Intelligent Energy Europe

ClearSupport

Bridging RUE in Building Project and Financing

Project EIE-06-189 ClearSupport
Clearinghouse Facilitation

Paving Way for Better Energy Building Performance
in EU Less Developed Regions

Project Service Facility
PSF

WP 3 Financing Schemes

D 3.1

Lessons learned

Final Version
Status:

06 May 2008

Prepared by

Investitionsbank Schleswig-Holstein

IB

BERLINER Energie AGENTUR

in cooperation with:

and ClearSupport Project Partners

Table of Contents

Figures

Abbreviations

av	average
BGN	Lev, Bulgarian currency
CD	Country Desk
CEEC	Central and Eastern European Countries
CEI	Central European Initiative
CH	Clearing House
DH	District Heating
EE	Energy Efficiency
EER	Energy Efficient Refurbishment
EPC	Energy Performance Contracting
ESCO	Energy Service Company
FI	Financial Institution
HOA	House Owner Association
Lt	Litas
Lv	Leva (Bulgarian currency)
m	million
OP	Operational Programme
RES	Renewable Energy Sources
RUE	Rational Use of Energy
SME	Small and Medium Enterprises
TPF	Third party financing

1 Background and task description

Innovation does not have to be absolutely original; sometimes it is more effective to merge ideas and create a workable solution based on elements that exist but by themselves may not be effective enough. In the first part of this report, we collected available knowledge from previous projects, instruments and concepts with regard to their success for spurring financing small-scale energy efficiency projects in the built environment.

As the basis for financing instruments to be developed for local PSFs in the Clearinghouse Support project, we will focus on issues that are relevant to financing. We do not claim to have looked at every single experience ever made, every idea implemented. We have chosen relevant experience in targeted regions. Accordingly, the following report describes several financing schemes to support RUE measures in buildings. It presents support schemes of mainly three categories:

- National programmes (Poland, Lithuania),
- EU co-funded international projects (Baltic Chain, clearcontract, Commercial Finance for Sustainable Energy Projects, BEEP and BEEN) and
- Cross Country Support Schemes

Starting with a general description of each programme, providing details on targets and audience, each chapter contains information on the budget, mechanisms of support (e.g. loan, etc.) and monitoring requirements. Of special interest is also information on implementation results, specifying barriers of success.

In the second part of the report, we aim to look more closely on the situation to financing small to medium EE measures in buildings in our concrete partner countries. In this context, we want to go further into following country-specific questions:

- Why is the level of building upgrade not higher given the obvious economic potential?
- Which are available financing instruments?
- Are financing instruments available and do they correspond to the needs of the market and clients?
- What are possible adaptations to make financing instruments in respective countries more effective?

In sum, the present document provides for an overview and comparison of existing financing available, commercial as well as subsidised. General conclusions on their effectiveness will be made and a few points for better performance outlined. The evaluation is the basis for the tools that are to be developed for the Project Service Facilities (PSF) in the ClearSupport project.

2 National Lessons Learned

The subsequent section describes two national support programmes for energy efficiency investments and existing experiences with their implementation. One is the “Thermo Modernisation Fund” in Poland, the other the “Apartment Building Modernization Program” of Lithuania.

2.1 “Thermo Modernisation Fund” – Poland

2.1.1 Description of Programme

Figure 1: Fact Sheet “Thermo Modernisation Fund” (PL)

Programme Name	Thermo Modernisation Fund
Programme Host	Bank Gospodarstwa Krajowego (BGK)
Programme Partners	21 commercial banks
Objective	
Audience	Single family houses, multifamily residential buildings, municipal infrastructure (schools, hospitals, etc.), common habitation facilities independent from ownership
Duration	1998-2016
Budget	60 m € (2007)
Homepage	www.bgk.com.pl

Thermo modernisation is one of the most important tools supporting energy efficiency activities. The annual amount of money available is depending on the state budget. The Fund is not a legal entity and is governed by BGK (Bank Gospodarstwa Krajowego). Yearly expenditure from this fund reached € 25 m in 2006, which was not enough to cover all applications. The budget for 2007 is appr. € 70 m. There are 21 commercial banks involved in the system with two of them covering 60% of total financing. The legal reference of this support programme is the “Thermo Modernisation Law” that was launched on 18 December 1998. It makes it possible to obtain a 25% subsidy to the capital of the credit taken by the investor. The owners or administrators of the following buildings are eligible to receive subsidies:

- Single family houses,
- multifamily residential buildings,
- social infrastructure owned by communities: schools, kindergardens, hospitals, hostels and
- common habitation facilities independent on the ownership status.

An Energy audit is required, which has to be prepared in accordance with standards defined by the Ordinance on scope and form of energy audit from 1999 (amended in 2002). The energy audits are to be financed by the investor and are subject of verification by independent consultants chosen by the BGK bank. There is no licence for energy auditors required.

A thermo modernisation premium (subsidy) of 25% of the credit is granted, if - due to investment - the reduction of heat consumption reaches at least 10% in the case of the modernisation of heating system or the reduction amounts to 25%. The credit has to be repaid in the form of energy saving costs. The maximum value of the credit cannot exceed 80% of investment costs. The Simple Payback Time period cannot exceed 10 years.

Figure 2: Evaluation Matrix

Requirements of documentation and processing for user	An energy audit positively verified by external supervisor
Requirements of documentation and processing	Audit > > bottleneck since audit has to made even for standard measures
Experiences with level of subsidy	Credit up to 80% of the investment cost 25% of credit grant
Was/is the program able to cause a relevant effect on refurbishment market?	Yes
Main barriers for (more) success	Annual budget is too low (in 2006 the budget was finished at the end of May) A lack of stringent energy efficiency requirements for implemented measures
Options for further development of the program	No new options announced so far, however the system is under discussion.

2.1.2 Results and Lessons Learned

Since the Fund was launched (in 1999) until August 2007, 9,130 subsidies have been granted for the total amount PLN 498 m (€ 130 m). The value of granted credits amounted to € 524 m. Over 85% of applications have been submitted to multi-family residential buildings, slightly over 7% to public buildings, and 5% to single family buildings. The remaining 3% of applications were for the modernisation of heating network, single and other heat sources and common habitation facilities. In the first period there was only low interest for thermo modernisation investments (due to high interest rates of credits and more stringent eligibility conditions for obtaining the subsidy – the subsidy used to be granted after 75% of the credit had been paid off). Due to specific rules of defining the scope of the thermo modernization project, only partial/fragmentary measures such as the replacement of windows are not eligible to obtain the credit.

The regulations are committing to have an energy and economic analysis of the building condition prepared, which takes into account all elements of the building determining its energy consumption, including heating installation. An important challenge is to carry out several refurbishment works in parallel, such as clearing mold-infested basements, painting staircases or fixing the surrounding of a building. Very often, there is no room for these works. Accordingly such repair works can not be included in the scope of thermal retrofitting measures although it would be worthwhile to set up a mechanism that would allow for a comprehensive revitalisation of the building. The other obstacle to the decision on applying for the credit is the complicated ownership status of the building which results from the incomplete process of ownership transformation. Quite often the building is partly owned by the municipality, the HOA or individual owners. This ownership structure makes it difficult and even prevents to grant a credit. The current situation of split ownership determines a small number of credits, which is to be used for the modernization of heating networks and heat sources. Usually, the owners of this infrastructure do not own the buildings. The promotion of thermal retrofitting targeted at all potentially interested audiences, both residents, building administrators and owners of heat sources could facilitate the establishment of common activities aimed at improvement of energy efficiency. In order to boost the interest of single family owners in thermal retrofitting it is recommended to set up a simplified model of energy audit for typical measures.

2.2 "Apartment Building Modernization Programme" - Lithuania

2.2.1 Description of Programme

Figure 3: Fact Sheet "Apartment Building Modernization Programme (APMB)" (LI)

Programme Name	Apartment Building Modernisation Programme
Programme Host	Housing Agency
Programme Partners	Ministry of Environment of the Republic of Lithuania, Bank Loan Insurers, Commercial Banks and other financiers, Apartment Building House Owner Association, Apartment Building Flat Owners, Consultancy Companies, Contractors
Objective	Energy efficient renovation of apartment buildings
Audience	Apartment Building House Owner Association, Apartment Building Flat Owners, Consultancy Companies, Contractors
Duration	2008-2010
Budget	20 m Lt (2007), 80 m Lt p.a. (2008-2010)
Homepage	Project homepage not available, some information can be found on Housing Agency homepage: http://www.bkagentura.lt

The Apartment Buildings Modernization Programme was validated on 23 September 2004 by Act 1213 supporting energy efficient renovation of apartment buildings. Until 2010, Lt 80 m are foreseen in state budget to subside building refurbishment. It is granting subsidies up to 50% of total refurbishment costs. Until February 2007 the possible subsidy level was only up to 30%. Target groups of the program are House Owner Associations (HOA) or apartment building flat owners who have signed a contract of joint activity. Participation obligates to several documentation and processing requirements (e.g. decision on building refurbishment in owners meeting (HOA meeting), energy audit, application for support, presenting investment project to Housing Agency, procurement documents, tendering for materials and work procurement, contracts with bank and insuring company, returns of credit loan, payments of interest and insurance/guarantee deposit, provision of Housing Agency with monitoring data). If technical design is obligatory, HOA must apply for design requirements of the municipality, district heating company etc. Considering the time needed for design and tender procedure, it can take 5-6 months until rehabilitation work is started.

2.2.2 Results and Lessons Learned

According to statistics, there are approximately 30,000 old apartment buildings to be refurbished in Lithuania. Around 97% of old apartment buildings still need rehabilitation. The average cost of apartment building total refurbishment is assumed to be Lt 1-1.5 m. Average refurbishment cost is approx. 600 Lt/m^2. This means that Lt 80 m of subsidies will be enough for less than 160 buildings – an extremely low amount for building refurbishment. Until June 2007, only 126 HOA refurbished their houses via participating in ABM program. This indicates an extremely low level of residential activity. Since February 2007 maximum governmental subsidy of total building refurbishment cost was increased from 30 to 50%, raising interest of flat owners to renovation. Until end of June 2007 the Housing Agency approved 339 HOA investment projects.

The following barriers for a more successful implementation can be identified:

- Inactivity of residences,
- Existence of governmental subsidies for space heating costs to low-income families (e.g. pensioners); low-income families constitute a significant part of apartment building flat owners that are economically not interested in investments for building rehabilitation,
- Risk aversion of especially older people to take out a bank loan,

- The initial down payment of 10% of total refurbishment cost is too high for some flat owners,
- Due to low profitability (i.e. high transaction costs), it is rather difficult to contract companies for small-scale design and construction works.

To raise attraction of APMB, the following improvement strategies are discussed:

- Raising public awareness on energy efficiency and heat cost reduction issues,
- Definition of standard technical designs for windows and exit doors replacement, walls extra isolating and roof refurbishment for standard multi-family apartment buildings,
- Increasing of state budget for building refurbishment subsidies,
- Involvement of all houses to ABM Programme until now, only HOA and joint activities by Apartment Building flat owners are supported. According to the Federation of House Owner Associations, 7,000 HOA are established, with only 20% of apartment buildings being established HOA).

Due to mainly two factors, interest in programme participation rose significantly since February 2007: First of all the maximum possible share of public subsidy was raised up to 50% of investment costs. At the same time, heating costs rose continually with rising natural gas prices. For 2008, Government initially appointed LT 52 m. This amount was already distributed in January. For that reason, the Environment Ministry applied to increase programme budget in the size of LT 100 m. Accordingly, the low budget equipment of the program is a clear bottle neck to a more successful and expanded program implementation.

3 Lessons learned from EU co-funded projects

In the past, several EU co-funded projects dealt with problems of financing energy efficient refurbishment measures. In these projects different questions were investigated and several solutions elaborated. The following EU co-funded projects are of special interest: Baltic Chain, Clearcontract, Eurocontract, CP-SEP, BEEP and BEEN.

3.1 Baltic Chain

3.1.1 Description of Project

Figure 4: Fact Sheet "Baltic Chain"

Programme Name	Baltic Chain
Programme Host	European Commission, DG Economic and Financial Affairs, DG TREN
Programme Partners	Danish Energy Authority (DK), Estonian Energy Research Institute, Ministry of Economic Affairs (EST), Motiva Information Centre For Energy Efficiency (FI), Energy Foundation Schleswig-Holstein (DE), Latvian Development Agency (LT), Ministry of Economy, Energy Efficiency Centre (LI), Ministry of Petroleum and Energy, Institute for Energy (NO), National Energy Conservation Agency (PL), Scientific Research Centre for Ecological Safety of the Russian Academy of Sciences (RUS), National Energy Administration (SWE), International Energy Agency (IEA)
Objective	small/medium RUE and RES projects
Audience	
Duration	1999-2001
Budget	No data available
Homepage	http://www.kape.gov.pl/EN/Programmes/Programmes_Bilateral/BALTIC_CHAIN/index.phtml

The Baltic Chain Project was financed by Interreg II C and national contributions. It was to support implementation of small/medium RUE and RES projects being in need for expertise and finance. As small and medium sized energy projects (SMEP) were identified as key element in any emission reduction strategy, Baltic Chain worked on mechanisms that allow for a faster implementation of more SMEP in the BSR, giving especially small and medium sized enterprises (SME) the opportunity to open up new markets.

Baltic Chain elaborated a concept for so called "Clearing House" (CH) with local "Country Desks" (CD), which can facilitate services to implement small and medium RUE and RES projects. The nature of those services was specified and tested with the participants. During the project, the CH-concept was further developed. Later on the concept caught interest with the EU and is currently being further developed in ClearSupport (Intelligent Energy – Europe).

3.1.2 Results and Lessons Learned

Baltic Chain identified four possible services of Clearinghouse facilities:

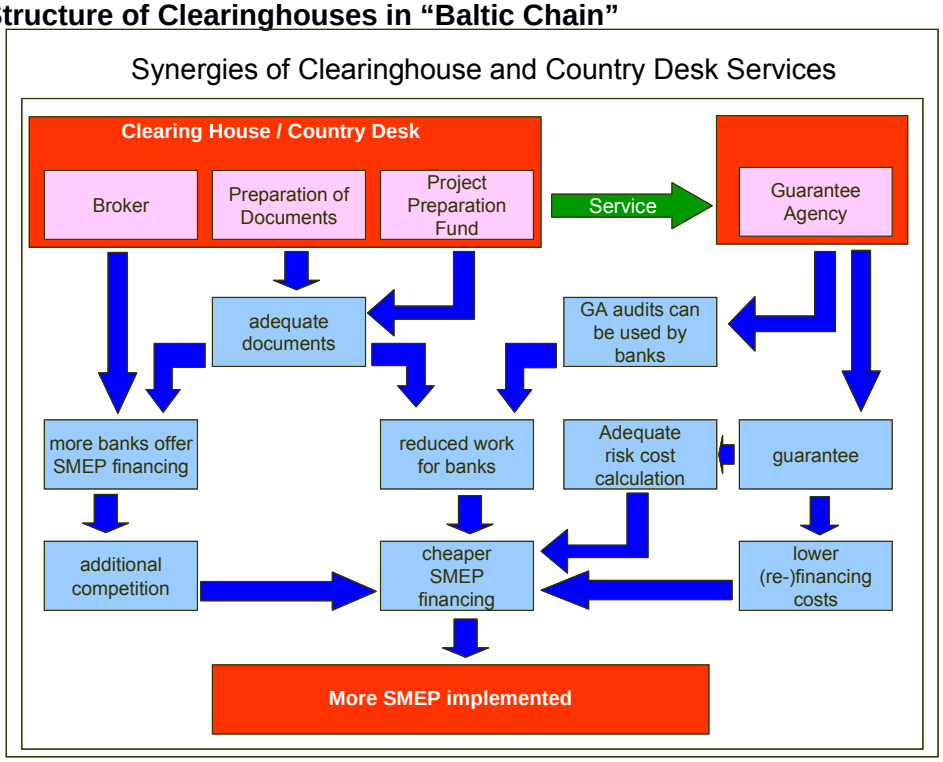
- Preparation of documents for project owners: Enabling them for qualified negotiations with relevant finance institutions.
- Clearing Houses as Broker: Support of project owners by national and international tendering for the financing of projects and - in some cases - a combined supply and financing (increasing competition among banks and facilitating funding from several financing sources).
- Project Preparation Fund (PPF), which pre-finances feasibility studies. The PPF is to increase the acceptance of banks to finance small-scale projects. If the project is finally im-

plemented, project owners have to repay the costs of the feasibility study and a margin covering all expenses of the Clearing House.

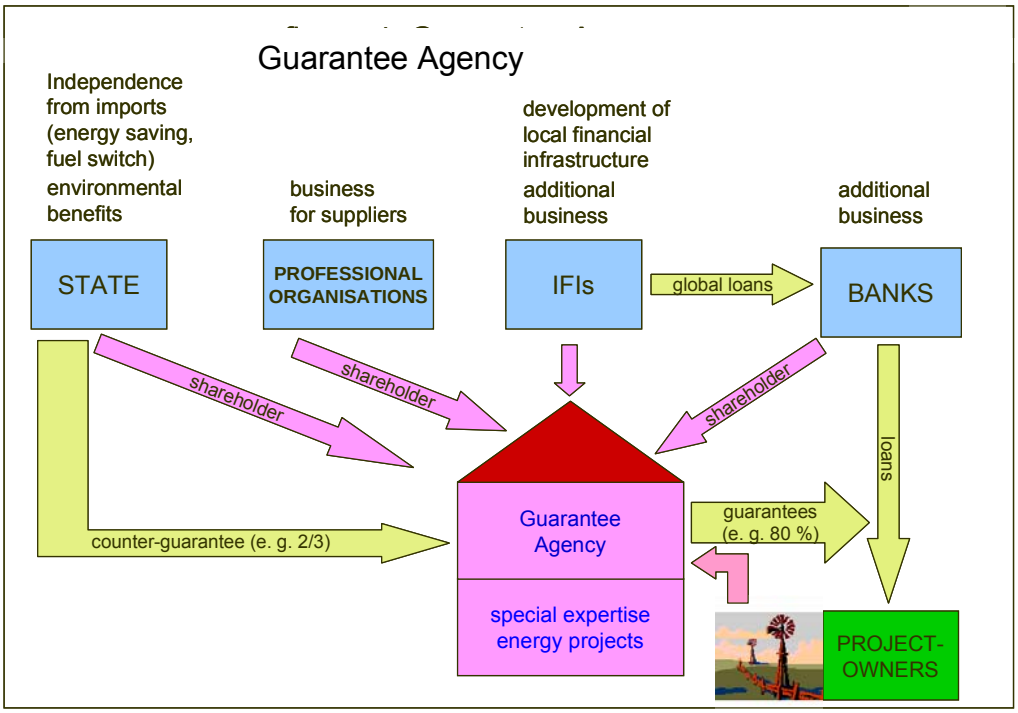
Guarantee Agency (GA) as first contact of a project developer, will audit project before banks do. It issues a guarantee for the repayment of e.g. 80% of the loan and will make its audit available to interested banks. Due to its expertise, the risk premium being calculated by the GA will be much more realistic than the one of banks. Furthermore, the audit of the Agency will enable more banks to decide on loans and thus raise competition.

The idea of a CH, as elaborated in Baltic Chain, was a two level idea.[1] On an international Baltic level the overall CH institution should have been established. On the national level country desks were set off. The main structures of CH are shown in the following charts:

Figure 5: Structure of Clearinghouses in "Baltic Chain"



[1] Baltic Chain also analysed if a CH could work in the long run on a market oriented basis without subsidies. To act as flexible and customer-oriented as possible, the CH could be financed by a small fee for it's services and thus function on commercial terms.



Due to a lack of continued funding, the country-based development of CD were suspended, when the Baltic Chain project ended in 2001. Probably, the complicated structure of elaborated CH also contributed to its termination. Nevertheless the idea of CH facilitating networking and providing advisory functions for small/medium RUE and RES projects is still relevant and being dealt with in other fora.

3.2 Clearcontract

3.2.1 Description of Project

Figure 6: Fact Sheet "clearcontract"

Programme Name	Clearcontract – Clearinghouse for Energy Contracting
Programme Host	
Programme Partners	Austrian Energy Agency (AT), Berlin Energy Agency (DE), Budapest University of Technology and Economics (HU), Ekodoma (LV), Energy Centre Bratislava (SK), Energy Efficiency Agency (BG), Institute Jozef Stefan (SLO), Krajowa Agencia Posznowania Energii (PL), Lithuanian Energy Institute (LT), SEVEn (CZ)
Objective	Decreasing administrative and organisational barriers to RUE investments, establishing a CH for contracting projects, introducing contracting as TPF
Audience	
Duration	January 2003 – December 2004
Budget	
Homepage	www.clearcontract.net

The objectives of Clearcontract, which was targeted to the CEEC, can be summarised as follows:

- to decrease administrative and organisational barriers to EE investment,
- to establish a CH for contracting projects,
- to introduce contracting as a means to TPF of investments in EE and

- to help secure investors for successful implementation of contracting projects.

Following information on key results of Clearcontract is available:

- Online information on TPF in a number of languages (s. homepage)
- Model contract and guidelines (baseline calculation, tender documents) available in national language of participating countries: HU, PL, LT, LV, BG, SL, SK, CZ

3.2.2 Results and lessons learned

Clearcontract identified subsequent restrictions to implement small-scale RUE measures:

- Lack of resources,
- Data availability (esp. for baseline development),
- Complexity of contract (raising reluctance),
- Few practical experiences in new procurement legislation,
- Constant changes of energy prices and regulations on subsidies,
- Small number of ESCOs in CEEC,
- Lack of interest in energy matters on the side of building owners.

Moreover, barriers emerge from an unstable political situation on the local level (often changing political decision makers), preventing long-term decisions about energy efficiency projects. In addition, small local companies need consulting support to access the financial market (via the country desk experts) and financial support like guarantee programmes and efficiency funds. As a consequence, further activities were defined:

- Development of tools for local energy management and bookkeeping, associated training on such tools,
- Further information of political decision-making level,
- Development of financial instruments via commercial banks,
- Increasing know-how on energy contracting in the banking sector,
- Development of solutions to tackle refurbishments with EPC approach and
- Support of ESCO development.

Positive results of this project can be seen in the following elements:

- Standard documents in all countries,
- Competence centres in all countries (but on different levels),
- Pilot projects in many countries (prepared up to tender documentation),
- Practical and hands on experiences with EPC and EDC-models, procurement procedure and its implementation as basis for continuing operation of CH.

3.3 EUROCONTRACT

3.3.1 Description of Project

Figure 7: Fact Sheet "EUROCONTRACT"

Programme Name	Eurocontract -
Programme Host	Berlin Energy Agency (DE)
Programme Partners	Austrian Energy Agency (AT), Berlin Energy Agency (DE), Centre for Renewable Energy Sources (GR), French Energy and Environment Agency (FR), Graz Energy Agency (AT), Italian Federation for the Rational Use of Energy (IT), Mid Wales Energy Agency (UK), Motiva Oy (FI), Norwegian Energy Efficiency Inc. (NO), Regional Energy Agency of Liguria (IT), Swedish Energy Agency (SV)
Objective	Contribution to market development of energy services in Europe by developing and promoting EPC
Audience	
Duration	January 2005 – December 2007
Budget	www.eurocontract.net

The main objective of Eurocontract was to push market development for EPC. This target was to be achieved by developing tested standards (e.g. on quality of energy services, guiding principles of ESCO certification) and model documents. Through the implementation of pilot projects, the applicability of national support and standard tools was to be tested. A further objective was the establishment of an EU-wide EPC-network. Through exchange and discussion on capacity building and know-how barriers an accelerated market development was to be achieved. As a result of Eurocontract, subsequent products have been provided:

- Model documents and guidelines on EPC implementation,
- Case Studies of implemented Projects
- "Manuals" either as informative documents or decision support documents on
- Comprehensive Refurbishment and Energy Services,
- Innovative Financing for Energy Services,
- Facility Management and Energy Services,
- Quality Securing Instruments for Energy Services,
- Discussion/Basics regarding ESCO Certification and
- EPC & White Certificates.

3.2.3 Results and Lessons Learned

Following results are of importance:

- Required time for project preparation is continuously underestimated,
- Work with financing sector is slow and needs to be more continuous,
- FI's have only limited know-how on energy efficiency and related technologies, they only react on demand, but are not proactive,
- Energy Efficiency lending is still a niche,
- Project finance based on cost savings is not common, and
- Need for more political support on EE (gain of trust for long-term decisions).

3.3 Commercial Finance for Sustainable Energy Projects (CF-SEP)

3.3.1 Description of Project

Figure 8: Fact Sheet "CF-SEP"

Programme Name	Commercial Finance for Sustainable Energy Projects (CF-SEP)
Programme Host	
Programme Partners	Ekodomia (LV), Energy Center Bratislava (SK), Joint Stock Company Eksergija (LI), OÜ Energiasäästubüroo (EST), SEVEn (CZ)
Objective	Improving availability of financing EE/RES projects to SME, house associations and private owners by enhancing knowledge about marketing potentials and requirements in FI
Audience	SME, housing associations, private persons
Duration	January 2006 – June 2007 (18 months)
Budget	
Homepage	http://www.ecb.sk/ecb/index.php?id=99&L=1

The objective of CF-SEP was to improve FI's capacities on the economic specifities, requirements and marketing potentials of small-scale EE/RES projects. To this objective, CF-SEP defined two targets. First it intended to prepare a "manual" for banks on how to evaluate energy efficiency projects. Through practical project implementation with stakeholders it focussed on preparing bankable projects and its documentation. A further objective was to expand availability of commercial lending towards SME, housing associations and other privates. For this process, several short term goals were defined.[2]

3.3.2 Results and Lessons Learned

The subsequent description of outcomes of the CF SEP-project are mainly derived from the final report (http://www.ecb.sk).

- Receiving a subsidy is of highest priority to project developers, accordingly application procedure is initially binding majority of resources since only subsidy helps passing threshold to economic feasibility and strengthens negotiating position with banks.
- Banks still base their decision rather on assessing the client than the project,
- Lack of experience and capacities in banks to assessing technical and economic aspects incl. investment risks involved; bank training courses improve know-how, but continued assistance from external experts is required (e.g. qualified consultants).
- Project developers are recommended to prepare financial and technical issues in parallel, early consultations with banks prevents later conflicts.

Further outcomes of the proposed action included:

- Preparation of at least 25 EE and/or RES projects in all participating countries, guidance on adequate financial structuring and marketing to FIs,
- Involvement of 3 banks, training of 80-95 officers and 20-30 risk managers per country, and

[2] For this process, several short term goals were defined: Deepening knowledge of current credit culture and transferring it to the energy community, gaining better understanding of barriers on SME side that prevent submission of quality credit applications to FI's, developing and disseminating an information tool on available financial resources, updating already existing "best practice financial manuals" such as model business plans and feasibility studies, identifying and developing promising projects to bankable stage.

- Preparation and distribution of "Financial Resources Manual" and "Best Practice EE and RES Finance Manual". Both are available under http://www.ecb.sk/ecb/index.php?id=121&L=1#c201.

3.4 Bankable Energy Efficiency Project (BEEP)

3.4.1 Description of Project

Figure 9: Fact Sheet "BEEP"

Programme Name	Bankable Energy Efficiency Project (BEEP)
Programme Host	
Programme Partners	Austrian Energy Agency (AT), Centre for Renewable Energy Sources (GR), Deutsche Energie-Agentur GmbH (DE), Energy Efficiency Agency (BG), ENVIROS (CZ), Institute for Studies and Power Engineering (ROM), Institutt for Energiteknikk (N), Slovak Energy Agency (SK), The National Energy Conservation Agency (PL)
Objective	Development of bankable investment projects to improve energy efficiency in selected Central and Eastern European countries
Audience	
Duration	January 2003 – December 2004
Budget	
Homepage	www.save-beep.org

The aim of BEEP was to develop bankable investment projects for improving energy efficiency in selected CEEC (Poland, Czech Republic, Slovakia, Bulgaria and Romania). The work was divided in seven phases:

- Preparation of reports on relevant national framework conditions in CEE partner countries and their significance for meeting EBRD requirements,
- Identification of appropriate EE projects in each CEE partner country,
- Preparation of EBRD-based business and financing plans for selected projects,
- Negotiations with EBRD, local banks and financing institutes on financing plans.

3.4.2 Results and lessons learned

Following types of supportive documents were submitted:

- Project fiche (providing a brief and broad picture of the project, comprising decisive project information on four or five pages.[3]
- Business Plan Format:[4] As financial plan it is to demonstrate viability of the project. and indicates the assumptions being made during its preparation. Amongst others, it contains: investment conditions (technical, financial, etc.), financing structure (total amount to be invested, need for loans and equity), overview of assumptions (e.g. fuel costs, inflation etc.), future income statement incl. a balance sheet and cash flow.
- Incremental Cash Flow Model:[5] Key parameters are initial capital outlay, and – over the project horizon – savings or return achieved due to project implementation.

[3] The format of the project fiche can be downloaded from Project Assessment Tools under: www.save-beep.org/page/fileadmin/beep/download/ProjectFicheFormat.doc.

[4] The format of the Business Plan Format can be downloaded from this site: www.save-beep.org/page/fileadmin/beep/download/BusinessPlanFormat.doc

[5] By defining the project's net present value, the model allows the calculation of internal rate of return and discounted pay-back in relation to business as usual. This enables a judgment as to whether the investment would be

3.5 Baltic Energy Efficiency Network (BEEN)

3.5.1 Description of Project

Figure 10: Fact Sheet "BEEN"

Programme Name	BEEN – Baltic Energy Efficiency Network
Programme Host	Berlin Government, Senate Department for Urban Development (lead partner)
Programme Partners	Housing Initiative for Eastern Europe (IWO e.V.), Federal Ministry of Transport, Building and Urban Affairs (BMVBS), Ministry of Science, Economic Affairs and Transport of Schleswig-Holstein, Ministry of Labour , Building and Development of Mecklenburg West-Pomerania (all DE); Ministry of Transport and Construction, National Energy Conservation Agency, National Economy Bank (all PL); Ministry of Environment, Housing Agency, Klaipeda City Municipality (all LI), Ministry of Regional Development and Local Governments, State Agency "Housing Agency", Riga City Council (all LV); Credit and Export Guarantee Fund KredEX, Association of Estonian Facilities Administrators and Maintainers, Estonian Union of Cooperative Housing Associations, Tallinn University of Technology, Ministry of Economic Affairs and Communications of the Republic of Estonia, Talinn City Government (all EST)
Objective	Developing strategies/ instruments to promote EE refurbishment of pre-fabricated multi-storey building stock
Audience	
Duration	July 2005 - 2007
Budget	[1.400.000 EURO]
Homepage	www.been-online.net

The Baltic Energy Efficiency Network (BEEN) is an ongoing project and co-financed by EU-Interreg IIIb fund. It started in July 2005. The project is to develop strategies and instruments that promote energy efficient refurbishment of prefabricated multi-storey building stock erected between 1950 and 1990. It is dealing with technical, legal, institutional and financial preconditions necessary to promote EER of residential buildings. The geographical dimension of the project covers five countries from the Baltic Sea region (EE, LV, LT, PL, D).

3.5.2 Results and lessons learned

Following intermediate results are useful for further work in WP 3 of ClearSupport. First of all, illustrating economic data is provided in relation to the residential structure and situation in Poland, Lithuania and Latvia. The following interesting cost figures were provided:

in the interest of the project owner or not. The format of the Incremental Cash Flow Model can be downloaded from: www.save-beep.org/page/fileadmin/beep/download/ IncrementalCashFlowModel.xls; Further information on BEEP and related tools can be found in the project brochure summarising the project results under www.save-beep.org/page/fileadmin/beep/download/ BEEP_Project_Brochure.pdf

Figure 11: General Economic Conditions for Refurbishment (BEEN)

	Poland	Lithuania	Latvia
Total amount of flats	11.763.500	475.000	453.030
Flats built 1950-1990	5.200.000	320.000	416.460
Average size of flat*	50 m²	59,6 m²	50 m²
Disposable household income for refurbishment repayment*	24,00 €/a	156,00 €/a	120,00 €/a
Average costs for refurbishment*	8.000,- €	8.000,- €	8.000,- €
Average energy costs*	Small extend: 24 €/a Medium extend: 72 €/a Large extent: 120 €/a		
Possible Energy savings*	up to 55%		
Kind of credit	Mostly redemption loans		
Runtime of credits	Up to 10 years		
Interest rate	5 to 7 %		

The BEEN project also offers useful insights into the national ownership structure of residential buildings. Mainly five types of ownership were identified as being relevant.

- Private property managed by a housing manager (type 1),
- Private property managed by a Home Owner Association (type 1A),
- Property owned by a cooperative as registered legal body (type 2),
- Property owned by a cooperative with cooperative as housing manager (type 2A),
- Property in possession of a private or communal Housing Association, sole responsibility of owner with regard to managing issues (type 3).

In Poland, ownership type 2 is of most importance (total share of about 82%), followed by ownership type 2A (approx. 13%) and type 1 (approx. 5%). Accordingly, cooperative forms of wnership are most relevant. The situation is different in Lithuanian, where the dominant ownership type is type 1 (total share about 76%). The high portion of private property is further consolidated by the relevant share of private property managed by a HOA (approx. 21%). Property of type 3 (property in possession of a private or communal Housing Association) is of least relevance (approx. 3%). The ownership situation in Latvia is in some aspects comparable with that in Lithuania. Here, private ownership of type 1 is also of prime importance (total share of about 83%). However, type 2 as cooperative form of ownership, which has no relevance in Lithuania, is also of some significance (approx. 14%), followed by a small share of ownership type 1A (approx. 2%). Figure 17 is providing for more details of the ownership situation in the respective countries.

Figure 12: Types of ownership and shares (BEEN)

	Number of flats*		
	Poland	Lithuania	Latvia
1: Condominium ownership: Private property at a certain flat connected with the obligation, to pay the running pro rata costs for administration of common property. The majority of condominium owners has to elect and mandate a housing manager.	203.300	597.000	347.000
1A: Condominium ownership like type 1 with the difference: special type of housing manager: Housing manager is a "Home owner association" (HOA) that can be founded by active condominium owners. The HOA is a registered legal entity. The membership in the HOA is voluntary. The HOA is in charge to manage the common matters of the property with majority of the HOA members (majority of the condominium owners not required)	-	170.000	10.000
2: The property is owned by members of a cooperative. The cooperative is a registered legal body. Every dweller of a flat can be member of the cooperative by paying a cooperative share. For using his flat every member of the cooperative needs a rental contract, because he is only a shareholder of the cooperative, but not owner of a certain flat. He has to pay rent likewise a lessee.	3.170.000	-	59.460
2A: Condominium ownership inside a cooperative is like owner type 1 with the difference: The housing manager for the common matters of the property is the cooperative.	490.500	-	-
3: The property is in possession of a private or communal Housing association or a private owner. The property has an undivided land register folio. The dwellers are lessees and pay rent. The owner decides alone about housing managing.	-	23.000	-

In sum, considerable differences exist with regard to the ownership structure. Whereas a major share of cooperative ownership dominates in Poland, Lithuania and Latvia are characterised by a major share of private types of ownership (types 1 and 1A). In Latvia, cooperative forms of ownership are also of some relevance (type 2).

With regard to different ownership structures, the BEEN project identified different obstacles to the implementation of larger refurbishments. Figure 18 is listing existing barriers due to the financial qualifications of each kind of ownership. Additionally, recommendations are enclosed to improve the respective financing situation.

Figure 13: Main Obstacles for Realizing Larger Refurbishments

Obstacle 1: Condominium ownerships (type 1 and 1A) have (despite available land register folios) no chance to secure a common refurbishment loan with mortgages.

Condominium ownerships need guarantees as bank loan securities to get refurbishment loans. Although such guarantees exist in the new EU-countries, they cover only partly risks, are connected with high fees and have limited loan runtimes up to 10 years.

Obstacle 2: Condominium ownerships (type 1) cannot use loans with state guarantees (without mortgage) either, because individuals usually cannot carry required full common liability on such loans. Due to a lack of incentives to sign loan contracts, owners pay pro rata apportionments via the

housing manager.

A guarantee element is required to restrict liability at the pro rata apportionments. Condominium owner type 1A (HOA), which is available in Lithuania, Estonia and Latvia (pursuant to national condominium laws), does avoid this problem and is a more suitable innovative owner type. Similarly, the innovative owner type 2A (condominium inside cooperatives) in Poland does avoid this problem.

Obstacle 3: Cooperatives are able to secure loans through mortgages. In Poland (the country with the biggest share of cooperative flats), mortgaging requires the consent of the majority of cooperative members. This decision rule can prevent mortgaging loans.
Condominium owners need more flexible loan conditions that they estimate as fair and understandable (e.g. to make higher repayments without fees). Usually, public promotional banks can offer more suitable financial conditions like the German KfW banking group.

Obstacle 4: Better adapted long-term loan guarantee programs to ensure competitive and sustainable RUE investments
To stimulate larger refurbishments, adequate public loan guarantee programmes connected with restricted liability at the pro rata apportionments are to be favoured against simple percentage oriented project subsidies. Subsidies can only cover a small part of refurbishment costs and leave larger financing problems unsolved.

Obstacle 5: Better adapted subsidies to low income households in terms of loan apportionments

To increase consent to large-scale and broader refurbishments, support programs shall include a subject and income-related element of support (e.g. for low-income households). Such elements would allow to partly covering costs of apportionments for refurbishments (either as a separate income-related public support or within the context of dwelling costs allowances). With such elements consent of a larger number of low-income dwellers is supposed to increase. However, income-related support standards could be more bureaucratic than flat-rate oriented subsidies.

Finally, the BEEN project is dealing with following relevant issues:

- Overview over national legislative frameworks for refurbishment in PL, LV and LT,
- Synopsis of structural and energetic deficits in multifamily residential buildings constructed after 1950, and
- Cost calculation model for calculation of costs and saving from EER (to be elaborated until June 2007).

4 Lessons learned from cross country support schemes

Cross country support schemes operate either in a number of specific countries following the same basic principles. In the following the Bulgarian "Residential Energy Efficiency Credit Line" (REECL) as EBRD funded scheme, the Bulgarian Energy Efficiency Fund (BgEEF), the German Environment Ministry's programme for abroad investment and the Global Environment Facility's CEEF Programme are presented and will be included in the evaluation and recommendations for the ClearSupport PSFs.

4.1 European Bank for Reconstruction and Development (EBRD)

The EBRD has as its mandate to foster economic and environmentally sound development in Eastern Europe. An "Energy Efficiency Team" is put in place to manage the EBRD's energy efficiency activities.[6] One specific target is to provide direct finance to projects of a significant scale which save energy. With regard to EE in buildings the following support strategies of EBRD are of relevance:

- Support of existing or new ESCOs, EBRD specifically supports ESCO projects which target social facilities (e.g. schools, hospitals),
- Development of sustainable mechanisms using local banks to provide financing to smaller projects (e.g. dedicated credit lines, risk sharing),
- Support of innovative financing vehicles (e.g. finance companies or equity funds targeting energy efficiency),
- Help monetise carbon credits arising from emission-reduction projects, this improves the bankability of emission-cutting projects.

The EBRD initiatives on energy efficiency and climate change are closely linked with the Central European Initiative (CEI).[7] The work of CEI is divided into nine working areas, with "Working Area 1" titled "Climate, Environment and Sustainable Energy". In 2006, the CEI Working Group on Energy identified the promotion and development of energy efficiency as one of the core issues to be reflected in the CEI Plan of Action 2007-2009. One central vehicle to supporting energy efficiency in the Central and Eastern European States is the CEI Trust Fund, managed at the EBRD. In relation to CEI, the EBRD announced in November 2006 to invest 1.5 billion € in projects for the following three years to reduce carbon emission, with the bulk going to energy efficiency.

Apart from increasing CEI initiatives on energy efficiency, the main activities of the EBRD Energy Efficiency Team are amongst others:

- Develop specialised EE investment mechanisms such as ESCOs and energy efficiency credit lines,
- Identify and implement industrial energy efficiency with other bank clients,
- Develop opportunities to sell carbon credits from EBRD funded projects, including the Netherlands EBRD Carbon Fund,
- The Bulgarian Residential Credit Line (more detailed information on that issue below),
- Key initiative concern two credit lines in Bulgaria: € 50 m credit line for SME and a € 50 m credit line for residential sector (buildings),

[6] According to its homepage, the EBRD is the only international financial institution with a specialised energy efficiency team.

[7] The CEI was established in 1989 as an intergovernmental forum to political, economic and cultural co-operation among its member states. Its main aim was to help transition countries in Central Europe to come closer to the EU. Currently, CEI is composed of 18 member states (http://www.ceinet.org/main.php?pageID=17).

- New initiatives for credit line establishment, developing credit line concept in other countries (e.g. Slovakia, where the relevant ministry has put aside money for the grant part of such initiative).

4.1.1 EBRD Residential Energy Efficiency Credit Line (Bulgaria)

Figure 14: Fact Sheet "EBRD Residential Energy Efficiency Credit Line" (REECL)

Programme Name	Residential Energy Efficiency Credit Line (REECL)
Programme Host	EBRD
Programme Partners	6 Bulgarian banks: Bulbank, Bulgarian Postbank, DSK Bank, Procredit Bank, Raiffeisen Bank, United Bulgarian Bank
Objective	Support of energy efficiency measures in residential buildings, focussing on single building components
Audience	Home owners, tenants of residential buildings
Duration	No data available
Budget	No data available
Homepage	www.reecl.org

EBRD established the REECL in cooperation with six Bulgarian banks. EBRD extends loans to these banks for on-lending of energy efficiency improvement both in blocks of flats and individual houses. Eligible types of measures include installation of energy efficient windows, thermal insulation on walls, roofs or slabs, efficient biomass stoves and gas boilers, solar water heaters and heat pump systems.

Incentive grant support is available from the REECL Programme in conjunction with the personal loan financing from the participating banks. In case of compliance with the terms and conditions of the REECL Programme, householders are entitled to receive payments up to 20% or 30% of total investment. Borrowers are eligible to receive up to 30% when they, as residents of apartment blocks, join together to pursue EE measures that have an impact on the whole building. As further condition, at least 50% of the residents have to make use of REECL loans borrowed from the same participating bank. To qualify for the group incentive of up to 30%, borrowers should occupy separate dwelling units in the apartment block.

Figure 15: Supported Measures under REECL

Energy Efficiency Improvement Measures	Incentive Level per Measure	Incentive Grant Cap per Measure in €
Energy efficient windows	up to 30%	€ 350
Wall Insulation	up to 30%	€ 450
Roof Insulations	up to 30%	€ 350
Floor Insulations	up to 30%	€ 350
Efficient Biomass Stoves and Boilers	up to 30%	€ 600
Solar Water Heaters	up to 30%	€ 600
Efficient Gas Boilers	up to 30%	€ 600
Heat Pump Systems	up to 30%	€ 600
Home Energy Efficiency Project		€ 2,000

Source: http://www.reecl.org/grants.php

4.1.2 Results and Lessons Learned

To date, the REECL Programme has committed to 13,662 energy efficiency home improvement projects, financed through personal loans totalling approx. lv 38 m and incentive grants

amounting to approx. lv 6 m. To date, REECL projects have saved a total estimated electricity equivalent of 93,604 MWh/a and reduced CO_2 emissions of 136,518 t/a. With regard to program implementation, following conclusion and recommendation were made by Sofia Energy Centre:

- A basic problem is that interest rate of loan offered is high compared with the grant and thus reduces user's motivation.
- Another problem relates to the individual household approach, leading to partial implementation of saving measures and inadequate energy performance of the entire building. Accordingly the grant should be for the improvement of the whole building.
- Additionally, the scheme should be more flexible to involve also people with low incomes (mortgage or similar).

4.2 Bulgarian Energy Efficiency Fund (BgEEF)

4.2.1 Description of Project

Figure 16: Fact Sheet "Bulgarian Energy Efficiency Fund" (BgEEF)

Programme Name	Bulgarian Energy Efficiency Fund (BgEEF)[8]
Programme Host	Bulgarian Energy Efficiency Fund (BgEEF)
Programme Partners	International Bank for Reconstruction and Development (World Bank), Government of Austria, Government of Bulgaria, private companies[9]
Objective	Financing projects that target energy efficiency improvements
Audience	Companies (ESCOS), municipalities, physical persons
Duration	Up to 5 years
Budget	Initial capitalization – approx. BGN 20 million (15M$US)
Homepage	www.bgeef.com

In general, BgEEF is offering different financial instruments and technical tools to support EE investments (e.g. low-interest credits, partial credit guarantees for commercial bank loans, technical assistance.

Key funding principles to participating in the BgEEF program are as follows:

- Minimum of 50% of the project's economic benefits should come from provable energy efficiency improvements;
- Project must introduce proven energy saving technology;
- Equity contribution of project developer is at least 10% in case of co-financing (BgEEF + Commercial bank), or 25% in case of one-source financing (BgEEF only);
- Simple payback period of max. 5 years (project duration);
- Volume of investment 15,000-1,500,000 €.

Amongst others, one funding area of BgEEF is the rehabilitation of buildings.[10] In relation to this issue, BgEEF have recently signed a trilateral framework agreement with the United Na-

[8] Established with provisions of the Bulgarian EE Act. It is governed by following principles: Public-Private Partnership (autonomous legal entity), principle of self-financing, transparency in administration of financial resources, equal opportunities to all applicants for project financing.

[9] DZI Bank, "Lukoil" AD, Brunata Bulgaria Ltd.

[10] Other key funding areas are: Investments in industry incl. purchase of equipment, machines and tools, training, technical assistance; improvements to the heat source and distribution system; fuel switch; thermal insulation; reconstruction of heat generation and distribution system; improvements to mechanical heating ventilation and air conditioning; rehabilitation of municipal facilities; small cogeneration systems.

tions Development Programme (UNDP) and the Bulgarian Ministry of Regional Development and Public Works (MRDPW) to implement a “Display Project for Renovation of Multifamily Residential Buildings”. This project is to kick-start the energy efficiency investment market in the Bulgarian housing sector. The project’s objective is to extend the organisational and technical capacity of the association of condominium owners on renovation projects. To this end, the project organises a technical and energy survey, supports design documentation by parts, issues the building permit and supports competitive procurement of goods and services. BgEEF, on its part, issues a residential portfolio guarantee in favour of a bank, selected by condominium owners. The guarantee covers the first 5% of delayed payments on the loan capital. Beneficiaries are ESCO companies and banks.[11] Another task of BgEEF’s is to consult commercial banks on technological issues and solutions of small-scale projects. In this case, BgEEF provides for a bundling service with regard to the technological solution.

4.2.2 Results and Lessons learned

The following lessons can be derived from the BgEEF operations:

- By means of institutional capacity building, public promotion and fund raising, BgEEF could rapidly increase interest in energy efficiency
- Competitive financial environment - competition prevails over cooperation
- Initial focus on municipalities: slow, tedious decision-making process (e.g. procurement procedures)
- Strongly subsidized projects have strong political effect and short term economic impact but do not contribute to develop a energy efficiency market
- More market-oriented project financing is needed

4.3 BMU program for promoting investments to reduce environmental pollution abroad – pilot projects abroad

4.3.1 Description of Program

Figure 17: Fact Sheet “BMU program for promoting investments to reduce environmental pollution abroad – pilot projects abroad”

Programme Name	BMU program to promote investments targeted at reducing environmental pollution abroad and focussing on pilot projects
Programme Host	Federal Ministry for Environment, Nature Conservation and Nuclear Safety BMU)
Programme Partners	Businesses interested in investments of environmental technology
Objective	Support of environmental projects with direct trans-boundary environmental effects, support of environmental projects without measurable trans-boundary effects but serving as “lighthouse projects” and conducing “philosophy transfer
Audience	Private businesses, energy agencies, etc.
Duration	In principal no end date, depends on availability of budget
Budget	No data available
Homepage	http://www.bmu.de/english/pilot_projects_abroad/doc/5684.php

The BMU programme "pilot projects abroad" is to support environmental pilot projects:

- With direct trans-boundary environmental effects in Germany,

[11] Further features of the guarantee that it covers large number of projects (e.g. guarantee for BGN 500 000 can cover 10 million portfolio), guarantees the first X% of defaults in the portfolio, is uncollateralized and fast track (six weeks, if all documents are correct).

- With measurable trans-boundary effects as their main focus, which also serve as "light-house projects" supporting philosophy transfer

To be eligible, projects under the first objective have to comply with the following sub-targets:
- Direct and tangible reduction of pollution in boundary waters or air in border regions,
- Promoting shift from end-of-pipe abatement technologies to integrated solutions (incl. concepts for an efficient use of energy),
- Upgrade of small and district heating installations.[12]

Eligibility under the second key objective is coupled with subsequent sub-targets:
- "Lighthouse projects" have to serve a climate-friendly economic development,
- As model projects they should incentivise other actors to carry out similar projects or to help to reduce potential obstacles,
- Funding for local public transport systems including noise abatement.

The BMU program mainly provides interest rate subsidies and investment grants. Interest rate subsidies are granted in conjunction with loans from the KfW (Germany's state owned Development Bank). Limited grants are provided for training and exchange programmes related to the projects. The application procedure is organised as follows: Project outline to BMU, review and discussion (1), written request for funding to BMU (2), interdepartmental agreement between BMU and partner ministry (3), preparation and signature of necessary contracts (4), start of project (5).

4.3.2 Results and Lessons Learned

Since 1992, the BMU has provided funding to the amount of approx. € 67.6 m for a total of 17 environmental pilot projects in the Czech Republic, the Republic of Poland and in the Republic of Latvia. One crucial lesson learnt related to the availability of financial funding. Due to dependence on German government budget laws, transfer of funds into a new budget year caused difficulties and led to overall reduced programme money available. Furthermore, documentation and processing requirements are supposed to being too complex. Another barrier especially with regard to EE investments in buildings is the heterogeneous structure and financial liquidity of flat owners. As precondition for funding, banks require higher deficiency guarantees, which worsen credit conditions. Especially the case of cooperative ownership is putting very high transaction costs on the implementation of such projects.

4.4 Commercializing Energy Efficiency Financing (CEEF)

Figure 18: Fact Sheet "CEEF"

Programme Name	Commercialising Energy Efficiency Financing (CEEF)
Programme Host	International Finance Corporation, IFC
Programme Partners	14 banks in partner countries
Objective	Expanded availability of commercial financing for energy efficiency projects in Hungary, Latvia, Lithuania, Estonia, Czech Republic, and Slovakia.
Audience	Municipal institutions, private companies, ESCO's
Duration	2003-?

[12] In the future, projects of this kind will continue to be supported above all in the Republic of Poland and the Czech Republic.

Budget	[…]
Homepage	www.ifc.org/ceef

4.4.1 Description of Project

IFC, in cooperation with the Global Environment Facility, has developed the program to support financing energy efficiency projects (EE) in Central European countries whose economies are 3-5 times more energy intensive than European Union standard. The program is operated in Estonia, Latvia, Lithuania, Slovakia, and the Czech Republic. Main objectives are:

- Mobilization of commercial funding for EE investments by way of specialized banking instruments (Guarantee Program),
- Capacity-building, market development and targeted technical assistance to FI's, ESCO's and end-users (Technical Assistance Program),
- Awareness arising and other marketing activities,
- Up-scaling business: Development of financing structures that can be replicated and offered to developing countries for large-scale lending (mainstreaming).

To achieve these objectives, the program mainly consists of a financial Guarantee Program and a Technical Assistance Program (TA). The Guarantee Program is composed of up to 50% IFC partial credit guarantees for EE investments through selected partner FI's and a variety of guarantee products (individual guarantees, portfolio guarantees, other specialized guarantees). With regard to the funding of small to medium-scale housing renovation projects, the product development of a combination between first-loss and pari-passu guarantees for portfolio products turned out to be very successful. Due to an increasing amount of housing projects, it became impossible to process them individually. Therefore, both first-loss and pari-passu guarantees were applied to single portfolio projects, which comprised of hundreds of subprojects. This portfolio product proved to be very successful due to substantially simplified approval and administration procedures. With this product, approval criteria have been predefined and approval and guarantee issuance were automatised, ensuring finalisation with a few days.

The donor-funded technical assistance (TA program) is practically oriented and flexibly structured to support participating FIs in developing and marketing specialized financial products for the EE sector. The TA program consists of the following elements: Direct financial support to project development, sharing of international best practise, FI trainings and marketing activities. Partnership with local financial institutions (FIs) is regarded as being decisive to help them develop an energy efficiency lending business and offer them partial guarantees so as to share the credit risk of EE finance transactions. Accordingly, the TA program directly supports project developers in effectively developing bankable EE projects for financing by participant FIs.

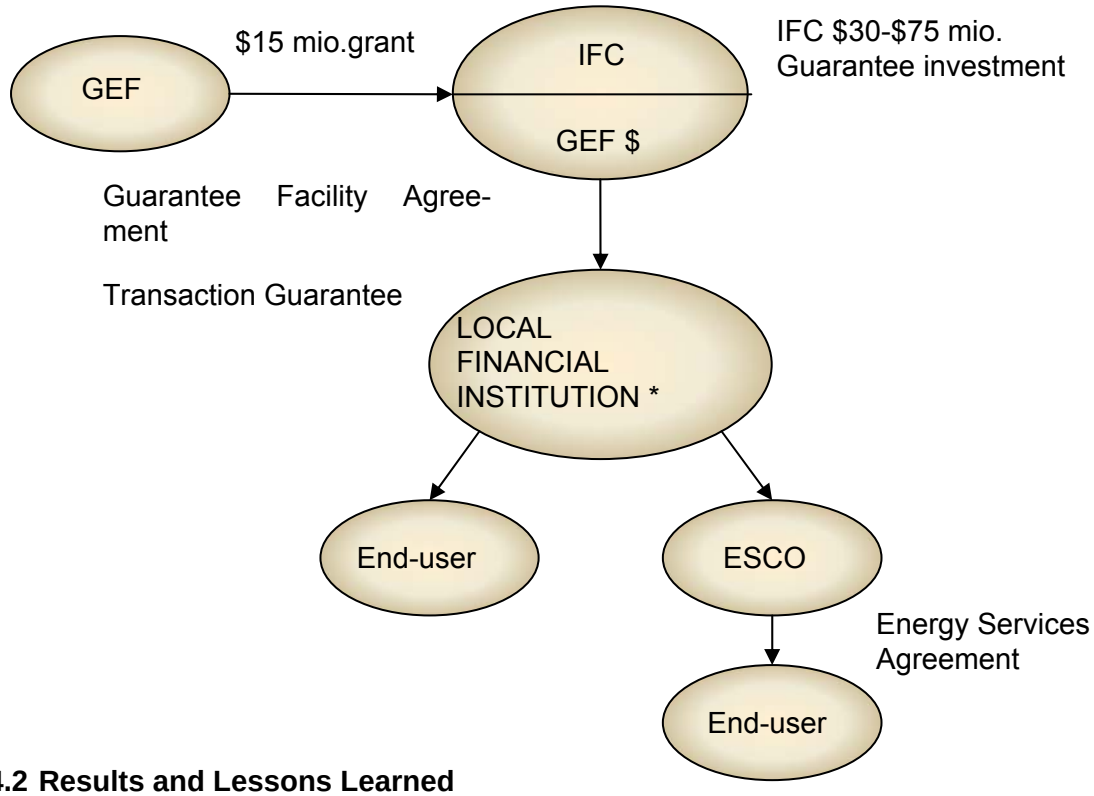
Transactions eligible for the program include investments in projects which improve efficiency of energy use in buildings, municipalities, industrial processes; and other energy end-use applications. According key areas of funding are:

- Municipal street-lightning,
- Block House renovations,
- Vendor finance programs for EE equipment sellers,
- Heating and lighting upgrades for municipal institutions,
- District heating retrofits,
- Combined heat and power production,
- Energy efficiency loans for SME's and industrial companies,
- Renewable energy projects: wind, biomass, hydro.

CEEF is designed to ensure a lasting developmental impact by building a self-sustaining market for financing EE investment. The CEEF innovative partial guarantee structure is expected to leverage over $ 225 m in private capital investments in energy efficiency. The innovative

focus of the project is on mobilising private capital investment through commercially-based investment, and establishing sustainable commercial lending businesses which are not dependent upon IFC in the medium term. The project works through multiple FI partners in seeking to catalyze investments across a broad range of end-user groups and market segments. In addition, the project's technical assistance component is targeted at building energy efficiency finance expertise in the financial sector and among local project developers. By lowering barriers to local FI's entering the EE financial financing market, the CEEF program is to increase the local financial sector's experience and capacity to provide continuous and independent EE project finance. Related to this, a pilot project in Hungary (1997-2003, "Hungary efficiency Co-Financing Program") already demonstrated that these tasks can be achieved. The subsequent figure illustrates the financial structure between the Global Environmental Facility (…), the IFC and local FI's.

Figure 19: Financial Structure GEF-IFC-Local FI



4.4.2 Results and Lessons Learned

As intermediate result, CEEF directly influenced the operation of 15 financial institutions across six CEEC. Committed amount of guarantees reached $ 120 m as of January 2008. In total, CEEF supported 128 projects (including several project portfolios), with total investment into EE measures exceeding € 194 m. As key elements for success of the CEEF program have been identified so far:

- Strong cooperation with reputable FI partner,
- Market experience, understanding of market dynamics,
- Heavy market activity by the bank,
- Standardized portfolio product,
- Streamlined project origination.

In the Czech Republic, CEEF works actively with three major banks, i.e.: Ceska Sporitelna / Erste Group (www.csas.cz), CSOB / KBC Group (www.csob.cz) and GE Money Bank (www.gemoney.cz). All together, CEEF has committed to those banks € 31 m for guarantees, one half of thus amount has already been disbursed. It has supported three dozens of EE and RE projects with total investment € 45 m and GHG emission reduction of 134,000 t/a.

In Latvia, CEEF is currently not applied. Previously, Hansa Bank and Unibank of Latvia participated in the CEEF projects. Guarantees from CEEF were committed to those banks. In January 2008, the Hansa Bank Latvia issued credits for two cogeneration projects (combined heat and power), which were facilitated with the assistance of the CEEF Latvia Guarantee.

In Lithuania, two banks participated in CEEF programme: AB SEB BANKAS / SEB Group (www.seb.lt) and AB BANKAS "HANSABANKAS / SWEDBANK" (www.hansa.lt). Guarantees in the size of € 1,2 m have been committed to both banks between 2003 and 2008. The major share of these guarantees was used to finance apartment building renovations. Less then 2 % (i.e. € 20,000) of this amount were used in the Technical Assistance Programme, mainly to finance energy audits and prepare investment projects.

5 General Conditions

Subsequent figures will specify the concrete costs and saving structure with regard to energy efficient refurbishment in the five partner countries (5.1). A second figure will illustrate the structure of ownership in respective countries (5.2). The following two overviews illustrate that the financial framework for energy efficiency investments vary widely between all six countries:

- Costs for refurbishment are between 374 and 1.100 €/m².
- The EER related savings reach an amount between 64 and 300 €/a.
- The resulting period of static amortisation is differing between 11,5 and 52 years.
- Procedure for decision making within the ownership structure are one of the main obstacles.

5.1 Costs and savings

	Lithuania	Poland	Czech Republic	Latvia	Slovenia	Region of Crete
Av apartment area	58 m²	50 m²	xxx	50 m²	xxx	120 m²
Av costs per flat for standard EER	€ 8.700 – 11.600, 150 - 200 €/m²	€ 3.600, 72 €/m² for buildings supplied by DH	€ 3700, xxx €/m² - rough estimation-	€ 2480, 49 €/m²	€ 8000 p. flat, € 16.000 EUR p. house xxx €/m²	€ 4.800 40 €/m²
Av heating costs before EER	6,45 €/m²a 374 €/a	12,5 €/m²a 625 €/a	Xx €/m²a 1.100 €/a - average for residential buildings (houses and flats)	3,15 EUR/m²a 157 €/a	Xxx €/m²a 1100 €/a	6,66 €/m²a 800 €/a
Av heating costs after EER	3,13 €/m²a 181,70 €/a	6,28 €/m² 314 €/a	Xxx €/m²a 900 €/a -av for residential buildings (houses and flats)	1,85 €/m²a 92,75 €/a	Xxx €/m²a 700 €/a	4,16 €/m²a 500 €/a
Resulting static amortisation period	52 years	11,5 years	18,5 years	38,6 years	20 years	16 years

5.2 Structure of ownership

	Lithuania	Poland	Czech Republic	Latvia	Slovenia	Region of Crete
Share of HOA	17%[13]	0,4 %	-	17%[14]	92%	43%
Share of residential building cooperatives	-	31,7 %	16% [15]	2%[15]	0,8%	0%
Share of private residential building companies	-	-	44% (private unorganized owners - owner occupants)	-	0,8%	2%
Share of municipal residential buildings	2%	13,6 %	18% (estimation)	13%	6,2%	1%
Others		54,3 %	22% (rented out flats and houses – not occupied by owner)	63% (87% of existing apartment buildings are private)	0,2%	

[13] House owner associations + joint activity contract
[14] Association of Management and Administration of Latvian Housing (AMALH)
[15] Typical residential building cooperatives - occupants are simultaneously members of the cooperative

6 Financing instruments

6.1 Lithuania

Name of financing instrument	Apartment Building Modernization Programme	Regional OP Cohesion Promotion (2007-2013) - Priority 3: Environment and Sustainable Development, Measure Group 4: Energy Efficiency and use of renewable energy sources	Regional OP Cohesion Promotion (2007-2013) - Priority 3: Environment and Sustainable Development, Measure Group 4: Energy Efficiency and use of renewable energy sources	OP - Infrastructure and Environment - Priority 10 Environmental-friendly infrastructure	OP - Infrastructure and Environment - Priority 12: Culture and cultural heritage protection and conservation
Kind of public support / financing instrument	Market credit + loan subsidy up to 50% of investment costs	Subsidies	Subsidies		
Competent institution	Housing Agency	Managing Authority: Ministry of Economy Implementing Authority: Lithuanian Business Support Agency	Managing Authority: Ministry of Economy Implementing Authority: Lithuanian Business Support Agency		
Supported measures, eligible RUE measures	Reconstruction / Repair of building space heating, hot and tap water systems; sealing or replacement windows, staircase doors; roof big repair or reconstruction incl. extra thermal isolation; glazing of balcony or loggia; thermal isolating and reinforcement of outer walls; sealing of joints of panel buildings; thermal insolating of basement ceiling; elevators big repair or replacement with modern ones; renovation or replacement of building common electrical installation	Refurbishment and renovation of public buildings (built before 1992) seeking to enhance their energy characteristics. Requirement: Recommendation of an energy audit	Refurbishment and renovation of public buildings (built before 1992) seeking to enhance their energy characteristics. Requirement: Recommendation of an energy audit	-refurbishment and renovation of public buildings seeking to enhance their energy characteristics -construction of CHP, renovation of existing CHP, targeted at improving performance - renovation and modernisation of heat boilers supplying district heating - refurbishment of CHP and heat boilers to use renewable energy sources or other environmentally friendly fuels	
Maximum of capital	Not applicable	LT 8 m	LT 4 m		

costs eligible for subsidy/financing					
Required minimum contribution to self-financing	10%	n/a	n/a		
Financing of own contribution	From savings	Not defined	Not defined		
Share of subsidy	Up to 50% depending on energy savings, share of subsidy depends on scope of RUE investment, specific values ("relative energy efficiency points") are assigned to single RUE measures, e.g. -putting extra insulation on all external walls: 16 points -putting extra isolation only on end external walls: 10 points -replacement of more than 80% of windows: 15 points -replacement of less than 80% of windows: 8 points -roof renovation including extra isolation: 5 points, etc. If sum of all energy efficiency points is between 15 and 30 points, public subsidies achieve 30% of investment costs, if sum exceeds 30 points, subsidies are 50% of investment costs.	Co-financing from ERDF and Cohesion Funds: 85%	Co-financing from ERDF and Cohesion Funds: 85%	Co-financing from ERDF and Cohesion Funds: 85%	
max. amount of subsidy per building or flat	Not limited	Not defined	Not defined		
Share of credit at re-	No, credit interest rate is not defined	n/a	n/a		

duced rate of interest in relation to investment costs	clearly in advance, depend on negotiation between customer and bank				
max. amount of credit at reduced rate per flat or building	No	n/a	n/a		
Provision of security for land register (mortgage) required?	No	n/a	n/a		
Terms of awarding subsidy to investment	Min. limit (10 points) of "energy saving points" according to regulation of Ministry of Environment	Guidelines are not announced yet	Guidelines are not announced yet		
Kind of credit (annuity loan or redeemable loan)	Both methods	n/a	n/a		
Duration	Loan duration depends on negotiation between customer and bank, usual duration is 10 to 15 years	n/a	n/a		
Initial rate of interest (1st year)	Vilibor [16]+ 1,5-2,9% (maximum value) Current value of Libor: 6,0-5,98%	n/a	n/a		
Graduated interest during duration (at the time of determination of rate of interest)	According to vilibor value: n/a	n/a	n/a		
Period of determination of rate of interest	According to contract terms with Bank (normally 0,5 years)	n/a	n/a		
Graduated interest during remaining duration (after the time of determination of rate of	According to contract terms with Bank: n/a	n/a	n/a		

[16] Vilibor (Vilnius Interbank Offered Rate) – the interest rate for short term credits between financing institutes.

interest)					
Required securities (land charge)	Loan security is not required or it can be provided by insuring the loan with 5.18% from total loan amount depending on Bank	n/a	n/a		
Groups of owners who can apply	Homeowner association or apartment owners who signed the joint activity contract	n/a	n/a		
Public support only for uniform measures at the building (for joint property)?	Replacement of windows, installation of individual boilers in apartment and heat allocators & thermostatic controls is included as well	n/a	n/a		
Public support also for individual measures involving one or a few flats?	No	n/a	n/a		
Annual extent of programme (average of last two years unless otherwise stated)	LTL 70 m (2007 – 2010)	n/a	n/a		
Duration of the programme	Not limited, up to 2020 at least.	2007-2013	2007-2013		
Is there a strong demand for programmes of public support?	Housing Agency approved 257 projects in 2006. 98 projects from 257 were implemented in 2006.	n/a	n/a		
Do applications exceed extent of programme?	Yes	n/a	n/a		
Main reasons of insufficient use of programme	Programme implementation deteriorated recently due to a lack of public financing	n/a	n/a		
Experience made with programmes of public support (good/ bad, as	Good, but expansion of public subsidies is required	n/a	n/a		

the case may be)					
Standard amount of own funds in %	100%	n/a	n/a		
Duration of obtainable standard bank credit	Immediate	n/a	n/a		
Provision of security for land register (mortgage) required?	No	n/a	n/a		
Kind of credit (annuity loan or redeemable loan)	Both	n/a	n/a		
Initial rate of interest (1st year)	Vilibor + 1,5-2,9% (maximum value)	n/a	n/a		
Graduated interest during duration (at the time of determination of rate of interest)	According to vilibor value	n/a	n/a		
Period of determination of rate of interest	According to contract terms with Bank	n/a	n/a		
Graduated interest during remaining duration (after the time of determination of rate of interest)	According to contract terms with Bank	n/a	n/a		
Required securities (land charge)	Loan security is not required or it can be provided by insuring loan with 5.18% from total loan amount depending on Bank	n/a	n/a		

6.2 Poland

Name of financing instrument	Thermomodernization Programme	Energy Efficiency Programme (GEF)*	Protection of air	Competition for energy savings in municipal heating systems - 2007	Regional OP (2007-2013) -Priority 5: Sustainable environment and energy sector	Regional OP (2007-2013) -Priority 3: Urban and metropolitan functions	OP - Infrastructure and Environment - Priority 10 Environmental-friendly infrastructure	OP - Infrastructure and Environment - Priority 12: Culture and cultural heritage protection and conservation
Kind of public support / financing instrument	Market credit and subsidy	Surety for bank loan (credit guarantee)	Bank loan or / and subsidy / Surety for bank loan	Subsidy	Subsidy	Subsidy	Subsidy	Subsidy
Competent institution	Bank Gospodarstwa Krajowego - BGK(National Economy Bank)	Bank Gospodarstwa Krajowego - BGK(National Economy Bank)	Narodowy Fundusz Ochrony Środowiska (National Fund for Environmental Protection and Water Management)	EkoFundusz (Eco Fund Foundation)	Marshall Offices	Marshall Offices	Ministry of Economy	Ministry of Culture and National Heritage
Supported measures, eligible RUE measures	Thermo modernization of residential and public buildings, refurbishment of DH, replacement of conventional energy sources with RES	Financing of energy audit, EE refurbishment including street lighting,	Investments on energy from RES, subsidies up to 50% of project costs on air protection implemented by medi- and social care institutions, institutions of cultural heritage protection	Retrofitting of heat sources, DH system and end users of 1-50 MW power, biomass fired boiler houses of 500 kW, solar collectors of an area exceeding 50m2	Increase of RES utilization, retrofitting of heat sources, networks, substations, construction of CHP, complex thermo modernization of public buildings	Revitalization activities for rundown residential districts, service areas, post-industrial areas, post-military areas in towns of minimum 35 thous. inhabitants	Revitalization of public buildings, growth of RES utilization	Revitalization of buildings with their surroundings
Max. eligible capital costs	Not defined	Not defined	Not defined	Solar collectors: Max. of PLN 1000 /m2, should not be lower than € 12.500	Max. of € 2 mln	Not defined	Not defined	Not defined
Min. project value	Not defined	Not defined	Minimum loan, in a case that only	See above	€ 250.000	€ 2 m	€ 5 m	€ 1 m

			NFOS loan covers the investment – not lower than € 500,000					
Required min. contribution to self-financing	Min. of 20%	Set by crediting bank granting investment credit, usually 20%	Min. of 10%	Min. of 10%	For local government units 15%	For local government units 15%	Ca. 15%	Ca. 15%
Financing of own contribution	Not defined	Not defined	Not defined	Not defined	not defined	not defined	not defined	not defined
Share of subsidy	25% of credit amount	n.a.	Up to 50%	30%-60%	Up to 85% of eligible costs	Up to 85% of eligible costs	Up to 85% eligible costs	Up to 85% eligible costs
Max. amount of subsidy per building or flat	Not defined	Not defined	n.a.	n.a.	Not defined	Not defined	n.a.	n.a.
Share of credit at reduced rate of interest in relation to investment costs	80%	n.a.	Max 80% of investment costs	n.a.	n.a.	n.a.	n.a.	n.a.
Max. amount of credit at reduced rate per flat or building	Not defined	Amount of bank credit guarantee up to € 500.000	Not defined	n.a.	n.a.	n.a.	n.a.	n.a.
Provision of security for land register (mortgage) required?	Thermomodernization credit depends on amount of credit and rating of the client - mortgage may be required	1% of guaranteed amount for the period up to 1st year, 2% for the period of up to 5 years, add. bank commission for granting the guarantee - 0,2% of guaranteed amount	-	n.a.	n.a.	n.a.	n.a.	n.a.

Terms of awarding subsidy to investment	Energy audit indicating the optimum energy retrofitting solution	Energy audit indicating the optimum energy efficient retrofitting solution	Compliance with a list of priorities for a particular year Submission of application in due time Ecological effect of the project – reduction of SO_2 (min. 5 MG/a) Energy savings over 300 MWh/a and/or modernization of heat source of min. 0,5 MW capacity or establishment of RES of min. capacity of 0,3 MW Timely payment of fees (no overdue payments) for use of natural environment, energy audi	Progress of investment unde 60% Preferred projects resulting in maximum reduction of installed capacity, energy consumption and CO_2-emission Projects of maximum effectiveness in CO_2-reduction in relation to capital expenditures in energy saving measures	Formal criteria (rating: 0-1) Feasibility Criteria (rating: 0-1) Strategic criteria (rating: 0-100 points)		Formal criteria (rating: 0-1) Content-related criteria	
Kind of credit (annuity loan or redeemable loan)	Redeemable loan	Surety (bank credit guarantee) for up to 70% of credit amount	Annuity loan	n.a.	n.a.	n.a.	n.a.	n.a.
Duration	Max. of 10 years	Surety for max. period of 10 years +	Max. of 10 years	n.a.	n.a.	n.a.	n.a.	n.a.

		3 months						
Initial rate of interest (1st year)	Set by Bank Gospodarstwa Krajowego	Set by Bank Gospodarstwa Krajowego - currently (March 2007) at BISE Bank: based on Warsaw Interbank Offered Rate (WIBOR) for 3 months	0,3 - 0,7% of bill of exchange rediscount rate announced by National Bank of Poland (for March 2007- 4,25%)	n.a.	n.a.	n.a.	n.a.	n.a.
Graduated interest during duration (at the time of determination of rate of interest)	Interest rate valid for a given year, set by Bank Gospodarstwa Krajowego	Interest rate valid for a given year, set by Bank Gospodarstwa Krajowego,	0,3 - 0,7% of bill of exchange rediscount rate announced by National Bank of Poland (for March 2007- 4,25%)	n.a.	n.a.	n.a.	n.a.	n.a.
Period of determination of rate of interest	Variable	Variable	Variable	n.a.	n.a.	n.a.	n.a.	n.a.
Graduated interest during remaining duration (after time of determination of rate of interest)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Required securities (land charge)	Ownership title deed, the right of perpetual usufruct or the right to manage the property	Ownership title deed, the right of perpetual usufruct or the right to manage the property	Ownership title deed, the right of perpetual usufruct or the right to manage the property	Ownership title deed, the right of perpetual usufruct or the right to manage the property	Ownership title deed, the right of perpetual usufruct or the right to manage the property	Ownership title deed, the right of perpetual usufruct or the right to manage the property	Ownership title deed, the right of perpetual usufruct or the right to manage the property	Ownership title deed, the right of perpetual usufruct or the right to manage the property

Groups of owners who can apply	Building owner, administrator / Heat source administrator, excluding state budget entities and business sector	Natural and legal persons, local governments, housing cooperatives and ESCO companies	Local governments, state administration, entrepreneurs, other entities	Owners of buildings and heating systems	Local gov., state administration, associations of communes, religious associations, entities of public-private partnership, state forests, excl. housing cooperatives and condominiums	Local gov. + associations, universities, higher education schools, institutions of culture, associations of communes, religious associations, social-economic partners, public financiers entities, entrepreneurs	Entrepreneurs, municipal and public utilities , local governments, state administration	Local gov., church legal persons, institutions of culture, public universities, higher education schools, state archives, NGO
Public support only for uniform measures at the building (for joint property)?	no	no	no	no	no	no	no	no
Public support also for individual measures involv. one or a few flats?	Grant from regional funds for environmental protection on elimination of low CO2 emission by means of energy sources retrofitting	Can be combined with Thermomoderni-zation grant of 25%	no	no	n.a.	n.a.	n.a.	n.a.
Annual extent of programme (average of last two years unless otherwise stated)	Budgetary funds planned (premiums) in 2007: € 62,5 m	Total funds for the program: m 11 $	---	Total funds $ 571 m; € 2,5 m for solar collectors in 2007	2007-2013: € 84 m	2007-2013: € 151,7 m	2007: € 94,3 m 2008: € 110,5 m	2007: € 23,3 m 2008: € 23 m
Programme Duration	At least until 0216	Until 30th June 2011	not defined	1992-2009	2007-2013 First call for thermomoderni-zation: September 2009	2007-2013 First call for rehabilitation: January and September 2008	2007-2013 First Call III Q 2008	2007-2013 First Call May 2008

Is there a strong demand for programmes of public support?	Yes	Little interest in this service, banks are not interested in informing clients about this service	Yes	Yes	Yes	Yes	Yes	Yes
Do applications exceed extent of programme?	Yes – in 2006	Only few applications, do not exceed extent of programme	Yes	Yes	Too early	Too early	Too early	Too early
Main reasons of insufficient use of programme	n.a.	Banks are not interested in informing clients about this service, they prefer to sell investment credits	n.a	n.a	Too early	Too early	Too early	Too early
Experience made with programme (good/ bad, as the case may be)	Good	Little experience	As the case may be	As the case may be	No experience available yet, but procedure for funds acquisition for 2004-2006 programmes was too complicated and lengthy The procedure has been simplified – Regional Marshal Offices have been awarded higher competencies	No experience available yet, but procedure for funds acquisition for 2004-2006 programmes was too complicated and lengthy The procedure has been simplified – Regional Marshal Offices have been awarded higher competencies	No experience available yet, but procedure for funds acquisition for 2004-2006 programmes was too complicated and lengthy	No experience available yet, but procedure for funds acquisition for 2004-2006 programmes was too complicated and lengthy
Initial rate of interest (1st year)	Variable interest based on Warsaw Interbank Offered Rate for 1 month	Single fee for bank guarantee from 1,0% of the guaranteed amount for 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

	(4,2% for March 2007) plus banks margin of up to 5% of credit capital (negotiable- depends on investment)	year to 2% of guaranteed amount for up to 5 years Single fee for awarding bank guarantee for portfolio amounts to 0,2% of the granted limit Other fees and payment costs of establishment of bank guarantees are set by banks awarding them						
Graduated interest during duration at the time of determination of rate of interest	n.a.			n.a.	n.a.	n.a.	n.a.	n.a.
Period of determination of interest rate	n.a.			n.a.	n.a.	n.a.	n.a.	n.a.
Graduated interest during remaining duration (after determination of rate of interest)	n.a.			n.a.	n.a.	n.a.	n.a.	n.a.

Required securities (land charge)	Various securities required such as - 1) mortgage; 2) promissory note; 3) power of attorney to client's investment bank account. It depends on the amount of credit and rating of client	"Blank Bill" Mortgage	Several options are available: Bank guarantee Bill guarantee Pledge on share, stocks or property Lender's own bank bill Mortgage with notary declaration of subjection to execution Bank guarantee+insurance Blocking of an account Cession of receiveables from the borrower's /beneficiary's running bank account	Documents proving lender's own funds Documents proving lender's funds from other sources Information on financial standing of applicant Permission to have the property at the bank's disposal	Surety (Guarantee) Pledge on shares, stocks or property Borrower's own blank bill Borrower's notary declaration of subjection to execution Mortgage with notary declaration of subjection to execution Bank guarantee Insurance of credit agreement	Surety (Guarantee) Pledge on shares, stocks or property Borrower's own blank bill Borrower's notary declaration of subjection to execution Mortgage with notary declaration of subjection to execution Bank guarantee Insurance of credit agreement

*GEF-Global Environmental Facility

6.3 Latvia

Name of financing instrument	State support program for facilitation renovation of dwellings	State support program for facilitation renovation of dwellings	Regional OP (2007-2013) -Priority 4: Quality environment for Life and Economic Activities	Regional OP (2007-2013) - Priority 4.4: Energy Efficiency Housing	Regional OP (2007-2013) - Priority 4.4: Energy Efficiency, Housing	Regional OP (2007-2013) – Priority 4.3 – Socio-Economic Impact of Cultural Environment
Kind of public support / financing instrument	Subsidy for energy audits (appr. 1.120 audits are foreseen)	Subsidies for EE measures (renovation of appr. 310 buildings are foreseen)	Financing from ERDF and national public financing + private financing; Some criteria are not approved yet (February 2008)	Financing from ERDF and national public financing + private financing	Financing from ERDF and national public financing + private financing	Financing from ERDF and national public financing + private financing
Competent institution	Ministry of Economic Affairs	Ministry of Economic Affairs	Ministry of Economic Affairs	Ministry of Economic Affairs	Ministry of Economic Affairs	Ministry of Culture
Supported measures / Eligible RUE measures	Energy audit	EE measures that are certified by energy audit	Measure “Infrastructure of Environmental Protection” supports development of large-scale environmental infrastructure, incl. waste water collection/treatment, water distribution services and management of household and hazardous waste; Assistance for raising efficiency in all stages of heat supply system – production, transmission, distribution – and for the conversion of fuel in order to	- Improvement of heat insulation of multi apartment residential buildings - Sustainability and efficiency of housing and reduction of social tensions in municipalities through investments in housing renovation and energy efficiency	- Improvement of heat insulation of social residential buildings - Sustainability and efficiency of housing and reduction of social tensions in municipalities through investments in housing renovation and energy efficiency	Renovation of objects of important cultural and historical heritage

			use local renewables as well as CHP.			
Max. of capital costs eligible for subsidy/financing						
Required min. contribution to self-financing	2007 – 30% 2008 – 35 % 2009 – 40 % 2010 – 50 %	80%				
Financing of own contribution	Depends on applicant - most probably own resources	Depends on applicant - most probably loan				
Share of subsidy	2007 – 70% 2008 – 65 % 2009 – 60 % 2010 – 50 % of total energy audit costs, but not more than 200LVL per building	Max 20% of total eligible costs				
Max. amount of subsidy per building or flat	Max. of € 284,6 per flat	Not defined	€ 4,3 m for renovation of heat supply systems € 10 m for cogeneration using renewables	€ 10,000 – 200,000 per project	n/a	€ 0,3 – 6 m per project
Share of credit at reduced rate of interest in relation to investment costs	Not defined	Not defined				
Max. amount of credit at reduced rate per flat or building	n/a	n/a				
Provision of security for land register (mortgage) required?	Not always required	Not always required				
Terms of awarding subsidy to investment	Open tender	Open tender				
Kind of credit (annuity loan or re-	-	-				

deemable loan)						
Duration	-	-				
Initial rate of interest (1st year)	-	-				
Graduated interest during duration (at the time of determination of rate of interest)	-	-				
Period of determination of rate of interest	-	-				
Graduated interest during remaining duration (after the time of determination of rate of interest)	-	-				
Required securities (land charge)	-	-				
Groups of owners who can apply	Associations or apartment owners	Associations or apartment owners	- Municipal areas where activities are being implemented; residents living in the areas, - Companies and institutions situated in the areas, as well as other Latvian residents in general; - Utilities regardless of their form of ownership; - Municipal institutions providing public services; - Other heat and electricity users.	Apartment owners of multi-apartment residential buildings and tenants of social residential buildings.	Municipalities of Latvia	- Residents of Latvia - Municipalities
Public support only for uniform measures at the building (for joint property)?	Yes	Yes				

Public support also for individual measures involving one or a few flats?	No	No				
Annual extent of programme (av. of last two years unless otherwise stated)	Total - € 319,000	Total - € 9.4 m		€ 13.09 m (Plan for year 2007)	n/a	€ 3.6m (Plan for year 2007)
Duration of the programme	2007 – 2010	2007 - 2010		2007-2013	2007-2013	2007-2013
Is there a strong demand for programmes of public support?	Great demand expected	Great demand expected		Great demand expected	Great demand expected	Great demand expected
Do applications for public support exceed the extent of programmes?	n/a	n/a				
Main reasons of insufficient use of programme	n/a	n/a				
Experience made with programmes of public support (good/ bad, as the case may be)	n/a	n/a		n/a	n/a	3 PHARE projects (2003)
Standard amount of own funds in %	-	-				
Duration of standard bank credit	-	-				
Provision of security for land register (mortgage) required?	-	-				
Kind of credit (annuity loan or redeemable loan)	-	-				
Initial rate of interest (1st year)	-	-				
Graduated interest during duration (at the time of determination of rate of interest)	-	-				
Period of determination of rate of interest	-	-				
Graduated interest during remaining duration (after the time of determination of rate of interest)	-	-				
Required securities (land charge)	-	-				

6.4 Slovenia

Name of financing instrument	Subsidies for use of renewable energy sources in households	Subsidies for energy efficient retrofit of existent multiapartment buildings (of at least 9 apartments)	Eco-loans for citizens for implementation of RES and RUE measures	Eco-loans for citizens for implementation of RES and RUE measures 2008	Eco-loans for legal entities and self-employed people for implementation of RES and RUE measures 2008	Subsidies for building owners and investors for energy efficient buildings 2008	OP - Environment and Transport Infra-structure (€ 1.636 m) - Priority g: Sustainable Use of Energy (EU cohesion: € 160 m, € 28 m national sources, € 560 m private)
Kind of public support / financing instrument	Subsidies	Subsidies	Loans	Loans	Loans	Subsidies	Subsidies
Competent institution	Ministry of Environment and Spatial Planning	Ministry of Environment and Spatial Planning	Eco Fund, public fund	Eco Fund, public fund	Eco Fund, public fund	Eco Fund, public fund	
Supported measures / Eligible RUE measures	(A) Solar collector systems for DHW, (B) heat pumps, (C) PV systems for electricity generation, (D) biomass boilers	(A) Installation of equipment for distribution and clearing of costs for heating; (B) installation of thermostat valves AND hydraulic balancing of the heating system; (C) thermal insulation of existent buildings (glazing, windows, opaque building envelope)	(A) Systems and devices for heating and DHW, (B) RES (solar systems, heat pumps, biomass, RES electricity), (C) EE retrofit (windows, doors, thermal insulation of building envelope), (D) Low energy houses, (E) Purchase of EE household appliances, (F) Purchase of environment-friendly vehicles, (G) Draining and purification of waste	(A) Systems and devices for heating and DHW, (B) RES (solar systems for heating and DHW, heat pumps for geothermal energy, biomass, RES electricity), (C) EE retrofit (doors and windows U < 1,4 W/m2K, glazing U < 1,1W/m2K, thermal insulation of building envelope: wall >10 cm, roof >20 cm, basement > 5 cm), (D) Construction of low energy houses with coefficient of	(A) Installation of modern systems for heating and DHW, installation of RES systems, co-generation, other RUE measures in production and office buildings; purchase of electric or hybrid vehicles; construction of low-energy buildings (B) Reduction of other emissions to the air, conservation of water, waste management (contemporary methods of collection, sorting,	Pre-announced subsidised measures (official call expected in late May 2008) (A) Integral energy refurbishment of buildings (thermal insulation, windows, heating system renovation); biomass boilers, heat pumps, condensing boilers, heat recovery; (B) Construction of low-energy (< 30 kWh/m^{2}a for heating) and passive (<	Priorities: (A) Energy efficient construction and refurbishment of public buildings, (B) Energy efficient use of electricity (industry, public, tertiary sector), (C) Innovative systems for local energy supply, (D) Pilot cases, Energy Advisory Network, information, education (Operative documents expected later in 2008)

			water, (H) Removal and disposal of hazardous construction materials, (I) Efficient water supply, (J) Tap water supply outside public grid systems	specific transmission losses (=average U) < 0,25 W/m2K), (E) Purchase of EE household appliances, (F) Purchase of environment-friendly vehicles, (G) Draining and purification of waste water, (H) Removal and disposal of hazardous construction materials, (I) Efficient water supply, (J) Tap water supply outside public grid systems	recycling, and reuse) (C) Waste water draining, renovation of water conduits to reduce water losses	15 kWh/m^2a for heating) houses; (C) Installation of thermo-solar systems for DHW and heating	
Max. of capital costs eligible for subsidy/financing	(A) Solar collectors: 125 €/m2, max e 2.100 per system; (B) heat pumps: 40% or max. € 2.100 ; (C) PV systems: 2.5 €/Wp, max. € 2.100, (D) biomass boilers: up to 40% or € 1.250 (log), € 1.675 (pellets), € 2.100 (chopped firewood)	(A) 8 €/device and 40 €/flat, but max. 30% of investment costs; (B) 20 €/radiator, but max. 30% of investment costs, plus max. 50% of project costs; (C) 5 €/m2 (envelope+glazing) and 25 €/m2 of windows (Umax requirements set for all components), but max. 20%	Annual fixed interest rate: 3,9 %; redemption period up to 10 years; ELIGIBLE LOAN: Up to 90% of investment costs, upper limit set to € 20.000 (€ 40.000 for (D), (B/4), and combination of at least 3 measures from (A), (B), (C), (G), (H), (I) and (J))	Amounts vary; for example: (A) investment cost (B) investment cost (C) investment cost if Uglazing<0,9 W/m2K or Uwindow < 1,1 W/m2K or thermal insulation of walls > 12 cm, otherwise 80% of investment cost (D) 30% of invest-	Eligible single loan amount: up to max 2 million €; interest rate: 3-months EURIBOR +0,3%; redemption period: up to 15 years; ELIGIBLE LOAN: up to 90% of eligible investment costs for (1), up to 80% of	(1) Up to 25% of costs, but max 9.000 €; (2) For passive houses constructed with bio-materials: equal to additional investment compared to standard construction, i.e. 125 €/m2, but max 25.000 €; for others: propor-	

		of investment costs		ment costs for construction of LEH; purchase and installation of materials and products; … Annual fixed interest rate: 3,9 %; redemption period up to 10 years;	eligible investment costs for (2), and up to 50% of eligible investment costs for (3)	tionally less, has yet to be announced; (3) Up to 25% of costs, but 150 €/m2 for flat collectors, and 200 €/m2 for vacuum collectors	
Required min. contribution to self-financing	60% in general	(A) 70%; (B) 70% and 50%; (C) 80%	10% in general	See above	10% for (1), 20% for (2), and 50% for (3)	(1) up to 75%; (2) n/a (3) up to 75%	
Financing of own contribution	Own sources, market credits, eco-loans	Own sources, market credits, eco-loans	Own sources, market credits, also subsidies (no exclusion system)	Own sources, market credits, also subsidies (no exclusion system)	Own sources, bank credits, …	Own sources, bank credits, eco-loans	
Share of subsidy	Up to 40% in general: (A) solar collectors: 125 €/m2, max 2.100 € per system; (B) heat pumps: 40% or max. € 2.100; C) PV systems: 2.5 €/Wp, max. € 2.100, (D) biomass boilers: up to 40% or € 1.250 (log), € 1.675 (pellets), € 2.100 (chopped firewood)	(A) Max. 30% of investment costs; (B) max. 30% of investment costs, plus max. 50% of the project costs (project for hydraulic balancing); (C) max. 20% of investment costs	n/a	n/a	n/a	(A) Up to 25% of costs, but max 9.000 €; (B) For passive houses constructed with bio-materials: equal to additional investment compared to standard construction, i.e. 125 €/m2, but max 25.000 €; for others: proportionally less, has yet to be announced; (C) Up to 25% of costs, but 150 €/m2	

						for flat collectors, and 200 €/m2 for vacuum collectors	
Max. amount of subsidy per building or flat	€ 2.100 in general (see details above about biomass boilers)	Depending on investment costs (in %; see above)	n/a	n/a	n/a	See above	
Share of credit at reduced rate of interest in relation to investment costs	n/a	n/a	NOTE: No subsidized interest rates available at the moment	NOTE: No subsidized interest rates available at the moment	n/a	n/a	
Max. amount of credit at reduced rate per flat or building	n/a	n/a	-	-	n/a	n/a	
Provision of security for land register (mortgage) required?	No	no	no; usual credit ability required plus insurance of the loan	no; usual credit ability required plus insurance of the loan	one of 7 options of possible credit insurances	to be announced	
Terms of awarding subsidy to investment	May vary; usually: proof of purchase or installation (receipt), sometimes photo evidence	May vary; usually: proof of purchase or installation (receipt), sometimes photo evidence	May vary; usually: proof of purchase or installation (receipt), calculation check by energy advisors, sometimes photo evidence …	May vary; usually: proof of purchase or installation (receipt), calculation check by energy advisors, sometimes photo evidence …		to be announced	
Kind of credit (annuity loan or redeemable loan)	-	-	annuity	annuity	annuity	-	
Duration	-	-	max 10 years	max 10 years		-	
Initial rate of interest (1st yea[r)]	-	-	3,90%; fixed	3,90%; fixed nominal annual interest rate	3-months EURIBOR +0,3%; = lowest annual interest rate	-	

Graduated interest during duration (at the time of determination of rate of interest)	-	-	-	See above	See above	-	
Period of determination of rate of interest	-	-	-	See above	See above	-	
Graduated interest during remaining duration (after the time of determination of rate of interest)	-	-	-	See above	See above	-	
Required securities (land charge)	no	no	no; usual credit ability required plus insurance of the loan	no; usual credit ability required plus insurance of the loan	7 options of credit security possible (insurance, mortgage, surety, …)	To be announced	
Groups of owners who can apply	Households	Building management company on behalf of building owners (proviso: at least 9-apartment building), or individual owner of a building; NOTE: legal entities as building (co-)owners are not entitled to subsidy	Individuals (owners and tenants)	Individuals (owners and their relatives, and tenants), association of owners of a particular building	Companies, legal entities, self-employed	To be announced	
Public support only for uniform measures at the building (for joint property)?	-	Yes	-	Yes	n/a	Yes, see also above	
Public support also for individual measures involving one or a few flats?	Yes	-	Yes	Yes	n/a	Theoretically for (3)	

Annual extent of programme (average of last two years unless otherwise stated)	€ 1,2 m (for two years)	€ 205.000	€ 10 m	€ 12 m	€ 14 m	€ 7.5 m	
Duration of the programme	2007-2008	2007	2007	2008 – 30/1/2009	2008	2008 (part of the National action plan for energy efficiency 2008-2016)	
Is there a strong demand for programme?	Yes	Yes	Yes	Yes	Yes	Yes	
Do applications exceed the extent of programme?	Usually	Usually	Usually	Usually	Usually	n/a	
Main reasons of insufficient use of programme	n/a (remark: the only minus is that the demand usually exceeds available funding; some people find the procedure (documentation) too complicated for certain items)	n/a (remark: the only minus is that the demand usually exceeds available funding; some people find the procedure (documentation) too complicated for certain items)	n/a (remark: the only minus is that the demand usually exceeds available funding; some people find the procedure (documentation) too complicated for certain items)	Only recently announced (1/2/2008), successful implementation expected	Only recently announced (14/3/2008), successful implementation expected	n/a	
Experience made with programme (good/ bad, as the case may be)	good	good	good	From past similar programmes: good	From past similar programmes: good	From past similar programmes: good	
Bank loans for individuals and companies							
		Individuals	Companies				

Standard amount of own funds in %	-	Own funds not required	At least 50% (new companies), other 30%				
Duration of obtainable standard bank credit	-	Residential credits: 1-20 years, 10-30 years in case of mortgage credits	Up to 7 years for long-term credits for investments in national currency				
Provision of security for land register (mortgage) required?	-	Not obligatory, depending on type of credit; average mortgage costs 1.5% of credit amount. Other required forms of security provision: Fire insurance for residential buildings (rate according to building category: average 0.065%; in general from 0.030 to 0.340% (highest risk))	As with individuals; mortgage costs for office and similar buildings usually higher than in case of residential buildings. Other security requirements for office (and similar) buildings vary, depending on insurance company conditions.				
Kind of credit (annuity loan or redeemable loan)	-	Usually annuity loans	Usually redeemable loans				
Initial rate of interest (1st year)	-	5.1% to 6.4% (EURIBOR + 1.5% to EURIBOR + 2.8%)	EURIBOR + 1% to EURIBOR + 2.7%				
Graduated interest during duration (at the time of determination of rate of interest)	-	According to variations of reference interest rate EURIBOR	According to variations of reference interest rate EURIBOR				
Period of determination of rate of interest	-	Interest rate variable, bound to 6-months	Bid-dependent, bound to EURIBOR				

		EURIBOR					
Graduated interest during remaining duration (after the time of determination of rate of interest)	-	EURIBOR as on 31 March and 30 September, valid for next 6 months	EURIBOR as on 2 days before credit exploitation, valid for next 6 months				
Required securities (land charge)	-	Insurance, surety, mortgage	Mortgage, other (individual conditions)				

6.5 Czech Republic

Name of financing instrument	FINESA - Financing of Energy Saving Applications / Public support No 1	EFEKT Programme - Financial subsidies for implementation of energy savings equipments / Public support No 2	Regional OP (2007-2013) - Priority [?]: Sustainable environment and energy sector	Regional OP (2007-2013) - Priority [?]: Urban and metropolitan functions	OP - Infrastructure and Environment - Priority [?] Environmental-friendly infrastructure	OP - Infrastructure and Environment - Priority [?]: Culture and cultural heritage protection and conservation
Kind of public support / financing instrument	Subsidy covering interest	Direct subsidy				
Competent institution	World Bank and Ceska sporitelna (Czech Saving Bank)	Czech Energy Agency				
Supported measures / Eligible RUE measures	Energy saving measures [What kind of measures are supported, please add examples!]	Energy saving measures [What kind of measures are supported, please add examples!]				
Max. of eligible capital costs	Not defined	Max. of CZK 2,8 Mio (i.e. appr. € 104.000) according to type of programme				
Required min. contribution to self-financing	Individual	20%				
Financing of own contribution	Individual	Not mandatory				
Share of subsidy	-	Max. 80% of investments				
Max. amount of subsidy per building or flat	-	Not defined				
Share of credit at reduced rate of interest in relation to in-	0 %	-				

vestment costs						
Max. amount of credit at reduced rate per flat or building	0 %	-				
Provision of security for land register (mortgage) required?	No	-				
Terms of awarding subsidy to investment	No	-				
Kind of credit (annuity loan or redeemable loan)	Redeemable loan	-				
Duration	5-7 years	-				
Initial rate of interest (1st year)	The same all period	-				
Graduated interest during duration (at the time of determination of rate of interest)	Fix and variable rate	-				
Period of determination of rate of interest	1/4 of year	-				
Graduated interest during remaining duration (after the time of determination of rate of interest)	No	-				
Required securities (land charge)	No	-				
Groups of owners who can apply	Private companies (esp. SMC)	Municipalities, private companies, cooperatives etc.				
Public support only for uniform measures at	Yes	Yes				

the building (for joint property)?						
Public support for indiv. measures for one or a few flats?	No	No				
Annual extent of programme (average of last two years unless otherwise stated)	Not accessible	CZK 100 m (appr. € 3,7 m)				
Duration of the programme	Not defined	Year by Year (2003-2007)				
Is there a strong demand for programmes of public support?	Sufficient offer	Overhanging demand				
Do applications for public support exceed the extent of programmes?	No	No				
Main reasons of insufficient program implementation	No reason	Lack of financial support				
Experience with programmes (good/ bad, as the case may be)	Good	Good				
Graduated interest during remaining duration (determination of rate of interest)	-	-				
Required securities (land charge)	-	-				

6.6 Crete

Name of financing instrument	Bank Loan for any building	Bank Loan with interest rate subsidy	State subsidies on investment capital. Not offered continuously, depending on availability of European structural funds.	Regional OP (2007-2013) -Priority 5: Sustainable environment and energy sector Operational Energy Programme "ANTAGONISTIKOTITA"	Regional OP (2007-2013) -Priority 3: Urban and metropolitan functions	OP - Infrastructure and Environment - Priority 10 Environmental-friendly infrastructure	OP - Infrastructure and Environment - Priority 12: Culture and cultural heritage protection and conservation
Kind of public support / financing instrument	No subsidy	30 % subsidy of interest rate only for low-income families with more than 3 children for their first home	Capital subsidy only for buildings belonging to companies and not for private houses, flats and municipalities.	No available data	No available data	No available data	No available data
Competent institution	All commercial banks	All commercial banks	Public organizations like Ministry of Economy, Ministry of Development				
Supported measures / Eligible RUE measures	Usually 70 % of investment costs	Usually 100 % of investment	Usually 100% of investment costs , depending on programme				
Max. of eligible capital costs	No limit, depends on income	No limit, depends on income	Depends on action, usually 30-50 % of investment				
Required min. contribution to self-financing	100%	100%	40%				
Financing of own contribution	30%	70%	50-70%				
Share of subsidy	-	30% of interest rate	25-40%				
Max. amount of subsidy per building or flat	-	-	depends on case				

Share of credit at reduced rate of interest in relation to investment costs	-	100%	-				
Max. amount of credit at reduced rate per flat or building	-	Depending on case	-				
Provision of security for land register (mortgage) required?	yes	yes	-				
Terms of awarding subsidy to investment	- Only for families with more than 4 children or very low-income	Low income multi children family	-				
Kind of credit (annuity loan or redeemable loan)	-	Reedemable loan	-				
Duration	-	8 years	-				
Initial rate of interest (1st year)	-	70% of the current rates	-				
Graduated interest during duration (at the time of determination of rate of interest)	-	Current rate	-				
Period of determination of rate of interest	-	-	-				
Graduated interest during remaining duration (after the time of determination of rate of interest)	-	-	-				
Required securities (land charge)	-	Yes	-				

Groups of owners who can apply	-	-	Companies				
Public support only for uniform measures at the building (for joint property)?	-	No	No				
Public support also for individual measures involving one or a few flats?	-	Yes	Yes				
Annual extent of programme (average of last two years unless otherwise stated)	-	-	No subsidies available in next months				
Duration of the programme	-	-	2007-2013				
Is there strong demand for programme?	-	-	Yes				
Do applications exceed extent programme?	-	-	No				
Main reasons of insufficient use of programme	-	-	Lack of information				
Experience made with programmes of public support (good/ bad, as the case may be)	-	-	Depending on case				
Standard amount of own funds in %	-	-	-				
Duration of obtainable standard bank credit	-	-	-				

Provision of security for land register (mortgage) required?	Yes	Yes	-				
Kind of credit (annuity loan or redeemable loan)	-	Redeemable loan	-				
Initial rate of interest (1st year)	-	-	-				
Graduated interest during duration (at the time of determination of rate of interest)	-	-	-				
Period of determination of rate of interest	-	-	-				
Graduated interest during remaining duration (after the time of determination of rate of interest)	-	-	-				
Required securities (land charge)	-	-	-				

7 Institutional, Financial, Economic and Legal Barriers

	Lithuania	Czech Republic	Latvia	Slovenia	Region of Crete	Poland
Institutional Barriers						
In general	No barriers	Low awareness and stimulation	Low awareness and stimulation	Considerably high level of public awareness on EE, house owners are well informed on benefits of EE investments. The national energy advisory network is well established and widespread, offering information also regarding funding possibilities. The only noticeable barrier evolves from the privatisation of building stock - mainly flats in multi-apartment buildings - in early 1990s, which shifted financial responsibility for maintenance and renovation to individual owners. Very often, the financial status of the owners is not yet adequate; at least some of the sources is to be collected over a longer period within the so-called "reserve fund", which is to be established (Housing Act: Obligatory monthly contribution, the	Complicated decision making procedures, lack of support from financial institutions for preparation of bankable projects	Weak presence of ESCOs on the market, procedures for obtaining funds are too long and complicated
For HOA	No barriers	Low awareness and stimulation	Complicated decision-making procedures		Complicated decision making procedures.	Loan guarantees and securities, too complicated ownership structure (mixed ownership: communal and private)
For residential building cooperatives	-	Low awareness and stimulation	Complicated decision-making procedures		Complicated decision making procedures.	Necessity of adopting resolutions on obtaining bank loans and launching an investment process
For private building cooperatives	-	Low awareness and stimulation	Complicated decision-making procedures		Complicated decision making procedures.	-
For municipalities	No barriers	Frequent non-standard behaviour	No barriers		Lack of support from financial institutions for preparation of bankable projects.	Time-consuming preparatory stage for investment process (requirement to incorporate a particular investment into Multiyear Investment Plan)
For ESCOs	-	Difficulties to operate ESCO	Public sector misses good examples and therefore is rather reluctant for PPP type of projects implementation		Not existent	Legal regulations practically ruling out ESCOs from the market which is subject to the Energy Law (for capacity larger than 5 MW a

				amount depending on owner's share, and on the age and condition of the building). In some cases the legally prescribed consensus of the owners to more demanding renovations can represent a problem.		licence and heat tariff is obligatory, not possible to share savings) Public Procurement and PPP Laws act against EPC
For others	-	-	-		Complicated decision making procedures, lack of support from financial institutions for preparation of bankable projects	No access to EU funds on thermomodernization for industry sector: For this sector support is dedicated to improvements in heat and energy, and CHP construction.
Comments	-	Owner/investor vs. operator dilemma and low level of know-how.	-			
Financial and Economic Barriers						
In general	Gov. appointed LTL 70 m. (2007-2010)	Without serious barriers, but other priorities	High risks	No severe barriers to financing of EER measures. Available financial sources depend on State budget and private sources. Some funding possibilities (subsidies, loans) can be combined. Market competition is gradually favouring conditions for bank loans.	Very low energy prices, high level of energy regulation No subsidies schemes for house or flat owners	Lack of financial instruments Low profitability of RES utilisation without public support, low price of heat generated from coal

For house owner associations	Gov. appointed LTL 70 m. (2007-2010) Problem: Subsidies for space heating and hot water for "low-income families"	Without serious barriers, but other priorities			Very low energy prices. high level of energy regulation No subsidies schemes for house or flat owners	Too few opportunities for obtaining bank loans Bank loans are too expansive, technical documentation too bureaucratic
For residential building cooperatives	-	Misty ownership (guarantees) and other priorities			Very low energy prices. high level of energy regulation No subsidies schemes for house or flat owners	Too few financial instruments, very high investment expenditures large multi-family buildings)
For private building cooperatives	-	Without serious barriers, but other priorities	Not all inhabitants are ready for credit payments that are necessary to finance renovation projects		Very low energy prices. high level of energy regulation No subsidies schemes for house or flat owners	Too few financial instruments, very high investment expenditures large multi-family buildings)
For municipalities	Gov. appointed LTL 70 m (2007-2010) Limited borrowing, other priorities	Without serious barriers, but other priorities and non-standard behaviour	Limited borrowing limits		Very low energy prices. high level of energy regulation No subsidies schemes for municipalities	Own funds are lacking, no possibilities to obtaining bank loans Obligation to feasibility studies and technical documentation with their own funds before receiving funding from structural funds
For ESCOs	No barriers, but long payback-period on investments	Difficult availability of loan (smaller ESCOs), High indebtedness (effort to sell liabilities)	Banks are not eager to provide financing due to unclear conditions		They do not exist	Presence of ESCO on the market is too weak Long payback period on complex refurbishments Banks do not consider future energy savings as

						loan security
For others	Problem: Heating subsidies to "low-income families" living in apartment buildings, refurbishment of single-family houses not subsidized by government				Very low energy prices. high level of energy regulation No subsidies schemes for house or flat owners	Too few financial instruments Too expansive bank loans
Loan Security	Cap of max. loan of 70% value (in exception of 100%) of property being, in case of apartment building refurbishment including a Government subsidy, loan can be obtained without any loan security	Limited right to dispose of the building	Banks offer loans without security against foreseen cash flow that will cover also repayment of loan and interest, But: In this case at least 75% of apartment owners must agree to take this loan (restrictive obstacle)	Insurance costs: e.g. fire insurance, rate accord. to building category: 0,065%-0,340%, surety, mortgage, individual arrangements; no specific difficulties, except in cases of mortgage credits when an existing building is not yet enrolled into register/cataster		Poor equity base, undercharged funding for retrofitting Consequently the loan often cannot be offered to home owners as the funds are accumulated in the refurbishment funds, which is a bank guarantee, are not sufficient or it is [?] necessary to transfer the bank account of HOA to the bank awarding the loan
Banking sector, additional loaning fees	6 local banks offering loans on apartment refurbishment, two of them providing loans without demanding loan security, guarantee at other 4 banks is insurance payment adding costs of 5,18% on total loan amount		Almost all local banks are offering loans on apartment refurbishment, but approx. 5 main banks are specialised and issue loans based on foreseen cash flow as security	--	All banks are specialised on loans for apartment refurbishment	21 banks specialise in loans for apartmernt refurbishment

Legal Barriers						
In general	No barriers	Public tendering procedure	-	Technical regulation on EE in building is quite sharp and includes requirements in case of reconstruction or major renovation. Legal requirements for multi-apartment buildings, which include an appointed building manager, who prepares annual and long-term plans for investments, including retrofit.	No national policy in energy efficiency. EU directive 2002/91/EC is not yet transposed. No regulation on max. consumption of energy in buildings, exemption Law 3299/04, but: Law 3299/04 only concerns private in-vestment in enterprises. Municipal, public buil-dings, multi-flat residential apartments and small private buildings cannot be subsidized. Law 3299/04 only subsidises investments in industrial buildings or hotels. Additional funding available from OP "ANTAGONISTIKOTITA" (Ministry of Development) utilizing EU structural funds (2007-2013))	The set of legal regulations on energy certificates is still incomplete and therefore the system of energy certificates can not be implemented yet. Problem: Public Procurement Procedures PPP Law, formally existing, does not function due to strict requirements and unclear share of benefits (no single PPP project in the country)
For HOA	No barriers	Low legal stimulation	-		EU-regulations in multiflat buildings do not favour EE investments, subsidies are only offered to industrial and commercial enterprises or to family-owned block of flats	s. "in general"

For residential building cooperatives	-	Low legal stimulation	A min. of 75% of apartment owners must agree to take loan and to start whole renovation of dwelling (required of bank case of no additional security)		s. “in general”	s. “in general”
For private building coop.	-	Low legal stimulation	-		s. “in general”	s. “in general”
For municipalities		Public tendering procedure	-		Public finance regulations do not favour energy efficiency improvements, municipalities are not eligible	s. “in general”
For ESCOs		Public tendering procedure	PPP-regulation under discussion		Not existent	Weak support for ESCOs
For Others	-	-	-		Lack of information for private home owners on benefits of RUE	s. “in general”

8 Status of Implementation of Basel II regulations for credit users and banks

	Lithuania	Czech Republic	Latvia	Slovenia	Region of Crete	Poland
General description of status	[?]	According to research (from 2006), only 12% of Czech companies are preparing for Basel II. According to quantitative impact study (QIS5): FI's are ready to implement BASEL II system	Banks' credit policies are developed and up-dated according to requirements set - including Basel II regulations Supervision is executed by the Financial and Capital Market Commission (http://www.fktk.lv/eng/)	Approved credit represents a risk to the bank - possibility of debtor not being able to fulfil financial obligations. Apart from numerical criteria (various certificates, lists etc.) several subjective criteria are important (credence, suitable personnel and knowledge in case of companies ...). According to statistic models, at least eight bonus classes have to be formulated by the bank (Basel II requirement).	FI's are in initial stage to apply BASEL II regulations. Regulations are supposed to affect credit users, because banks in Greece are lending (rather offering money) money to users without following usual bank procedures and are taking many risks. At the same time credit users already have many difficulties to pay back their obligations to banks. FI's are trying to use the BASEL II regulations during their operation	Banks are preparing for Basel II. Over 80% of banks are working on the implementation of BASEL II regulations. Procedures for credit worthiness will be modified, SME will be classified differently than before. New agreements will be implemented by end of 2007. However, FI's Basel II regulations have not been implemented yet
What is the common rating for "normal" credit user?	-	Common rating for normal credit user uses following data: Financial requirement planning of company (permanent available means), business plan (business strategy, aims, market analyse), budgetary plan (time horizon 1 year), controlling, right accounting, dialog with bank, stabilization by own capital, assets control, finance	-	Individuals: 1/3 of av net monthly salary (or pension) in last three months, minus deductions in last month. Basis for determination of credit capability can be higher than this amount, if av net monthly salary (or pension) in last three months exceeded € 500 (mortgage credit) or € 625 (other credits), but not above 60% of av net	-	Common rating for usual credit user involves following data: Financial requirement planning of company (permanent available means) Business Plan (business strategy, aims, market analysis)

		structure		monthly salary (or pension) in last three months. The remaining part of income must be equal or exceed the net min. salary (public statistical data) for regular bank clients, and net minimum salary + € 20 for non-clients. For companies a detailed investment plan is required, assessment of credit capability is more comprehensive.		Budgetary Plan (time horizon: 1 year) Others: Controlling, Right Accounting, Dialogue with bank, Stabilization by own capital, Assets Control, Finance Structure
How is the rating organised, which are the main criteria for rating?	-	Financial indicators, qualitative indicators and reaching right number for: EBITDA - Earnings before depreciation, amortization, interest and taxes; EBIT - earnings before interest and taxes; EBT - earnings before taxes; ROS - return on sales; ROE - return on equity, ROA - return on assets; ROCE - return on capital employed; ROI - return on investment; Dept ratio, Dept equity ratio.	-	Apart from the above: Individuals: depending on the regular income (salary, pension), of the insurance type, in case of the mortgage credit also depending on other sources of income (royalties, fees, rent etc.) Companies: various statistical data, insurance quality.	-	Apart from the above: Individuals: depending on the regular income (salary, pension), of the insurance type In case of mortgage credit also depending on other sources of income, royalties, fees, rent, etc.) Companies: Various statistical data, insurance quality
Are there implications for small energy project due to BASEL II regulations?	-	No. It is common solution.	-	Yes, if part of credit agreement.	No	No experience yet

What is the current rating for the main FI's?	-	It is mostly private information and very individual matter of every financial institution.	Some examples: Latvian Land and Mortgage bank - Moody's Investors Service Limited: – for long-term foreign currency bank deposits A2 – short-term foreign currency bank deposits P-1 – the domestic currency mortgage bonds issued by Mortgage Bank have been rated at A – the financial strength rating is D- Hansabank - Group's: – deposit ratings A1/P-1 – the senior unsecured debt rating A1 – the subordinated debt rating A2 More detailed information is available on concerte bank's www page	Current legislation prescribes 5 bonus classes (A-E). Each bank classifies the clients into tariff groups, and formulates credit conditions accordingly. Type of credit insurance plays an important role here.	-	-

9 Conclusion and recommendation

In general, all financing instruments to spur investment in building energy retrofit should comply with following characteristics as far as possible:

- Being as simple, understandable and transparent,
- Being affordable to relevant target group (and accordingly sufficiently specified),
- Prescribe best available but proven technology.

9.1 Minimum Technical Standards

Technical standards should be defined and reviewed regularly on what are best available and proven technologies. Concentrating financial support to such technologies will help to develop an energy efficiency market. The level and type of a subsidy must be handled in a way adapted to the specific interest of the target group. The effort and time to be spent for information and administration must be kept at a low level. In many cases, standard measures will achieve desired result. A full audit will not be required. Given that decisions for investment activities are made on a long term basis, the reliability and longevity of support must be guaranteed without losing the aim to offer any assistance in a competitive environment.

To ensure that projects achieve their energy and cost saving targets, minimum technical standard requirements should be enacted in all programmes. Simple verification procedures like the presentation of bills, which specify installed equipment should be integrated. The definition of adequate minimum technical standards in combination with effortless verification requirements help to reduce overall transaction costs. Standard measures following the minimum technical standards can be put on a fast track application line and increase the number of projects that can be processed by the organisations administering the subsidies programmes or soft loan credit line. High transaction costs, reflected in time and effort that is required for receiving funding and subsidies may otherwise prevent project implementation.

9.2 Structure of Subsidies

Subsidies are to increase individual incentives to invest in building refurbishment. To this objective, subsidies (e.g. loans) must be affordable and transparent. Many programmes offer subsidies for a certain percentage of total costs or support a small part of total costs in form of a grant. In both cases, the rest of the financing remains an unanswered question. High interest rates for this “rest” may nullify the impact of subsidies and prevent investment decision.

Programmes that focus on lowering overall capital costs may possibly be more effective. Additionally, lower interest rates on full investment costs, which can be provided through soft loan programmes, may also have a wider impact. A further financial instrument to ease the need for credit securities can be guarantees. Guarantees can support low-income households to obtain loans and thus benefit from retrofitting programmes. In comparison to standard bank products, loans for energy efficient refurbishment should provide for more flexibility, e.g. with regard to loan duration (5yrs, 10yrs, 15 yrs). Generally any loan conditions should be commercial but not nullifying the subsidy given by the state. Usually, high initial costs for energy efficiency investments are an insurmountable obstacle to obtain a credit/loan. Therefore the terms and conditions for lending should ensure some flexibility in case of loan repayments (e.g. 50% of repayment during implementation, other 50% when implementation is completed).

9.3 Information and Capacity

All new programmes and instruments should be communicated well in advance and adapted to the target group (e.g. private building owners, house owner associations, etc.). Technical assistance and continued information, also on progressing technological development, are essential ingredients for successful implementation. The information needs to address fears and expectations of the target group. It also needs to be accompanied with a central contact point that is available for exchange. A second element of information and capacity is technical assistance (TA) during project development and implementation.

A specific problem of information is related to financial institutions that in many cases do not dispose over sufficient technological expertise to calculate adequately long-term investments and their return for measures into energy efficiency. The uncertain development of future energy process is a specific part of the problem. As consequence, financial institutions should be assisted to better comprehend and assess the market potential for energy efficiency investments (see also 10.5.1). This can be achieved through technological information, which could be carried out by local/regional ESCO's, but also with the support of public administration (via public programmes). Due to the fact that large budgets are available from EU's structural policy (e.g. regional operational programmes), it should be investigated if possibilities exist to fund projects targeted at improving the knowledge and cooperation between financial institutions, ESCO's and project owners.

9.4 Related barriers

Apart from strengthening the options for private financing of energy efficiency investments, another barrier that needs to be addressed on the government level includes subsidies that can nullify activities to spur interest in energy efficiency and therefore need consideration in programme development. These programmes can include

- Subsidies for space heating costs
- Subsidised energy prices
- Ownership /rental laws [owner- user dilemma]

Removing these barriers requires case- and country-specific analysis of existing regulatory framework. General recommendations can hardly be offered, because respective actor-constellations and possible resistance against removing these regulations have to be taken into account.

9.5 Actor-oriented conclusions

In addition to general advices, more specified recommendations can be derived out of mentioned projects in relation to several actors participating in the implementation process of building retrofitting. Subsequent actor groups are perceived as being significant: Financial institutions, consumers, project developers, ESCO's, public administration and EU.

9.5.1 Financial Institutions

At the core of interest to improving the financial framework for building retrofitting are financial institutions (development banks, private banks, etc.). One pivotal barrier that must be removed to reduce their resistance against financial investments of small building retrofitting is the lack of know-how. Accordingly, internal capacity-building within the financial institutions about the potentials of energy efficiency markets and related marketing potentials is crucial. As possible mechanisms to achieving this target, the following approaches have been applied in other projects:

- Development and compilation of guiding principles, manuals and information to calculate EE projects (e.g. Business Plan Format in BEEP),
- Training of bank staff on the potentials of energy efficiency markets and an adequate financial assessment of EE projects,
- Permanent institutional supporting structures to consulting banks on technical issues of EE investments (role of ESCO's).

A further issue to establish a better financial framework for EE investments is related to the financial risks of long-term investments. Very often, uncertainty about the development of politically influenced energy prices and according political subsidies are also negatively influencing a more pro-active approach, especially of private banks. To solve this problem of traditional market failure, only political interventions like public deficiency guarantees might serve as a solution. Apart from such basic decisions, banks can improve their financial incentives for EE investments via their product design, which should be adapted to different kinds of consumers. As one deficit, the lack of appropriate credit and loan products especially for low-income households were identified. Banks should also develop adequate negotiation strategies in relation to different owners that might be interested in such investments (e.g. individuals, cooperatives, housing association, etc.)

9.5.2 Consumers

From a consumer's point of view, the main strategy to improving the financial framework for RUE investment is to reduce financial risks related to such investments. Usually financing sources are fragmented and in most cases not well enough structured to tackle building energy efficiency. Another issue mentioned frequently relates to the duration of financial instruments being offered. However, exact payback period are depending on specific characteristic of each project (e.g. used technologies, size of project, etc.) as well as on uncertain elements like future energy prices. Accordingly, it is very important that information to possible financial instruments for building refurbishment is organized in relation to specific consumer groups. Information on possible combinations of financial instruments is to be offered with regard to single technologies.

Due to long payback periods of building retrofitting investments, financing instruments of banks should contain long-term guarantees or respective repayment times. As further restriction, high down-payments prevented issuances of credits. Additionally, usually no access to financing exists for low-income households, which cannot comply with the preconditions for private loans. Accordingly, a huge potential of renovation investments remains untapped. In this context, external bundling of individual investment potentials is perceived as promising strategy. Such strategy can be realized with the support of specific agencies, funds or ESCO's (e.g. BgEEF). Finally, the projects discovered a lack of information on the side of consumers on how to approach and negotiate successfully on retrofitting investments. Energy agencies and ESCO's can help to solve this problem by offering manuals and information on this question.

9.5.3 Project Developer

With regard to concrete project developers, mainly two challenges have to be addressed to increase their investment. Both can be summarized with the task to reduce their financial risk and transaction costs of project implementation. Related to the issue to minimizing transaction costs, the recommendation of the CF-SEP project is illuminative: Project developers should integrate banks into technical project planning as soon as possible. This would quickly extend knowledge on both sides (for banks on technical issues and for developers on financial ones) and reduce later adaptation and negotiation costs. Furthermore, financial

risks for the developer have to be reduced by a detailed planning and calculation of investment. To that objective, the developer must have profound knowledge on applied technology (e.g. data availability to calculate the baseline, etc.). Additionally, the existence of adequate tools to calculate the relevant data is to calculate possible investments effectively and on a sound basis.

9.5.4 Energy Service Companies

Energy service companies (ESCO's) play a deciding role to secure effective investments in building retrofitting. The completed projects mainly indicated to three important tasks. The first can be described as their contribution to capacity-building of project developers. On the one hand, ESCO's assist project developers with regard to technical issues (procurement, tendering, technical design requirements). They develop and train on tools for local energy management and energy accounting. On the other hand, ESCO's assist project developers in the application of financial tools to plan and calculate possible EE investments (e.g. Business Plan Format (BEEP), Manuals on Financing (CF-SEP). Related to the latter issue, their second function can be described as reducing financial risks of EE implementation. To this issue, ESCO's can also take over the execution and financing of feasibility studies. Another task of ESCO's in this matter is to consult project developers on how to access financial markets and to negotiate with banks. In financial matters, ESCO's can also take over guarantees and loans that banks require for EE investments. A third important task of ESCO's is related to their contribution to build up capacity on EE towards the financial sector. A lack of continuous and substantial technical support to banks on EE investments was identified in some projects to prevent a better adapted financial framework. This gap of support can be bridged by ESCO's that assist banks with regard to technological issues of related long-term investments. As intermediating agency between the financial institution and the project developer, it can support both on adequate and effective proceeding requirements to calculate projects on a solid ground (e.g. procurement issues, tendering). In summary, ESCO's are decisive to bridge the gap between the project developer and the financing institutions. Accordingly, an insufficient number of ESCO's in some new member states was identified as critical bottleneck to a more successful implementation of building retrofitting investments.

Apart from their role as technical expert, ESCO's can also play a decisive role as investor. At least to some part, ESCO's can take over the function of a financing institution. As energy service provider this can be achieved through the instrument of energy performance contracting (EPC). Depending on the existing market potential for EPC and the existing legal/organizational framework, ESCO's can finance measures in building refurbishment through EPC projects. In their function as manager for related projects they can transfer their technical expertise to other financing institutions, thus improving the lack of knowledge on such projects on the financial side.

The following figure summarizes the illustrated conclusions from previous projects. It focuses on actors closely dealing with project implementation.

Figure 20: Conclusions - Lessons Learned (Part I)

Actor	Conclusions / Lesson to be Learned
Financing Institutions	Internal Capacity Building about Potentials of Energy Efficiency Markets Guiding principles, manuals, information to calculate EE projects (e.g. Business Plan Format, BEEP) Training of bank staff Independent verification of facts (financial, technical) about EE investments (ES-COs!)
	Dealing with financial risks and improving financial incentives (to customers, project developers) Uncertainty of changing energy prices and political market subsidies Setting incentives for low-income households Considering ownership structure of target group in program design
Consumer	Reducing financial risks: Adequate financial incentives (Long-term guarantees and securities, preventing high down-payments) Better adapted investment incentives: low-income households, integrative support of building renovation Lack of information how to approach and negotiate with banks and financing options
Project Developer	Reducing financial risks and transaction costs Early participation of banks in technical project development Provision of technological knowledge (data availability, baseline) by adequate tools and instruments Standardisation of measures (e.g. standardized measure catalogues)
ESCO	Contributing to Capacity Building of project developers Technical issues: Development of tools for local energy management and book-keeping, training on tools, provision of adequate proceedings (procurement, tendering, technical design requirements, documentation and processing requirements) Financial issues: Effective financial planning (Business Plan Format (BEEP), Manuals on Financing (CF-SEP)
	Reducing financial risks of EE implementation Financing / executing feasibility studies Consulting support to access financial markets, development of negotiation strategy towards banks Guarantee and loans for EE investment
	Contribute to Capacity-Building in financial institutions Provision of technological knowledge (data availability, baseline) Provision of adequate proceedings in procurement, tendering, etc.
	Often an institution that brings actors together, functions as an interface between public institutions/politics, financing institutions, project developer, ESCOS and Consumer is needed.

9.5.5 Public Administration / EU

Apart from actors directly being engaged in EE projects, further political factors have been identified as critical restrictions to a more successful EE implementation. These relate to actors in national public administration and on EU-level. As first issue, political bodies should increase institutional capacity for ESCO's: In some European countries, the low number of ESCO's is deemed critical. Due to their decisive role for reducing transaction costs at the planning and implementation of investments for energy performance, further European harmonization concerning the operation of energy services (e.g. EPC) might be useful to reduce existing national barriers and to create an internal market for services in energy efficiency (2006/32/EC, ESD).

Other important national elements, which can be derived from recent projects, relate to the public support programs on energy efficiency. In many cases available financing does not match with the target group offering the highest potentials. E.g. in Greece over 50% of the houses / flats are owned by private non-cooperative owners, but no special energy efficiency lending (and therefore incentive) is available. Moreover incentives to act on energy efficiency are partially counteracted by other state subsidies and programmes (e.g. high energy price regulation reduces incentives to act as do heating cost subsidies for low income families). In most cases available state support only provide bulk subsidies without taking into consideration the high costs for the rest of the non-subsidised part of the costs for refurbishment. This can lead to nullifying subsidies' effect. Finally, for innovative financing instruments such as TPF/ESCO project approaches, the legislation needs also to be checked on the national level. Apart from demand for EU regulation, a mix of regulation and deregulation can be useful on the national level. In some cases, current counter active regulations make TPF difficult, if not impossible. Here information and standard documents may be helpful. Related possible recommendations should be addressed to the policy level.

Figure 21: Recommendation - Lessons Learned (Part II)

EU/Public Administration	Creating institutional capacity (sufficient number of ESCO's) and providing for an EU-wide ESCO-market Reducing administrative / transaction costs of EU-wide ESCO operation Guiding principles to ESCO operation, standardisation on quality of energy services Standardisation on application procedures (e.g. templates): Documentation and processing requirements, standards in technical design of building components, effective and simple procurement and tendering procedures, simple contracts
	Improving financial incentives in support programmes Clear and continuous legal framework Programs have to be concentrated to areas with largest potential Preventing inconsistent funding, e.g. heating subsidies, new approaches to address fuel poverty are required Considering ownership structure of target group in program design (e.g. low-income households, mortgaging problem in co-operatives) Securing implementation flexibility (risk of rigid budget law standards) Programs should target on whole building (not only components) Raising public awareness, transparency of energy costs Requirement for long-term support instruments (low interest loans from revolving fund instead of subsidies)

To conclude, increased know-how and information is required on all sides, i.e. on side of the banks, project owners and policy drivers. For concrete project implementation, the role of the ESCO's as intermediary between all other actors is to be strengthened.