for the customers;
- it is possible to develop the entire system.

The Financing scheme is shown in the figure below:

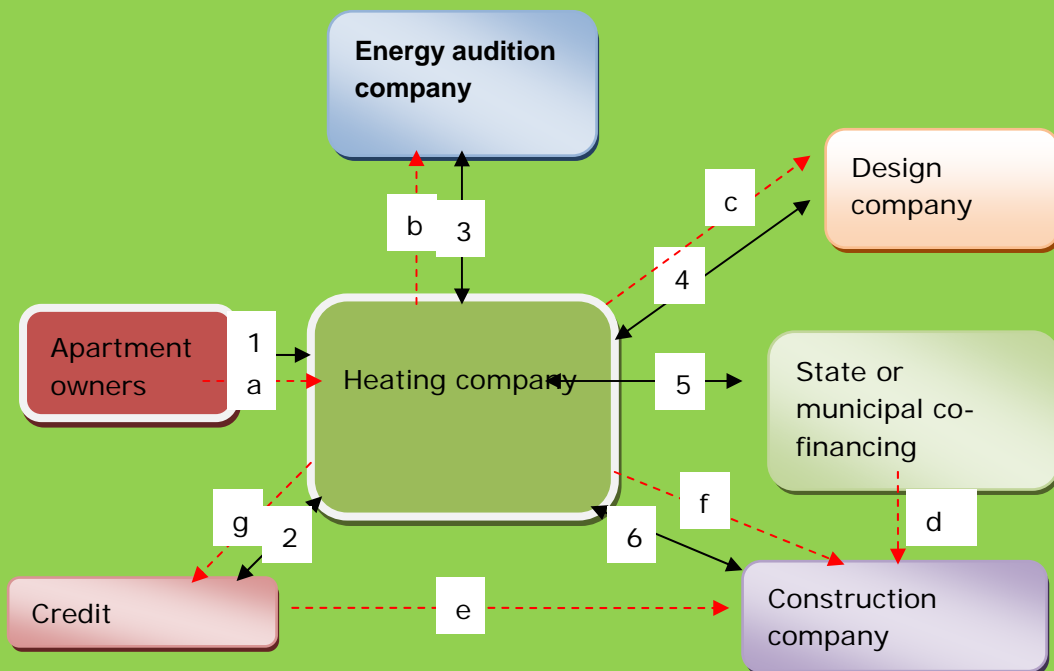


Figure: The financing scheme for energy efficiency improvement in buildings, where a heating company acts as a financing provider and project implementator (solid line arrows indicate contractual relations, dashed line arrows indicate cash flows)

The Heating Company that provides heat to the building signs a contract with the Building Owners "General Meeting" on implementation of energy efficiency measures (1). Unlike in the situation described in the previous chapter, where building manager is just an intermediary, the heat supply company itself receives a loan and/or state or local government co-financing

(2.5), or finances the project from its own funds (f). Available financial resources cover an energy audit (3, b) development of a technical project (4, c), and energy efficiency measure implementation (6, e, d). The Heat supply company receives monthly payments from the apartment owners (a), and uses them for making the payments for the loan (g). Heat supply company contracts an energy audition company for after-implementation energy consumption monitoring. This funding scheme is similar to energy services scheme described in Chapter 4.

This financing scheme was e.g applied for a building in Roja located at 13 Kosmonautu street (Riga), where the heat supply company is planning to introduce such a financing scheme with the support of local municipality. In 2006, Roja heat supply company made a detailed analysis of energy consumption for multi-apartment buildings that are connected to the centralized heating system and identified the specific heat consumption for each building. Buildings with the highest specific consumption were selected for energy audits in year 2007, which were fully financed by Roja municipality. The information obtained during energy audits was used to carry out a detailed financial analysis using discounted cash flow method. This allowed comparing situations when energy efficiency measures were implemented in different periods of time.

Different possible options for energy efficiency measures were analysed in the financial calculations. The options were chosen on the basis of the energy audit reports.

5.11 Suggestions for further reading

CECODHAS

THE EUROPEAN LIAISON COMMITTEE FOR SOCIAL HOUSING/CECODHAS, established in 1988, is the European network for the promotion of the right to decent housing for all. In our membership we have 46 regional and national federations which together represent over 39.000 public, voluntary and cooperative social housing enterprises in 19 countries. Together they provide over 21 million homes across the European Union. CECODHAS is funded by membership fees.

The objectives are to:

- reinforce the European social model and promote the values, successes and the vital future role of our members within that model;
- promote integrated approaches to sustainable urban development, stressing that the work of social housing providers is the backbone of social cohesion in European cities;
- protect fundamental rights and fight for quality social services, accessible to all.

At the CECODHAS website a lot of information can be found

A session of the website is dedicated to energy efficiency measures in the social housing sector, and a review of projects going on in this field.

www.cecodhas.org/content/blogcategory/43/164

ROSH Project



Guidebook 1

Part I relates to advanced integrated retrofitting solutions and includes good practice examples and tools developed within ROSH. It has been tested in trainings organised for architects, engineering consultants and planners as well as for decision makers in housing associations in the partner regions.

[Download](#) (English version) / Other languages available soon.



Guidebook 2

Part II contains information, planning tools and good practice examples for successful financing concepts on the regulatory frameworks, economic conditions, subsidy schemes and advanced financing schemes. The guidebook is addressed to decision makers in housing companies and local authorities as well as energy agencies, consultants and planners.

http://www.targetgmbh.de/rosh/data/dateien_material/tools%20&%20products/ROSH_guidebook2_en.pdf

6 EU Programmes and Related Projects

6.1 The Intelligent Energy for Europe Programme

The Intelligent Energy for Europe/IEE Programme, under which the InoFin project is supported, is a key initiative for overcoming barriers to sustainable energy. The programme is divided on a number of support areas, including buildings, industry, renewable energy as well as integrated areas for supporting e.g. development of energy services. In its lifetime the IEE programme has fostered more than 400 projects as well as energy agencies to assisting the uptake of sustainable energy practice around Europe.

See more at

http://ec.europa.eu/energy/intelligent/index_en.html



The IEE Programme website offers both an opportunity for funding of projects in the field of sustainable energy (€ 730 million is available in the period 2007-13) as well as material and information based on the activities undertaken.

Two main sources are:

6.1.1 *Intelligent energy library, e-library*

The aim of the e-library is to bring together in one place a range of tools and guidebooks on energy efficiency, renewable energy applications and sustainable mobility. It includes items funded under the IEE Programme and a selection of instruments picked from over 2,500 EU funded projects (under Altener and Save, CIVITAS, Structural and regional funds, LIFE, RTD 2002-2006 and Phare). In addition, tools and guidebooks developed nationally and regionally are included.

The e-library provides a thematic collection and consolidation of existing material in selected programme areas, the e-library helps to eliminate intensive initial project phases and removes the need to redevelop certain tools and guidebooks. It also ensures that information remains accessible beyond the legal duration of project contracts.

Get access to the e-library via

www.iee-library.eu

6.1.2 *Intelligent energy projects database*

The IEE database enables fast access to all projects supported by the IEE programme and is made in an easy to navigate manner

Get access to the e-library via
<http://ieea.erba.hu/ieea>

Below is presented a selection of projects from the database of relevance to energy retrofitting of social housing. Via the above database many more projects and associated materials can be found.

6.1.3 EUROCONTRACT

SUMMARY

Energy efficiency in buildings leads to budgetary savings and contributes to climate protection and the security of energy supply. However, more than 20 percent of economically realizable energy savings remain untapped. This potentially large market could be effectively realised using energy services such as Energy Performance Contracting (EPC). In an EPC project, an Energy Service Company (ESCO) provides its know-how and takes on the performance risk to ensure that adequate measures are implemented; that the stipulated energy savings are achieved. The investment is refinanced through the savings achieved. EUROCONTRACT aims to have more EPC projects implemented in Europe by providing project development standards and implementing pilot projects. At the same time, know how and information on EPC is provided, as is an exchange among market actors. Where EPC has already been established, the model is being further developed, linked to other instruments such as Facility Management, or is expanded in its scope to include comprehensive refurbishing measures.

RESULTS

- Development of manuals on additional models and support: - EPC + White Certification - Quality Standards - Comprehensive Refurbishment & link to Facility Management - Norms /Certification - Financing
- Intensive dialogue with market actors - Building owners - Financial sector - ESCOs
- Capacity building and 'train the trainers'. Model contracts for EPC in the participating countries. Increased awareness, know-how and exchange in the EU on EPC. Over 100 events organised and attended. Over 2,000 participants in these events, among these about 60 are new EPC experts.
- Pilot projects - Over 360 buildings screened - 30 more concrete projects received further support - 17 resulted in concrete EPC projects: implemented or under preparation - About 1 million square meters - Energy cost baseline of almost 10 million Euros annually - Estimated energy savings between 10% and over 25%

LESSONS LEARNT

- EPC has the potential to become a regular choice among building owners for energy efficiency measures. Necessity to bring in the customer view while understanding the ESCO view. Approach of customer orientation and transparency of procedures is crucial. Processes need to be regionally adapted, notwithstanding the fact that they are based on proven successes (e.g. Austria, Germany, and Sweden).
- Standard documents must be made available; these should be organised in a modular system, with standard offers and flexible parts. Requests for comprehensive

refurbishment measures will increase in the future; however, the market seems not to be ready yet. The support for good practice examples and their spreading is essential. There is also a need for provisions on evaluation and monitoring projects, where no harmonised approach is used or currently usable.

- Continuous and more support for project development is needed to work on the information and capacity further, and to keep the momentum gained in the project. The market does not evolve without support in all countries. Suggestions for market transformation are grant programs for project development, promotion of success stories and model documents, training of building owners etc.

KEY FACTS ON THE PROJECT

Key action:	Financial mechanisms and incentives
Status:	Closed
Coordinator:	Kerstin Kallmann Berliner Energieagentur GmbH , Germany E-mail: kallmann@berliner-e-agentur.de Tel: 0049 030 29 33 30 53
Partners:	Agenzia Regionale per l'Energia della Liguria Spa , Italy Motiva Oy (Motiva) , Finland Agence de l'Environnement et de la Maitrise de l'Energie (ADEME) , France Centre for Renewable Energy Sources (CRES) , Greece Grazer Energieagentur Ges.m.b.H. (GEA) , Austria Österreichische Energieagentur (AEA) , Austria Swedish Energy Agency (STEM) , Sweden Mid Wales Energy Agency LTD , United Kingdom Federazione Italiana per l'uso Razionale dell'Energia , Italy Norsk Enok og Energi AS , Norway
Website:	http://www.eurocontract.net
Benefits:	Locally adapted and tested documents for EPC, local knowledgeable partners ready to support further project implementation.
Keywords:	energy services , energy performance contracting , new market development
Duration:	01/01/2005 - 31/12/2007
Budget:	EUR 2 302 042 (EU contribution: 50%)
Contract number:	EIHOR/EIE/04/211/2004

6.1.4 PromoSCene

Promoting the use of Structural Funds and Cohesion Funds for energy investments in New Member States and Candidate Countries (PromoSCene)

SUMMARY

Currently, few energy-related projects are financed through Structural and Cohesion Funds (SCF). Managing Authorities often lack awareness, know-how, and access to the energy sector when promoting and managing energy aspects under SCF. PromoSCene supports the Managing Authorities of these funds in 5 target countries: Bulgaria, Cyprus, Czech Republic, Poland and Romania. The Managing Authorities are trained to better promote and manage the energy-related priorities of their Operational Programmes. Aim is to increase the SCF-financed investments in renewable energy and energy efficiency, and ultimately to foster cohesion in the European Union, while at the same time contributing to the Lisbon and Gothenburg goals. The purpose of the PromoSCene project is to make Managing Authorities aware, able, and willing to take into account energy aspects when promoting and managing Structural and Cohesion Funds. During the project period (2007-2009), specific support tools are developed and various information seminars, trainings, and conferences are organised.

RESULTS

- Ultimately, after completion the PromoSCene project must show a significant increase in SCF-financed projects related to energy efficiency and renewable energy. The share of energy-related projects is expected to be 15% of the total budget for SCF over the entire programming period 2007-2013. One-third of this share is expected to be attained at the end of the PromoSCene project (mid-2009).
- PromoSCene uses national seminars and regional conferences to train managing authorities in the 5 target countries (BG, CZ, CY, PL, RO) so that they are aware, able and willing to successfully promote and manage energy-related aspects of their operational programmes. This is made explicit through the signing of Letters of Intent by 75% of the target group.
- PromoSCene gives all participants access to a vast pool of information and experience through a broad European network of experts, creating effective communication channels (national as well as international) between stakeholders in the fields of Structural Funds and energy.
- PromoSCene provides easy access to information regarding SCF programmes and SCF-financed projects related to renewable energy and energy efficiency for the 10 consortium countries, through the development of specific guidelines, a database, a website, and additional publications

KEY FACTS ON THE PROJECT

Key action:	Financial mechanisms and incentives
Status:	Ongoing
Coordinator:	Nicole van Beeck SenterNovem , Netherlands E-mail: n.van.beeck@senternovem.nl Tel: 0031 30 239 3504
Partners:	Gertec GmbH Ingenieurgesellschaft , Germany O.Ö. Energiesparverband (ESV) , Austria Severn Wye Energy Agency Limited (SWEA) , United Kingdom Krajowa Agencja Poszanowania Energii S.A. (KAPE) , Poland Institutul de Studii si Proiectari Energetice , Romania
Website:	http://www.promoscene.eu
Benefits:	Effective communication channels between stakeholders, and sustainable contribution to cohesion policy and the Lisbon Agenda.
Keywords:	
Duration:	01/01/2007 - 31/08/2009
Budget:	EUR 925 084 (EU contribution: 50%)
Contract number:	EIHOR/EIE/06/084/2006

6.1.5 EL-Education

Energy Intelligent Education for Retrofitting of Social Houses (EI-Education)

SUMMARY

Social housing companies, municipalities and other housing stock owners were targeted by an education programme with the aim of helping them carry out energy-intelligent retrofitting. Renovations can lead to potential energy savings of 30%. The programme used mixed learning techniques adapted to the varying circumstances in participant countries. Teaching tools included an Internet platform, a guidebook and e-learning material.

RESULTS

- To inspire social housing companies to practise energy intelligent retrofitting, a guidebook has been compiled. It is based upon 62 best practice examples from 11 countries, showing increases in energy efficiency of at least 30%, and can be downloaded from the website.
- Education programmes for social housing companies were developed in six participating countries.
- National training courses were organized for over 150 representatives from about 90 social housing companies.
- An awareness raising international seminar for Housing Associations in the EU was arranged in collaboration with CECODHAS, the European Liaison Committee for Social housing, gathering 80 participants from 14 countries, representing about 50 social housing organisations and a number of researchers and experts.
- As a result of EI-Education, a project of energy intelligent retrofitting of 250 row houses has already started in Denmark.

LESSONS LEARNT

- There are enormous differences in the organisation of the low income housing in the participating countries
- The housing associations are familiar with many building technologies and will not be interested in training on basic renovation technologies. Their knowledge about building management and legal obligations is quite high. They are also aware of existing support schemes. However, they could be interested in innovative technologies and their practical application as well as information about latest building trends in other parts of Europe
- Working on the web is more relevant than paper versions of the guidebook

KEY FACTS ON THE PROJECT

Key action:	Buildings
Status:	Closed
Coordinator:	Elsebeth Terkelsen

[Aarhus School of Architecture, Department of Supplementary Education](#), Germany

E-mail: elsebeth.terkelsen@aarch.dk

Tel: 0045 89 36 01 57 / mobile 0045 22 68 72

Partners: [Centre scientifique et technique du bâtiment \(CSTB\)](#), France
[Développement, Etudes pour le Logement, la Promotion de l'Habitat, l'Innovation et le Social](#), France
[Boligselskabernes Landsorganisation](#), Denmark
[Cenergia Energy Consultants \(Cenergia\)](#), Denmark
[O.Ö. Energiesparverband \(ESV\)](#), Austria
[Sofia Energy Centre \(SEC\)](#), Bulgaria
[Building and Civil Engineering Institute ZRMK \(BCEI ZRMK\)](#), Slovenia
[Housing Fund of Ljubljana](#), Slovenia
[Energy research Centre of the Netherlands \(ECN\)](#), Netherlands

Website: <http://ei-education.aarch.dk>

Benefits: Significant energy savings in social housing across Europe

Keywords: [Buildings](#)

Duration: 01/01/2006 - 31/12/2007

Budget: EUR 919 465 (EU contribution: 50%)

Contract number: EISAV/EIE/05/050/2005

6.1.6 ROSH

Development and marketing of integrated concepts for energy efficient and sustainable retrofitting of social housing (ROSH)

SUMMARY

This project looks at energy efficiency and sustainable retrofitting in social housing in specific regions in six EU countries. It is based on integrated programmes combining information, training and communication. Guidelines on financing schemes are also being drafted, while demonstration projects serve to evaluate practices. The wider aim is to stimulate the market for these solutions, and increase comfort levels and quality of life for tenants.

RESULTS

- Brochure "Market analysis of Social Housing in the ROSH partner regions" now available in four languages.
- Market analysis of social housing retrofitting needs conducted in four regions and countries based on questionnaires which also investigated existing regulatory frameworks.
- To help spread new technologies, posters on results of thermography and blower doors measurements have been put together in four languages.
- A list of financial partnership schemes has been compiled in an attempt to overcome the lack of available finance.
- A check-list for building managers and owners has been put together to help them

decide if they need to refurbish their multi-family dwellings, again in four languages.

LESSONS LEARNT

- No common definition of the term "Social Housing" in the partner regions
- The need of (innovative) financial schemes was identified as a core task of the project (motivation for investors)
- Existing demand on refurbishment measures in all partner regions

KEY FACTS ON THE PROJECT

Key action:	Buildings
Status:	Closed
Coordinator:	Bodo Grimmig Target GmbH , Germany E-mail: steege@targetgmbh.de Tel: 0049 511 39 47 302
Partners:	AGENZIA TERRITORIALE CASA NOVARA , Italy Agenzia territoriale per la casa della provincia di asti , Italy AMBIENTE ITALIA SRL Istituto di Ricerche , Italy Institut für Bauforschung e.V. , Germany City of Dublin Energy Management Agency Ltd. (CODEMA) , Ireland Arbeitsgemeinschaft Erneuerbare Energie (AEE INTEC) , Austria Grazer Energieagentur Ges.m.b.H. (GEA) , Austria Black Sea Regional Energy Centre (BSREC) , Bulgaria Architektenkammer Niedersachsen , Germany Federcasa - Federazione Italiana per la Casa , Italy Baltycka Agencja Poszanowania Energii SA , Poland
Website:	http://www.rosh-project.eu
Benefits:	Better decision-making in relation social housing retrofitting, leading to energy savings and market development
Keywords:	Buildings
Duration:	01/01/2006 - 30/06/2008
Budget:	EUR 1 330 623 (EU contribution: 50%)
Contract number:	EISAV/EIE/05/140/2005

7 InoFin Consortium Members

The InoFin partners are as follows:

CEBra (project coordinator)
www.cebraz-gmbh.de

Enviros
www.enviros.cz

NAPE
www.nape.pl

Ekodoma
www.ekodoma.lv

Energy Centre Bratislava/ECB
www.ecb.sk

Sofia Energy Centre/SEC
www.sec.bg

ECN
www.ecn.nl

Energy Consulting Network/ECNet
www.ecnetwork.dk

Further information can be found at: www.join-inofin.eu