URB Energy

Energy Efficient and Integrated Urban Development Action

Guidelines for Innovative Use of EU Funds for Measures in the Housing Sector and Deprived Urban Areas

WP 5 Transnational Manual

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Table of Contents

Foreword and project background

In view of the increasing significance of energy efficiency in the field of urban development, the transnational cooperation project Urb.Energy was launched in January 2009. The aim of the project was to combine measures of energy efficient refurbishment of the housing stock with the overall improvement of residential neighbourhoods. The project was co-funded by the territorial cooperation programme "Baltic Sea Region Programme 2007–2013" as well as by the German federal programme "Transnational Cooperation". 15 partners from Estonia, Germany, Latvia, Lithuania, Poland and Belarus took part in the project and represented key actors in national activities for energy efficient settlement structures.

Cities offer a huge potential for energy saving and the reduction of CO_2 emissions. With their vast housing stock and attached infrastructure they account for around 80 % of the EU's total final energy consumption and 40 % within the building sector. Building envelopes and the energy supply of buildings in particular present a huge saving potential that has to be taken into detailed consideration. To achieve this potential, investment is needed and the behaviour of diverse stakeholders with varying capacities and motivation has to change. The energy efficient renewal of the housing stock requires the consideration of the diverse condition of the buildings and the different urban structures in the Member States, regions and urban areas within the EU.

Need for integrated energy-related modernisation approaches

There is a need for integrated energy-related modernisation approaches on neighbourhood level that take the specific situation into account: the energy balance and the saving potentials of the buildings (with their technical features and quality), the socio-economic situation, the ownership structure and the capacities of owners, the energy supply system and the use of renewable energy (related to a wider regional territory). This is especially necessary when there is scattered ownership, residents with low income and different building types, as there are more obstacles to overcome to develop a suitable renewal concept.

Suitable energy efficient solutions within complex urban context

Based on the complexity of a large-scale energy efficient urban renewal process, addressing individual buildings and individual actions is just the first step. It is necessary to link various measures, taking the interactions as well as the specific local conditions into account. This requires that the instruments are adapted to the particular region, city or neighbourhood. Integrated energy-related modernisation concepts for urban areas offer a suitable solution to achieve this, when they are adapted to the overall urban context (e.g. energy balance of a neighbourhood, the socio-economic situation, financial capacity of residents etc.).

Key objective of Urb.Energy

Urb.Energy's key objective is the development and implementation of integrated concepts and strategies for the comprehensive energy efficient renewal of residential areas in the Baltic Sea Region. To reach this target, the project focused on three main topics: integrated urban development, energy efficient building renewal and innovative financing schemes. The project is co-ordinated by the German Association for Housing, Urban and Spatial Development as Lead partner and the Housing Initiative for Eastern Europe (IWO).

Comprehensive energy efficient housing refurbishments require large investments. In the new EU Member States the most common form of ownership in the housing sector consists of apartments owned by individual private owners in a shared housing complex. Individual ownership of apartments often goes hand in hand with specific problems like low income households, elderly owners with low motivation for refurbishment activities and low creditworthiness due to lack of ownership of the ground of the building as well as the difficulty to reach consensus decisions for a shared housing complex in owner associations. This means that investment decisions require an appropriate legal framework regarding mutual ownership and decision-making rules, as well as financial support schemes that make investments in energy efficient refurbishment more feasible.

There are still few national support programmes in the Urb.Energy partner countries. They differ in design and focus and have changed during the past decade in terms of volume, composition and source of funding. As energy refurbishment of housing has been eligible for financing under the Structural Funds since 2007 within the framework of integrated development operations in the EU 12 (and since 2009 in all EU Member States), new funding schemes have been implemented in the partner countries. The project partners tried to make use of the available European funds and national or local funding schemes available to set up financing schemes for the actual conditions and needs in the target areas.

In terms of financing, the Urb.Energy project activities focused on the analysis and compilation of existing funding sources available for housing and urban modernisation measures on national and European level. Special attention was given to the use of EU Structural Funds for housing measures and revolving funding instruments. The design of appropriate financing schemes was reviewed and different sources and instruments were compiled into innovative financing strategies and recommendations.

Urb.Energy main outputs

In addition to these **guidelines for the innovative use of EU funds for measures in the housing sector and deprived urban areas,** the results and findings of the 3-year Urb.Energy project are summarised in three further documents:

- **Manual on an integrated urban development approach targeting at energy efficient residential areas**
  The manual explains the need for integrated urban development approaches with focus on energy relevant issues in order to target the improvement of energy efficiency of residential neighbourhoods with their modernisation. It gives practical operational advice to local administrations on how to plan and implement such approaches successfully.
- **Manual on holistic strategies for energy efficient refurbishment of the housing stock and renewal of the related energy supply system**
  The manual presents an overview of various suitable and realistic approaches to implement energy and climate friendly measures to improve energy efficiency and the use of renewable energy sources in the building sector embedded in the framework of an integrated energy efficiency concept for urban districts, especially for residential areas.
- **Policy recommendations: Energy efficient urban areas and neighbourhoods**
  A contribution to liveable and competitive cities
  This paper presents five main recommendations, based on the experience of the Urb.Energy partners, to put municipalities in a good position to increase the energy efficiency of cities and their neighbourhoods and to develop an affordable and climate friendly energy supply in combination with the modernisation of city districts.

1 Introduction to the guidelines

The energy efficient refurbishment of neighbourhoods requires major public and private investments. This document intends to present an overview about the innovative use of EU funds for the financing of energy efficiency measures in the housing sector and deprived urban areas.

Thus, in Chapter 2 an overview is given about the available financing options derived from the European Regional Development Fund (ERDF) for the programming period 2007-2013. Special focus is taken on the options available via the ERDF for use in deprived housing areas and on the various options derived from the "Joint European Support for Sustainable Investment in City Areas" (Jessica) for revolving urban development funds. Furthermore, the framework conditions and further options for the programming period 2014-2020 are briefly described as far as known since the discussions and negotiations started with presentation of first proposals by the EC Commission on 6th October 2011. Other available financing options like European Energy Efficiency Facility (EEEF) are also briefly mentioned as an option for innovative financing.

In Chapter 3 the financing options and schemes identified and partly implemented by project partners are presented. The innovative use of ERDF is demonstrated by different available options in the Operational Programmes like specialised grant schemes and loan programmes based on revolving funds. It is explained in detail and through the example of the project partner KredEx of how to set up a revolving fund.

In Chapter 4 findings and recommendations from the project experience for the innovative use of ERDF are presented.

2 Available funding options from EU structural funds

In this chapter an overview is given about EU financing instruments to support the energy efficient refurbishment of neighbourhoods. The options presented are based on the following EU financing instruments:

- The European Regional Development Funds (ERDF),
- The Joint European Support for Sustainable Investments in City Areas (Jessica),
- The European Local Energy Assistance (ELNA) and
- The European Energy Efficiency Fund (EEEF).

2.1 European Regional Development Fund (ERDF)

Funding period 2007–2013

In the framework of cohesion policy and structural funds, the European Regional Development Fund (ERDF) has a budget of € 308 billion for the current programming period 2007-2013 at its disposal. The ERDF aims to strengthen the competitiveness and attractiveness of the European regions, promote employment and economic growth through the promotion of the knowledge economy and investments in human resources.

The previous legislation for the EU Structural Funds gave only the 12 new Member States, which have acceded to the EU since 1 May 2004, a limited right to support interventions in the housing sector, including energy efficiency. It could only be used for common parts of a building or the entire building in the case of social housing in deprived urban areas and up to a level of 2 % of the total national ERDF allocation. Thus, the energy efficient refurbishment of neighbourhoods was difficult to support.

On 3rd December 2010, the European Commission adopted a regulation making energy efficiency improvements and renewable energy schemes eligible for support from the ERDF in all Member States. The new regulation stipulates that expenditure on energy efficiency improvements and on the use of renewable energy in existing housing is eligible for up to 4 % of the total ERDF allocation (i.e. overall up to € 8.0 billion).

The new regulation allows for the support of energy efficiency and renewable energy investment in all types of buildings. However, only low-income households can qualify for assistance as defined by national rules. In specific terms, the support can co-finance national, regional or local schemes, for example, for the insulation of walls, roofing and windows (double glazing), solar panels, and the replacement of old boilers with more energy-efficient ones.

Funding period 2014–2020

On 6th October 2011, the European Commission adopted a draft legislative package that will frame EU cohesion policy for the period 2014–2020. The Commission proposed a number of important changes to the way cohesion policy is designed and implemented influencing as well the prospective allocation of ERDF means with regard to integrated urban development concepts. Energy efficiency and renewable energy are set to be one of the 11 investment priorities under the € 346 billion ERDF budget for 2014–2020. This priority aims to support the shift towards a low-carbon economy in all sectors, including energy efficiency in public infrastructure and the housing sector.

To ensure that EU investments are concentrated on the proposed priorities, minimum allocations are set for a number of priority areas. For example in more developed and in transition regions at least 80% of ERDF resources at national level should be allocated to energy efficiency and renewable energy as well as innovation and small and medium-sized enterprise support. From the 80 % at least 20 % should be allocated to energy efficiency and renewable energy.

Less developed regions will have a broader range of investment priorities to choose from reflecting their wider development needs. Nevertheless, they will have to devote at least 50 % of ERDF resources to energy efficiency and renewable energy, innovation and small and medium-sized enterprise support.
The proposals highlight the important contribution of cities to Europe's growth and employment. The objective is to focus on sustainable urban development with the Commission proposing that each Member State earmarks a minimum 5 % of its ERDF allocation to "integrated actions". These actions would combine investment from different priorities and programmes, and would be delegated to cities for management.
An urban development platform, building on the experience of URBACT (www.urbact.eu), will be created to promote capacity building and exchange of experience within the EU.
Finally, the Commission has proposed to allocate part of the budget (0.2 % of the ERDF allocation) to finance innovative actions in urban areas. Better coordination between fixed and human capital investments in cities should also be promoted.

Use of ERDF in Pomerania, Poland

The following example illustrates an example for the classical use of ERDF for integrated urban development projects focussing on energy efficiency in Pomerania, Poland.

Time frame: various projects started in 2007
Current status: partly completed, mostly in implementation
Investment: € 885 m Regional Operational Programme

The Regional Operational Programme (ROP) for Pomorskie Voivodeship 2007–2013 grants a total ERDF financial allocation of approximately 885 m €. Thus the region is obliged to invest in catalysts for integrated urban development such as water, waste and environmental management, energy infrastructure and conservation and increasing the share of renewable energy sources (RES).

Image 1: Refurbished apartment blocks in Western-Pomerania
© EIB

In the field of energy efficiency, the minimum project value to apply is 250 000 € granting at most 75% co-financing, encompassing measures like development and modernisation of heat infrastructure systems, shift from fossil fuels to environmentally friendly fuels, comprehensive thermal insulation of public buildings, as well as replacement, extension and building of new low and medium voltage electric and energy lines. The above mentioned areas are covered by 18.59 m € due to the ROP of Pomerania, resulting into 55 applications already received, applying for means to the amount of 48.5 m €.
This shows the huge demand for ERDF financial means, since mainly thermal insulation projects and heat modernisation applications were received.
About 12 m € are currently designated for expenditure in the field of RES. Its main objective in Pomerania is to increase production and usage of renewable energy resources, implying extension or rebuilding of RES infrastructure and the purchase of RES production equipment. The 45 renewable energy projects already launched signify a promising perspective.
Enhancing the quality of urban life relates also to enhanced waste facilities, as the municipal waste management project in Gdansk successfully proves: As part of the project, selective waste collection and electronic and hazardous waste collection were organised as well as an asbestos removal programme. In addition to the construction of a biogas combined heat and power plant (CHP) within the 84m € project was built, containing an EU co-financing share of 40 m €.

Furthermore in Pomorskie Region, Pomerania, a JESSICA programme (cf. Chapter 2.2) was implemented due to which public facilities were successfully refurbished in the last few years. The thermal insulation of 7 hospitals in Pomorskie Voivodeship was implemented, utilising 4.5 m € from Structural Funds, while the project expenditure were incurred at 9.2 m €. Primary and secondary schools in Poviat of Lebork (9 buildings) were thermally insulated using 3.2 m € and 1.6 m € from ERDF, as were public buildings in Slupsk (schools and kindergartens) were supplemented with thermal insulation on a financial level of 3.8 m € (1.7 m € from co-financing).

Pomorskie region is a role model for integrated urban development efficiency. 400 tonnes CO_2 emissions reduction is achieved annually, meanwhile the RES share increased remarkably owing to installation of solar collectors and district heating connection.

2.2 Joint European Support for Sustainable Investment in City Areas (JESSICA) – initiative for urban development funds

The Joint European Support for Sustainable Investment in City Areas (JESSICA) is an initiative by the European Commission and the European Investment Bank (EIB), in collaboration with the Council of Europe Development Bank (CEB). JESSICA gives the EU Member States the option of using some of the EU Structural Funds to support and make repayable investments in projects forming part of an integrated plan for sustainable urban development. These investments, which may take the form of equity, loans and/or guarantees, are delivered to projects via Urban Development Funds (UDF). Such UDFs are designed as a revolving fund, which means that returns

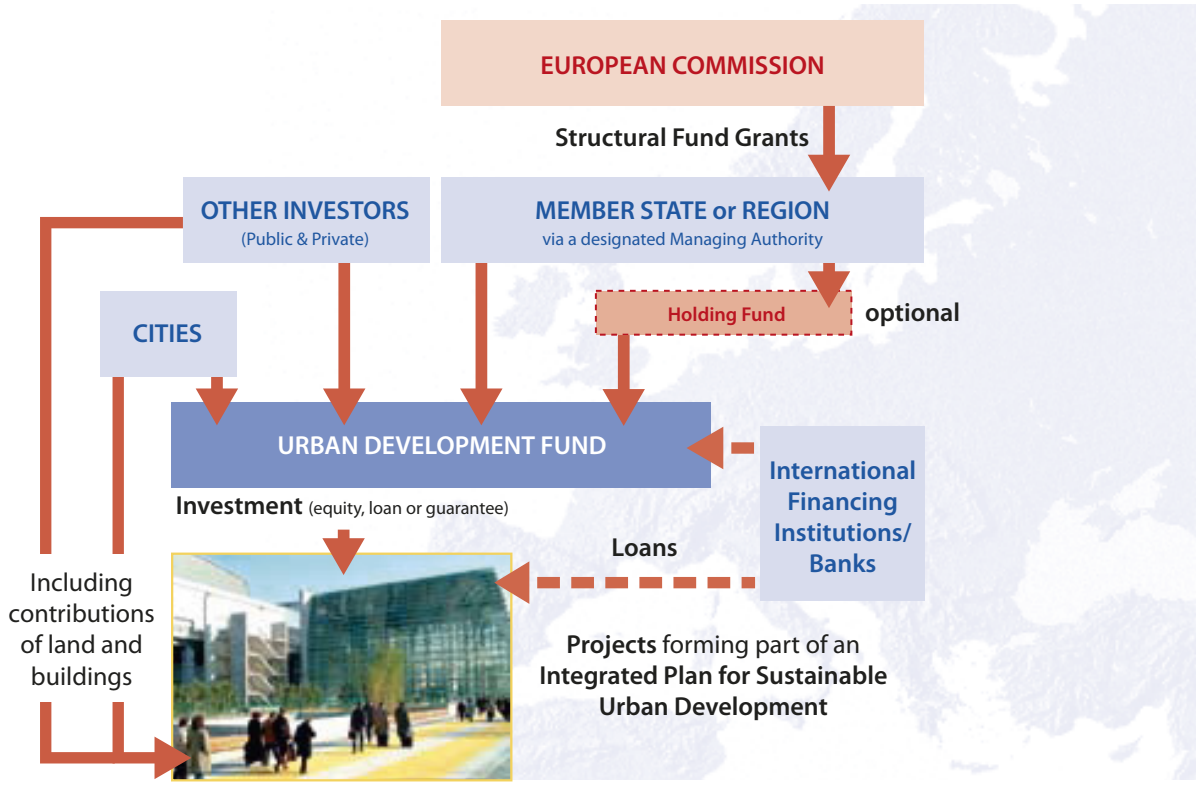

Diagram 1: Functional scheme of urban development funds with support of Jessica (Source: EIB)

from revenue generating components of investments are reinvested in new urban development projects, thereby recycling public funds and promoting the sustainability and impact of EU and national public money. UDFs can be designed to exclusively support integrated urban development and energy efficiency projects, thus promoting the energy efficiency of neighbourhoods.

Benefits of Jessica

The recycling of funds is possible as long as JESSICA funds have been invested by an UDF in eligible project expenditure before the expiry date of the Structural Fund programming period. Any returns/receipts generated from these investments can be either retained by the UDFs or returned to Managing Authorities for reinvestment in new (energy efficiency) urban regeneration projects.

When the volume of the fund is "transformed" into repayable investments, this money is not repayable to the European Commission. No state guarantee is involved for these loans hence they would not aggravate public finance and debt.

JESSICA also acts as a catalyst in urban areas to enhance the investment market and therefore complement other initiatives or sources of funding that may already exist in the Member State.

How to set up a revolving fund

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

Before implementing a revolving fund, support is needed from politicians in the government. The self imposed targets of the EU have to be broken down into achievable objectives. On a certain level in the target areas, these targets need to be transferred into operational programmes.

In a next step, the government has to determine or to establish an independent institution which is responsible for the administrative work of the fund. It is helpful when the institution is 100% owned by the government for better control. When setting up the fund, the responsible institution should look for partners to gain access to specific knowledge and experience about financing and technical matters managing such funds. Further, financial means have to be allocated to the revolving fund. Sources can be i.e.

- Structural funds from the EU (e.g. EFRE),
- Financial sources from the government or
- Funding from international credit institutions.

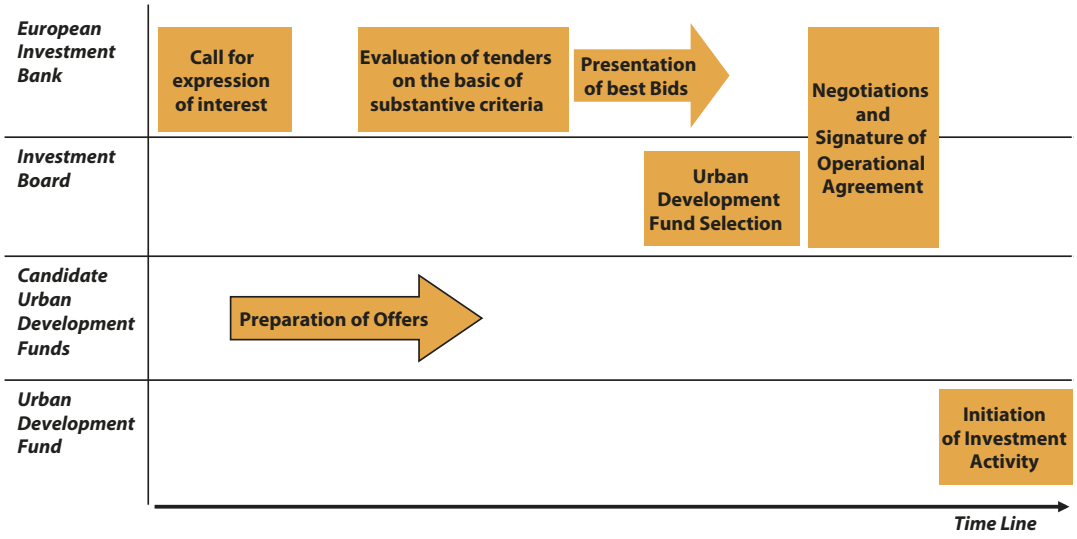

Diagram 2: Advantages of urban development funds for involved actors (Source: A.ST. Steinebach Angewandte Stadtforschung GmbH)

Furthermore, the precise requirements and conditions for the different loans and to get support from the fund are to be formulated, e.g. only buildings are supported which were built before 1990 and save up to 30% of energy after renovation. For a high reputation and a simple approval process for the applicants it is favourable that the issuing of the loans is done by national banks, which are represented in the country. These banks lend the money from the fund to the beneficiaries.

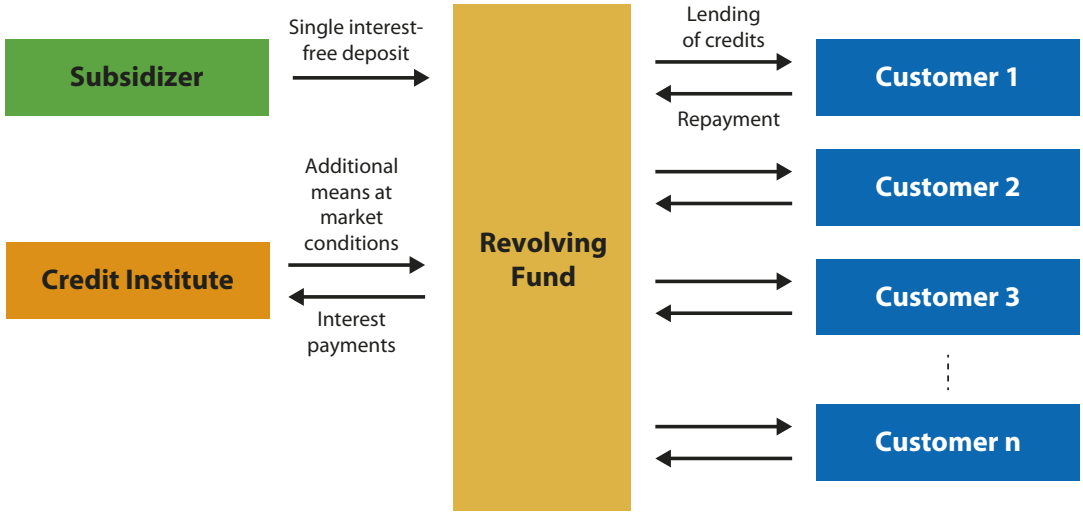

Diagram 3: Revolving fund scheme (Source: Investitionsbank Schleswig-Holstein, Energy Agency)

When all preparative administrative work is done, the responsible institution should launch a marketing campaign to inform the target groups and motivate them to make use of the funds by launching and investing in adequate projects.

The responsible institution is to regularly report to the EU, government and funding partners about the ongoing progress. To stay up to date, the loan programmes and conditions should be regularly adjusted and revised.

For the successful set up of an innovative financing instrument, the people in charge need to consider many external factors. In additions to knowledge on financing matters, a specialist for technical questions is also needed.

- Different analyses should be done before the operation of a fund:
  - Structure of the housing typology,
  - Owner structure of the buildings; e.g. cooperatives, owners associations,
  - Financial needs of the different target groups
  - General affordability of measures and economical aspects
- Always clarify the conformity of the development of the fund with EU regulations.

Practical experience within Urb.Energy

Within the Urb.Energy project there are four good practice examples for revolving funds to support urban development and energy efficiency projects. The examples from Brandenburg and Poland concentrate on the implementation of urban development funds and the examples of KREDEX, Estonia and HUDA, Lithuania on JESSICA funds for the support of the energy efficient refurbishment of residential housing.

Urban development fund in the land of Brandenburg, Germany

A set of funding guidelines on sustainable development was passed in the Federal State of Brandenburg, Germany within the framework of the Regional Operational Programme co-financed by ERDF. These funding guidelines allow towns in Brandenburg to be selected to receive grants from the Urban Development Fund (in agreement with the ERDF OP). A total of 15 towns and cities were able to qualify for funding on the precondition that they had prepared an integrated urban development concept.

The urban development fund could be used to address urban and ecological degradation, to improve traffic in the town, to renovate, refurbish and adapt

social and educational infrastructure, to manage and market city districts and for "urban culture". 100 % of the investment can be financed if no grants from other programmes had been received. The interest rate for final beneficiaries is currently 1.5% per annum (for municipalities) or at least 2% of the remaining value of the loans for public utilities. Instalment loans have a maturity of ten years.

A grace period (interest-free initial period) is possible on agreement. It is possible to combine a grant and loan from the Urban Development Fund for an income-generating infrastructure project. The calculation method of the Investitionsbank des Landes Brandenburg (ILB) enables the determination of a funding gap that is eligible for financing. The model uses the low interest rate of the Urban Development Fund to calculate the present value. As a result of this, the gap in funding is decreased that can be covered by a grant. The advantages of this approach are that a smaller grant is needed, that the municipality's co-financing contribution is lower and that the pre-financing of the revenue from the Urban Development Fund reduces the municipality's level of risk.

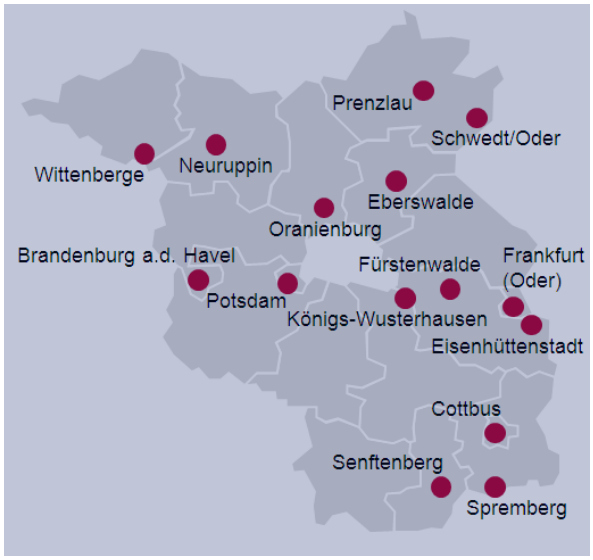

Image 2: Eligible cities for funding © ILB

JESSICA implementation in Wielkopolska, Poland

Time frame: launched in 2010
Current status: in implementation
Investment by JESSICA: € 73.1 m (PLN 290 m)

Image 3: Shopping mall financed via JESSICA © EIB

The main objective for the implementation of JESSICA in Wielkopolska is the revitalisation of deprived urban areas accompanied by financial support of the regional innovation system via reinforcing the potential of the institutions that support the business environment. The overall amount of available investment derived from JESSICA funds totals approximately 73.1 m € (PLN 290 m), whereas 60 % (€ 43.9 m) were allocated for large cities (over 50 thousand inhabitants), 40 % (€29.2 m) for smaller cities and € 10 m for urban projects strengthening institutions that support the business environment. Preferential loans are distributed by the Bank Gospodarstwa Krajowego (BGK) set on the basis of the reference rate of the National Bank of Poland (currently 3.75 % interest rate).

At most 75 % of the total eligible investment cost should be borne by loans from potential investors, such as local governments, municipal companies, private investors, public-private partnerships, NGOs and other entities conducting business activity.

About 20 projects will be financed by JESSICA support in the Wielkopolska urban area. A three-level shopping mall with about 120 retail and service premises (total area around 28 000 m^2) for example is going to be implemented via JESSICA funding. The investment is situated in the post-industrial facilities area in the city centre and encompasses a total financial expenditure of PLN 219 m, supported by PLN 50 m from EU Structural Funds.

As required for obtaining JESSICA funds, the object in question is part of an integrated urban development concept, including an improvement of the old town's image including bike paths and extended parking.
Another project to be financed by EU Structural Funds is the creation of a modern office building for rent including the creation of a park, construction or modernisation of access roads and pedestrian crossings, professionally equipped lecture rooms with free lectures and training courses for the local population. The JESSICA loan allocated to this project amounts to 22.5 m PLN (total investment value PLN 30m).
To strengthen the local business environment Wielkopolska set up a three-stage investment programme including the renovation of historic buildings, providing each with additional technical equipment and business offices. This measure requires loans in the amount of PLN 18.5 m from JESSICA funds, whereas the total amount of investment is PLN 30.3 m.
Notably the wide range of different investments and loans granted needs to be considered for further usage of EU Structural Funds. Thus the range of projects including expected JESSICA financing fluctuate from a few hundred thousand zlotys up to PLN 50 m.

Estonian Credit and Export Guarantee Fund KredEx

The aim of KredEx is to improve housing conditions of Estonian residents by expanding financing possibilities and offering financing solutions aimed at energy efficiency. KredEx was founded by the Ministry of Economic Affairs and Communications in 2001 with the purpose of improving the financing possibilities of companies, to enable people to build or renovate a home and develop an energy-efficient way of thinking. Up to today it is the most successful example of a revolving fund for energy refurbishment of residential housing so far in the new Member States.
The Operational Programme for the Development of the Living Environment in Estonia encompasses several financial support measures for energy saving in the field of housing as for instance a loan for reconstruction of apartment buildings with the purpose to finance the comprehensive renovation works in apartment buildings and improve energy saving (at least 20%) of apartment buildings by improving the accessibility of loan capital through KredEx. The product is targeted at apartment associations, building associations (incl. previous housing associations) and communities of apartment owners.

Image 4: KredEx programme advertisement © Credit and Export Guarantee Fund KredEx

A renovation loan is a credit institution's debt obligation towards KredEx resulting from a loan agreement concluded with a credit institution. A renovation loan is for specific purposes and a credit institution can use it for issuing apartment buildings loans in accordance with these principles only.
Favourable conditions of renovation loans arise from the combination of zero interest means for renovation of apartment buildings, allocated by European Union Structural Funds, with external financing, enabling the provision of financial resources to credit institutions with a weighted average price lower than at financial markets, and to issue through these loans with lower interest and longer time limit to credit institutions.
For apartment buildings belonging to the target group, a renovation loan will be issued for a maximum of 20 years; a normal loan for apartment building at the moment in Estonia is a maximum of 15 years. An apartment building belonging to the target group has the right to use the KredEx apartment building loan guarantee upon application for apartment building renovation loan.
A regular bank loan has usually too short a repayment period and too high interest for a building with apartments to renovate the building completely. In connection with the resources from the Structural Funds of the European Union, KredEx can offer the banks an opportunity to provide apartment buildings with a more favourable loan which has a longer repayment period and its intended purpose is to increase energy efficiency by carrying out certain renovation works.

JESSICA implementation in Lithuania

Time frame: launched in 2009/2010
Current status: in implementation
Investment by JESSICA: currently 28 m €

In early 2009 JESSICA financial support was granted in Lithuania with the purpose to refurbish existing apartment blocks, using a financing model capable of reimbursing 50 % of investment expenditure.
In order to enhance these results a new renovation financing model was established consisting of fixed interest rate at 3 % p.a., maturity up to 20 years, 2 years grace period during construction, 15 % JESSICA loan write off if a certain energy efficiency level is eventually achieved. In addition, low income families were supported by 100% reimbursement of their instalments.

Image 5: Multi-apartment building in Panevėžys
© Housing and Urban Development Agency Lithuania

To refurbish Lithuanian building stock the following measures qualify for financial support from JESSICA funding: Replacement of windows, insulation of ceilings/roofs and walls, installation of solar panels/wind power facilities, as well as the replacement of the water supply, elevators and electrical wiring in shared areas
Regarding the current achievements of JESSICA funding in Lithuania building stock renovation according to the recent financing strategy, it is notable that up to March 2011 already 3 agreements with UDF's and 3 loans with home-owner associations were signed. Moreover 71 home-owner associations have decided to join the programme, 32 investment projects have been vetted by the urban development agency HUDA, 5 applications are under review by UDFs and 28 technical projects are in purchase phase.
The EIB has to date distributed 16 m € to Šiaulių bankas, 12 m € to Swedbank and SEB during the spring of 2011. In November 2010 Šiaulių bankas signed the first JESSICA loan agreement of nearly € 300,000 with the homeowners' association of multi-apartment buildings in Panevėžys, while Šiaulių has approved three other projects in Plungė and Pabiržė worth around € 500,000
Generally speaking there is demand for JESSICA loans in Lithuania, though financial support is not yet sufficient. It is rather likely that Swedbank and SEB, with larger bank networks than Šiaulių bankas, start offer-

ing JESSICA loans, hence facilitating financial support from ERDF funds.

2.3 European Local Energy Assistance (ELENA)

The European Local Energy Assistance (ELENA) fund supports regional and local authorities in accelerating their investment programmes in the fields of energy efficiency and renewable energy sources. The fund covers a share of the cost for technical support that is necessary to prepare, implement and finance new investment programmes. For example ELENA could support structuring of programmes, business plans, energy audits, feasibility and market studies and contractual arrangements.

To get support for technical assistance, the applicant must have identified an investment programme aiming at contributing to achieving the European energy and climate objectives (20-20-20 initiative). Funding can be given for technical assistance e.g. for energy efficient refurbishment (EER) measures, for the replacement of street lighting, for the promotion of renewable energy sources and renovating, extending and building of district heating/cooling infrastructure. Proposals and funding applications can be submitted until the end of 2013.

Good practice examples

Netherlands –
energy efficiency via district heating

Time frame: 2010–2013

Investment derived from ELENA: 1.8 m €

Several operations in the field of energy efficiency audits and surveys are part of the project, launched in Purmerend, Netherlands, for the local district heating company as a beneficiary.

Operations encompass the preparation of tender documents for the energy retrofitting of the district heating network, elaboration of a business plan for new geothermal and biomass heat production facilities, design and realisation of the legal and financial set up for a special project vehicle to be in charge of investment, contracting of investment partners for the SPV and preparation of long term biomass supply contract.

In the coming future, the project plans to set up of a dedicated project implementation unit with additional and internal staff in charge of preparing and implementing the complete investment programme (network and renewal energy plants).

Eventually Purmerand is planning to construct a geothermal heat plant and a biomass heat plant if financially viable, upgraded to a cogeneration plant including all the connection work to the heat grid and the necessary logistic components. The total investments amounts to 80 m €, CO_2 reduction will be 56 000 t/y.

Further information: www.eib.org/attachments/documents/purmerend.pdf

Portugal –
RES and transport upgrading

Timeframe: 2010–2013

Investment derived from ELENA: approx. 1 m €

The city of Vila Nova de Gaia in Portugal aims to enhance energy efficiency and the share of Renewable Energy Sources (RES) in buildings and public lightning, as well as the urban public transport energy efficiency (EE).

Via the installation of photovoltaic panels on the roofs of selected public buildings and retrofitting of public lighting and traffic lighting systems, the municipality strives to improve the energy performance of 200 schools and public sport facilities. For the sake of upgraded urban public transport EE, a new design of the current bus network, the deployment of more efficient bus fleet and the implementation of integrated e-mobility network were elaborated. ELENA assignments consist of: identification of individual investments and preparation of tender documentation, structuring and planning operations and setting up the financing system, as well as elaborating a tendering procedure for EE/RES measures in schools, sport halls, urban transport measures and public lighting sector, too.

Total financial frame of the project is 73.4 m € and expected results include CO_2 reduction of 12 120 t/a.

Further information: www.eib.org/attachments/documents/vila-nova-de-gaia.pdf

Italy –
refurbishment of school buildings
Timeframe: 2010–2013
Investment derived from ELENA: 1.94 m €
The Province of Milan in Italy translates EE measures into action by embedding ELENA Structural Funds into financial deployment. 90m € demand refurbishment measures of existing school buildings located in selected municipalities in Milan province. ELENA contributes through tendering of standard contracts for energy performance contracting for selected groupings of public buildings and will support the development of the investment programme to develop the energy efficiency potential of a group of public buildings of the province.
A project implementation unit will be established in the province to manage the whole investment programme, in the same instant promoting and analysing the proposals of potential projects by municipalities. Furthermore the unit ought to support them technically during the implementation of the projects. In the end results should accomplish the targets set to 22,400 MWh/year decrease in natural gas consumption and 4,950 MWh/year decrease in electricity demand.
Further information: www.eib.org/attachments/documents/province-of-milan.pdf

2.4 European Energy Efficiency Fund (EEEF)

The European Energy Efficiency Fund (EEEF) will support EU Member States' climate and energy goals. The European Commission, the European Investment Bank (EIB), the Cassa Depositi e Prestiti (CDP) and Deutsche Bank are responsible for the EEEF. The EEEF aims to provide market-based financing for commercially viable public energy efficiency and renewable energy projects within the European Union.
The fund is the centrepiece of a new sustainable energy facility that the European Parliament and Council of Ministers agreed to launch using unspent funds from the European Energy Programme for Recovery for a new sustainable energy facility. It supports EU Member States in meeting their objective by 2020, to reduce greenhouse gas emissions (GHG) by 20 %, to increase renewable energy usage by 20 %, and lower energy consumption through a 20 % improvement in energy efficiency. It will target the substantial potential for energy efficiency and small scale renewable energy in the European public sector.
The Fund will pursue a two track investment approach, either investing directly in projects or via financial institutions. The fund has an initial volume of € 265 million, consisting of: € 125 million from the *European Energy Programme for Recovery* (EEPR), € 75 million from the European Investment Bank, € 60 million from Cassa Depositi e Prestiti SpA and € 5 million from the investment manager, Deutsche Bank. The Fund aims to attract other public and private investors. Its final size will depend on additional investors (public and/or private) and the eventual investment portfolio. The Deutsche Bank will act as Investment Manager of the fund.
The EEEF will invest in energy saving, energy efficiency and renewable energy projects, particularly in urban settings, achieving at least 20 % energy saving or [GHG/CO_2] emission reduction. Sustainable energy investments promoted by local, regional and (where justified) national public authorities could include:

- Energy saving measures in public and private buildings;
- Investments in high efficient combined heat and power (CHP) including micro-cogeneration and district heating/cooling networks;
- Investment in decentralised renewable energy sources including micro-generation;
- Clean urban transport;
- The modernisation of infrastructure, such as street lighting and smart grids, as well as
- Investment in sustainable energies with a potential for innovation and growth.

Potential beneficiaries are public authorities (e.g. municipalities), preferably at local and regional level, and public or private companies, which are acting on behalf of those public authorities such as local energy utilities, Energy Service Companies (ESCOs), district heating combined heat and power companies or public transport providers. Projects and technical assistance requests are eligible as from 1st January 2011 and may thus be financed on a retroactive basis from that date.

The EEEF, which will be managed by Deutsche Bank, will offer a wide range of financial products such as senior and junior loans, guarantees or equity participation. In addition, about € 20 million of the EEPR funding will be made available as grants for project development services (technical assistance) related to the preparation of projects. Finally, awareness-raising activities for national/regional authorities managing cohesion/structural funds in the field of sustainable energy are also envisaged (for about € 1 million).

Applicants will have to provide a project proposal complying with the scope and the objective of the Fund, the eligibility and selection criteria and the EU legislation applicable to the specific area of the project (e.g. Buildings Directive or Renewable Energy directive). Technical assistance grants may be offered for project development services, including financial advice. Applications for grants will be aligned with the rules under the ELENA facility.

3 Examples for innovative use of financing schemes by Urb.Energy project partners

This chapter presents successful financial grant schemes and loan programmes for the target areas of the Urb.Energy partner countries. Special focus is laid on the options available for project partners in Eastern European Countries (EEC). The grant schemes and programmes described by German partners are a limited selection from the German funding framework for energy efficient refurbishment of residential housing on federal, regional and local level.

3.1 Latvia – Riga

Launched in 2001 there is an ongoing programme issuing state guarantees as a bank security for loans. In addition, Latvia is using 29.9 m € from the EU funds (ERDF) assigned for the 2007–2013 time frame, which is 1.3 %. The possible maximum percentage would be 3.0 %.
Additionally in the budget of Riga city, there is a yearly budget of 4 m € provided for the renovation of educational institutions (schools, kindergartens).

Image 6: Modern buildings in Jugla city area © Normunds Strautmanis

Since 2009 the climate change financial instrument stipulated in the law on participation of the Republic of Latvia in the flexible mechanisms of the Kyoto Protocol (from greenhouse gas emission quotas trading, which are at state disposal) is available. The total financial volume for 2009 was 25.1 m € signifying a grant rate of 85 %.
EU Structural Funds support has been available for the renovation of residential buildings since 2009, as well. Riga was one of the first cities to benefit from new EU Structural Funds policy, as 6 multi-apartment buildings were refurbished by 50 % grant support from ERDF fund.
Likewise since 2009 the EU Structural Funds support is available for CHP (combined heat and power unit) efficiency increase, as well as for the development of cogeneration systems. The total sum available in the latter programme amounts to 24.3 m € implying grant rate amount up to 50 % of the investment, whereas the total amount of the CHP support totals about 57.2 m € involving similar grant rates varying around 50 %.
Concerning the support of urban development or housing construction the municipality of Riga manages constructions of new residential rental houses among others by using bank loans (Municipal Ltd. "Rigas pilsētbuvnieks" takes loans); meanwhile in the field of social housing the municipality of Riga regularly finances the development of residential constructions for citizens with low income.
Social housing stock in Latvia and Riga in particular, is eligible to receive EU Structural Funds support for energy efficient refurbishment measures since 2009, as well. The amount for the first call was approximately 10 m € at a grant rate level of approximately 75 %.
All local governments of cities finance the urban planning activities by themselves according to their need and also in Riga all planning activities are financed by the city budget.
There are no support programmes for the development of integrated urban development concepts (IUDCs). The IUDC for Jugla (Riga) was developed as part of the Urb.Energy project and acts out to be the

first of such detailed concepts. Moreover there is a need to develop clear bases of sketches and technical information to work out financially and technically solid cost benefit analyses of city development.
The most significant external financial sources for urban areas are:

- City investment programme (city budget programme);
- European Union funds;
- City infrastructure fund (special budget programme charged by the special tax);
- Urban neighbourhood fund (Community Foundation to be launched this year).

Image 7: Jugla high-rise typical building © Normunds Strautmanis

Concerning multi-apartment building renovation various renovation models have been analysed. It was concluded that the use of Energy Service Company (ESCO) models would be the most effective option to increase energy efficiency in buildings. They would provide higher quality and better indicators of the energy efficiency. However, several preconditions have been identified with a view to ensure the best performance of the models at the national and the municipal levels. Extensive information campaigns should be carried out to provide information to inhabitants on the opportunities offered by ESCO. At the same time, competition between ESCOs should be increased by creating new local service companies, or by inviting foreign companies.
Different financing sources were analysed with the conclusion that the consolidation of several financing sources would provide the best option both for renovation and for the inhabitants. These would be self-financing, the National Support Scheme, EU funding and the Revolving Fund.

3.2 Lithuania

Lithuania developed a new support programme for energy saving refurbishment measures. It is a subsidy programme equipped with financial means of the JESSICA initiative *(Joint European Support for Sustainable Investment in City Areas)*. It offers a grant of 15–50 % of total investment costs, whereas the actual amount depends on the rate of energy savings achieved through refurbishment measures. The budget of the JESSICA programme is comparatively high consisting of 137.5 m € from Structural Funds and 65 m € from state budget.
Moreover Lithuania has developed further support programmes in the form of subsidy programmes from the European Regional Development Fund (ERDF) and the Cohesion Fund in combination with national funding. The existing funds have different priorities and applicants.
The local and urban development is generally supported by:

- A programme for the refurbishment of multi-apartment buildings, which primarily increase their energy efficiency,
- A programme for social housing development and improvement of its quality.

Municipalities and their own institutions can apply for these programmes.
The environment and sustainable development is supported by:

- A programme for water supply and wastewater renovation and development
- A programme for the refurbishment of public buildings at national level
- A programme for the refurbishment of public buildings at regional level

Applicants for these programmes can be municipalities and their own institutions as well as water companies.
The basic economic infrastructure is supported by the programme for heat supply system modernisation and development. Applicants can be municipalities and their own institutions.
In 2004 the Energy Efficiency Pilot Project, which started in 1996, came to an end. In order to continue the efforts a sequel project was implemented, comprising of the modernisation of multifamily houses. It is set to expire in 2020.
Unfortunately there are no financial instruments for central urban development in Vilnius/Lithuania. The local municipalities are responsible for developing urban development concepts, thus being in charge for the preparation of general and detailed plans which are funded by EU Structural Funds.

Image 8: Modernised multi-storey residential buildings in Siaulai © Siauliai City Municipality

Image 9: Buildings before refurbishment in Siauliai © Siauliai City Municipality

Low income single persons and families are supported by the law on social support. According to this law heating and hot water expenses are covered for eligible households, likewise offering funding for residents of multi-family buildings who participate in the modernisation programme of multi-family buildings. The initial financial contribution covers loan, interest rates and insurance fees of the loan.

3.3 Poland – Piaseczno

In Poland the Thermo Refurbishment Programme is available granting energy efficiency measures financial support. Eligible measures can be divided into two categories:
Realization of energy-saving measures providing at least 25 % energy savings based on energy audit or
Implementation of pure refurbishment measures in multifamily buildings that are used before July 14th, 1961 with at least 10 % energy savings calculated in refurbishment audit.
The Thermo Refurbishment Programme was implemented in 1998. The conditions for that programme are: 25 % reduction of the capital of the loan for at least 20 % of the equity capital and a minimum of 25 % in energy savings.
On 19th March 2009 the programme was extended to buildings constructed before 14th July 1961. Concerning thermal refurbishment it is possible to obtain 20 % loan capital limited to 16 % of the investment

costs and in addition to at most 2 years heat cost savings. In case of pure refurbishment measures, at least 10 % energy savings entail 20 % reduction of loan capital but, however, not more than 15 % of the actual investment costs.

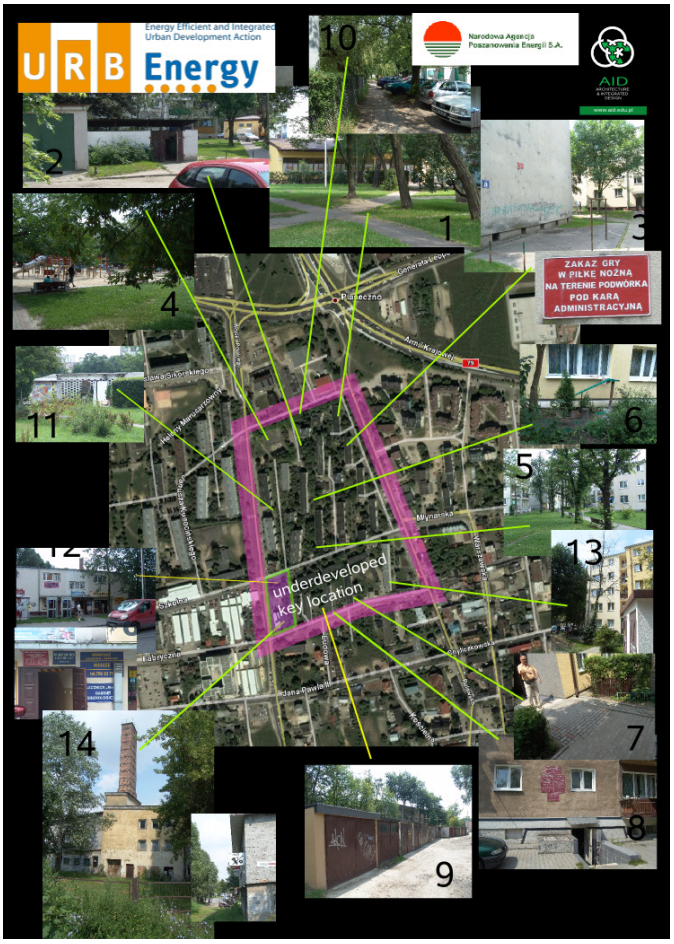

Diagram 4: Target area of Piaseczno
(Source: City of Piaseczno)

In the period from 2007 to 2010, Poland has used approximately 243.1 m € of EU Structural Funds (ERDF), which means 1.47 % of a possible maximum percentage of 3.0 %.

There is a subsidy programme for low income households that supports up to 50 % of the housing costs depending on the client's income.

In addition to the abovementioned support options, loans with subsidised interest rates are available (at least 3.5 %), which are provided by the Voievodship Funds of Environment Protection. These loans can be used for financing EER measures including implementation of RES. There are also subsidies available from ERDF via Regional Operational Programmes for the period 2007–2013, where EER measures in residential buildings are eligible, but under implementation of the "local development plans" elaborated by municipalities only.

In addition to this, there are loans available that contain subsidised interest rates (at least 3.5 %), which are provided by the Masovian Voievodship Fund of Environment Protection. These loans can be used for financing EER measures including implementation of RES and the modernisation of heating devices as well as district heating systems. The loan can be extended for up to 90 % of the investment costs for 15 years with an 18 month grace period. The ERDF funds in the Masovian Voievodeship are available for RES and measures concerning the revitalisation of city areas.

Considering the regulations for the CHP market, Poland has built up a certificate system: The CHP producers sell their electricity to the grid based on market prices and have the right to issue the certificates for power produced by CHP (red certificate) or by RES (green certificate). These certificates are subject to the trade among different utilities (power distribution companies), which are obliged by the law to purchase annual quantities of power from RES and from cogeneration.

Image 10: Refurbishment measures in Szkolna street, Piaseczno © Tomasz Pawlak and Janusz Bielicki

Poland did not set up financing instruments to support urban development (excluding ERDF funds available via Regional Operational Programmes mentioned above). There are only financing instruments for the support of house building as a grant to the

interest of the loan (interest rates less than 5 %). This can be extended to up to 70 % of the investment costs concerning long credit terms relating to municipalities, housing co-operatives and TBS (social housing societies) as possible beneficiaries.

Image 11: Deprived urban area in Piaseczno © Tomasz Pawlak and Janusz Bielicki

The integrated urban development concept for the target area in Piaseczno, developed separately, shows that this area can qualify as requiring special support, in the context of acquiring financing from the EU. With regard to modernisation measures, Piaseczno uses the thermomodernisation loan for energy efficiency in buildings, municipal budget for modernisation of public spaces, EU support in the form of a soft loan from JESSICA Urban Development Fund created by the Masovian Voievodship for replacement of individual hot water boilers by central hot water supply and for modernisation of public spaces.

3.4 Estonia – Rakvere

Since 2009 a Renovation Programme financed by a revolving funds scheme has been available. Energy efficient refurbishment measures are supported with very low interest loans. The total number of loan agreements concluded is 221 (up to 2009). The whole funds capital is about 49 m € and supports approximately 68,000 residential flats. The aim of the renovation loan is to support the renovation of apartment buildings and to raise their energy efficiency at least by 20 %, by improving the accessibility of loan capital through KredEx.

The product is targeted to the apartment associations, building associations (incl. previous housing associations) and communities of apartment owners. Furthermore various grant schemes are available.

- Loan for reconstruction of apartment buildings (the measure will be implemented centrally as a programme) – the purpose of the loan is to finance the comprehensive renovation works in apartment buildings and improve the energy savings (at least 20%) of apartment buildings. The loan and grant target groups are apartment associations and housing associations
- Grant for apartment buildings for energy audit, expert evaluation of a building and a building design following the recommendations of energy audit. The purpose of the grant for apartment buildings for energy audit, expert evaluation of a building and a building design following the recommendations of energy audit is to motivate the representatives of representatives of apartment buildings to negotiate with experts before the planning and performance of reconstruction work, and carry out the work according to the suggestions and following the construction law. From 25th June 2008, the grant has been financed from the European Structural Funds. The grant is up to 50% of the cost of services, but not more than 700€ per an apartment building for energy audit and expert evaluation of a building, and up to 50%, but not more than 4,000 € per apartment building for a construction design following the recommendations of energy audit.
- Grant for supporting the awareness rising of energy saving measures among residents of apartment buildings - the grant is directed to the awareness rising of people on the energy efficiency and possibilities and importance of energy conservation.

The grant amount is up to 35% of the work capacity. With the apartment building renovation loan with favourable interest rates introduced to the market in 2009 financing terms offered today for reconstruction of apartment buildings are better than ever before.

Image 12: Roheline konstruktor competition example for Seminari Street, Rakvere © KOSMOS architects

There are some additional options to support urban development or house building available in Estonia. Those financial sources are managed by the Ministry of Environment. In addition to them there is a smaller grant scheme from the municipalities if the funds do not cover the housing costs.

ERDF finances for example the following activities:

- Infrastructure projects linked notably to research and innovation, telecommunications, environment, energy management and transportation and
- Financial instruments (risk capital funds, local development funds, etc.) in order to support regional and local development and to foster cooperation between urban and rural areas.

Operational programmes are made for implementation of the National Strategic Reference Framework and already exist for Human Resource Development, for the Development of Economic Environment and for the Development of the Living Environment.

The Operational Programme for the Development of the Living Environment 2007–2013 guides the use of the European Regional Development Fund (ERDF) and Cohesion Fund (CF) in the areas of environmental protection, energy, local and regional development, education and health and welfare infrastructure development.

The priority axis "development of energy sector" will seek to improve the efficiency and environmental performance of the use of energy through supporting, on the one hand, broader use of renewable energy and, on the other hand, energy saving in distribution networks and by final consumers, including the housing sector. This priority axis is one of the three priority axes implementing the priority "Sustainable use of the environment" under the National Strategic Reference Framework. Support under this priority axis will be provided to operations reducing the adverse environmental impacts of the energy sector – the sector responsible for the highest pollution load among the economic sectors of Estonia.

The load of pollutant and greenhouse gas emissions from power production will be reduced both by minimizing losses in the production, transmission and final consumption of energy and by introducing environmentally friendlier power production technologies and pollution control equipment. Estonia holds the opinion that energy restructuring should continue to be stimulated mainly by fiscal and administrative instruments, while direct investment support should be limited to correcting market failures. It is therefore important to establish in identifying the operations to be supported whether there exist market failures related to energy conservation in housing and district heating systems, in particular lower capacity ones, or related to the construction or reconstruction of lower capacity power plants and boiler plants.

Operations to be supported:

- Reconstruction and renovation works to improve the energy efficiency of prefabricated housing blocks
- Performance of expert assessments and energy audits in prefabricated housing blocks
- Information and training to consumers concerning the possibilities and importance of energy conservation

KredEx activities (loan program, grant scheme, awareness raising campaigns/workshops) are supported from this axis (see also example for revolving fund in chapter 2).

3.5 Brandenburg

On federal level several support programmes for energy efficient refurbishment (EER) and renewable energy sources (RES) are available in the state of Brandenburg. Among others there are programmes for energy consulting, environmental protection, energy efficient refurbishment measures, heat pumps and solar technology. Those programmes are supported differently either by grants, low interest loans or by subsidised payments (for RES).

Furthermore the so called "investment pact programme", a federal funding programme finances refurbishment measures in municipal buildings of social infrastructure by direct grants. Its main target refers to the sanitation upgrade to new building standards (defined by a regulation for saving energy) and reduction of costs of primary energy demand for fossil fuel (incl. use of renewable energy). The conditions are quite moderate as the grant rate is up to 85 % allowance of the relevant costs and the equity ratio of municipality totals at least 15 %.

In the state of Brandenburg the regional funding bank "Investment Bank of the Land Brandenburg" (ILB) provides "municipality loans" financed by the German national funding bank "Deutsche Kreditanstalt für Wiederaufbau"(KfW). It supports energy efficient refurbishment of buildings and its aim is the funding of measures to improve energy efficiency in schools and kindergartens in derelict cities in Brandenburg. The improvement of the programme compared to the usual municipality loan of the KfW eligible to all German municipalities is the reduction of interest rate at 0.1 % for a maximum of ten years.

Additionally there is a supplementary variation of the KfW-ILB municipality loan available in Brandenburg paying regard to saving energy and a change to environmentally friendly energy sources. Excluding the loan's different scope, the financial conditions are comparable with the loan mentioned above.

In the field of urban development, there are different support programmes on federal level e.g. for social housing projects and the modernization of living area, as well as for the development of rural areas.

Brandenburg's funding features energy efficiency and the use of renewable energy sources distributed via grants, aiming to improve energy efficiency, to increase the share of renewable energy sources and innovative technologies and needed equipment. Support conditions depend on magnitude of implemented measures. The equity ratio, however, amounts to at least 25 % and the maximum grant support has to be less than 50 % of the total cost.

Another eligible financing option is the Brandenburg loan for rural areas, funding long term financing of investments among others in the subject of renewable energy and renewable resources. The support consists of interest rate reduction at maximum 0.2 % of the total investment sum.

The federal law for conservation, modernization and upgrading of combined heat and power (KWKG) regulates the commission of power feed produced from CHP with conventional or renewable energy. The latest change occurred in January 2009 commissioning an extra charge for the power-heat coupling energy that is fed into the public power grid. The amount of the charge for power-heat coupling energy per kWh conforms to the system category that has been determined in an approval procedure.

Concerning the financing instruments fostering the development of long-distance heat and renewable energy supply in Brandenburg the most eligible option tends to be the house building support.

Secondly there is the urban development support which supports the spatial concentration of urban

Image 13: Change of energy supply in Guben/Brandenburg © Ernst Basler + Partner AG

development and house building resources in city centres as well as special fields of activities underlining the general tendency that production of sustainable urban structures is deemed to be important.
In the field of urban development support in the framework of the energy and climate policy among others the preservation of quality of life in the cities by energy saving and environmentally aware measures in the building sector is an important topic. Therefore several programmes are available:

- Federal and state programs: e.g. urban remediation and development measures, urban reconstruction – east, investment pact (see above);
- EDRF programmes: e.g. sustainable urban development. The aim of the programme is an integrated and sustainable urban development for the removal of urban and ecological faults by modification, strengthening and adjustment of infrastructure. In this context sustainability generally means that the measures are bracing for the economy and self-supporting, ecologically acceptable and socially positively effective for long terms.

Regarding social housing support funding, rental and debt grant expenditure is entrenched in housing subsidy programmes, complying legal claims to subsidies for low income citizens up on the accommodation costs. The conditions of those funds depend on parameters as the number of household members, total income and acceptable rental/debt.

3.6 Schleswig-Holstein

According to comparatively high standard level in entire Germany, various subsidy programmes enrich Schleswig-Holstein's financial landscape, supporting e. g. innovative technical measures and municipal building measures (e.g. schools and kindergartens). Special initiatives of the German Energy Agency in cooperation with the KfW support high efficient refurbishment measures by increasing the subsidy asset ceiling. Additionally funding programmes offered by the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU) exist for the sake of energy efficiency concepts, employment of energy controllers in municipalities and implementation of energy efficient electric devices.
Moreover financial resources of the European Funds for Rural Development (EAFRD) bear financial means e.g. for installation of biomass CHP devices in rural areas. The subsidy asset ceiling depends on respective innovative approach of the plant in question. Support programmes for private households supplementing their energy consumption via heat pumps, thermo solar systems and energy efficient circulation pumps are available, too.
Concerning the regulations for power feed from CHP with conventional or renewable energy Germany set general standards by stipulations differing between conventional and renewable energy. Based on that, different payment levels and financing schemes are determined for different energy sources like mentioned above.
Different programmes support urban refurbishment and development measures. That is for instance the professional development of long-distance heat and renewable energy supply, acquiring approximately one third of the investment costs.
Some social programmes mainly provided by the KfW strive to integrate low income inhabitants, granting consistently low interest loans. One programme for example is attuned to young families with lower income and at least one child, offering the purchase of immovable property or accompanying the process of building a private residential building.

4 Findings and recommendations for innovative use of Structural funds

Findings

The analysis of the Urb.Energy project has shown that there are several support programmes available in the participating countries in the Baltic Sea Region, though not yet in Belarus. On the other hand there are still specific fields of energy efficient refurbishment (EER) and integrated urban development (IUD) that have not yet been considered or are not eligible in running programmes like for example the budget for the concept for integrated urban development itself or for some framework investments like the improvement of the grounds/gardens/technical facilities in a residential area. Most partners have funding options on national level. Some partner countries like Poland have the necessary structures for funding opportunities on a regional level. Others do not have these structures, but have programmes on local level like Riga/Latvia.

Mainly the available support programmes are about the promotion of EER investments in the residential sector. There are some programmes that support the development of the use of renewable energy sources for heat supply.

The financial support of IUD measures is underdeveloped in most of the project partner countries except Germany. Especially the integrated perspective to plan energy efficiency measures, investment in renewable energy and energy supply within the urban dimension through the development of an integrated urban development concept. In most of the cases, the focus is just set on the investment costs of retrofitting the buildings and/or the supply network, but the costs of setting up integrated urban development concepts and plans and the investment costs for improvement of the surrounding urban area are not considered.

Another result of the Urb.Energy project is that most of the support programmes are set up as a grant. That means that the money spent for the relevant measures cannot be reused. For investment purposes without payback or for property owners without credit worthiness/low income, this is an adequate procedure, but revolving urban development funds are financially more sustainable.

As a result of the Urb.Energy project, one can say that there is a significant lack of sustainable financing options for EER and especially for IUDCs. The EU gives some opportunities to close these gaps and set up support schemes on different fields. The list of available funding instruments within these guidelines shows that there are a lot of programmes that can be used for enhancing energy efficiency and the use of renewable energy in the building sector. The number of programmes in the field of urban development is significantly lower. To meet the target of Urb.Energy to set up revolving fund schemes for the support of EER and IUDCs, JESSICA appears to be the best choice. It should be pointed out that from the side of the EU, no other programmes than the Structural Funds are available. With ELENA, the EU offers an initiative for the support of preparatory actions like working out urban planning concepts but only for larger projects over 50 m € investment budget. Another point is that a linkage between the EER and RES support programmes and grant schemes financed by ERDF and the UDFs is missing.

One result of Urb.Energy is that it is useful to connect actions for the improvement of energy efficiency, renewable and energy supply with the urban dimension and develop integrated urban development concepts for selected urban areas or/and whole municipal area.

In many cases synergy effects could be capitalised on, for example if a heating grid is being upgraded, the opportunity could be reused to redesign the area also in terms of green spaces, sanitation and transport. This means that not only are different parties involved but different funding sources may also be necessary. The new approach of the cohesion policy

to focus on integrated urban projects is highly welcomed.

In many cases the lack of advance financial resources for qualified staff, for example, hinders the development of revolving funds. Establishing an innovative programme involves a lot of steps as mentioned above. Therefore the EU should offer a programme which helps the development of a revolving fund. The assistance should go beyond the technical assistance of ELENA. The money could for example be used to employ financial experts for a certain time.

General Recommendations

- European funds, being available for housing within the framework of an integrated development operation, should be applicable and used to a higher extent for the energy efficient refurbishment of buildings as well as the management and organisation structures for the energy efficiency modernisation process in the Urb.Energy partner countries.
- Investments into the energy efficiency of buildings should be done within an integrated strategy of upgrading the neighbourhood. The measures of the integrated strategy should not only promote improved living conditions, energy efficiency and the use of renewable energy, but also the creation of jobs, promoting investment and improving know-how and competitiveness.
- To encourage property owners to invest in the rehabilitation and energy efficiency of their property, adequate financing schemes on national, regional and local level need to be developed. Revolving loan funds with low interest rates in combination with direct grants, aligned to energy efficient refurbishment measures, are useful to reduce the investment costs and/or the payback period.
- Homeowners in the new EU Member States are often reluctant to borrow money. Therefore, financial support schemes combining loans with grants need to be promoted and explained via awareness and information campaigns to encourage private investments.
- Many homeowners in the new EU Member States are owners of their apartments, without being likewise co-proprietors of the building ground and plot. Therefore, they often cannot offer the securities demanded to get loans for energy efficient refurbishment measures. Public authorities in these countries should be urged to transfer the respective plots of land and/or the leasehold for residential buildings to the apartment owners. Homeowners and their associations could in this way become efficient partners and actors in the EER process.
- Loan applicants should be eligible to receive financing even for small measures step-by-step, not demanding measures covering the total extent of desirable improvements. Low acceptance of loans could be reduced by disassembling the totality of necessary EER measures into a series of steps, beginning with those measures producing a maximum of energy saving effect.
- Complex application or transactional procedures of financing instruments and grant or loan schemes can hinder their acceptance.
- Institutional structures for the implementation of financial schemes should be strengthened by adequate financial means, staff, technical equipment and appropriate framework conditions for loan securities.

5 Appendix

List of Images

List of Diagrams

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List of Abbreviations

CHP	Combined Heat and Power/ Cogeneration plant
EEC	Eastern European Countries
EEEF	European Energy Efficiency Fund
EEPR	European Energy Programme for Recovery
EER	Energy Efficient Refurbishment
ERDF	European Regional Development Fund
ESCO	Energy Service Company
GHG	Green house gas emissions
ILB	Investitionsbank des Landes Brandenburg (Regional funding bank of the Federal State of Brandenburg)
IUD	Integrated Urban Development
IUDC	Integrated Urban Development Concept
JESSICA	Joint European Support for Sustainable Investments in City Areas
KfW	Kreditanstalt für Wiederaufbau (KfW Banking Group)
KREDEX	Credit and Export Guarantee Fund KredEx
MA´s	Managing Authorities
MS	Member States
MWh	Megawatt hour
NMS/EU-12	New Member states of the EU since 2004
OP	Operational program
RES/REN	Renewable Energy Sources
TA	Target Area
UDF	Urban Development Fund
WP	Work Package