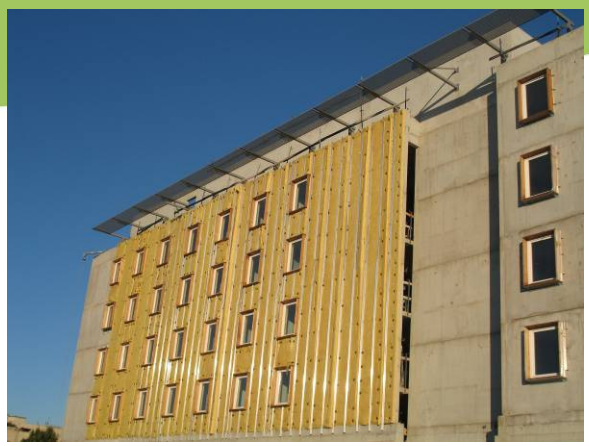
FinSH Financial and Support Instruments for Fuel Poverty in Social Housing

Energy efficiency refurbishment: financial products – case study report



Intelligent Energy Europe

This document has been produced as part of the FinSH project – Financial and Support for Fuel Poverty in Social Housing.

The FinSH project was established to develop support materials with regard to 'energy poverty' in social housing. It is a partnership of organisations in 5 countries: France, Germany, Italy, Poland and the UK. The project runs from December 2007 to May 2010.

This document is prepared by:

KAPE - Krajowa Agencja Poszanowania Energii S.A. (National Energy Agency of Poland)

With the input from:

GERES - Group for the Environment, Renewable Energy and Solidarity (France)

SWEA Severn Wye Energy Agency (UK)

Otto-von-Guericke-Universität Magdeburg - Forschungsgruppe Umweltpsychologie (Germany)

Ecuba S.r.l. (Italy)

SCIC Habitats Solidaires (France)

Contact person:
Marie-Maud GERARD
Project coordinator - GERES
mm.gerard@geres.eu
00 33 (0)4 42 18 55 88

The FinSH project is supported by:

The **Intelligent Energy – Europe** program of the European Union.

ADEME (French Environment and Energy Management Agency) and **Fondation Abbé Pierre** (French charity foundation) co finance GERES.

Table of contents

1. Introduction

The important social problem of fuel poverty had not been identified until the 1970s and 1980s. Fuel poverty arose as a result of a rapid increase in the prices of the basic energy carrier – oil. Supply of heat or electricity is a vital public service. A right to accessibility and reasonable price of this service was emphasized in the Lisbon Treaty, protocol 9, art. 14. However, the dramatic rise of demand for energy at internal markets of member states contributes to breaching this right, without attaching adequate importance to the social situation. For many people experiencing poverty this means choosing either to eat or to heat. Fuel poverty is influenced by many factors, such as the following:

- Insufficient income of a household
- High energy cost in a household
- High level of energy consumption, resulting from ineffective energy use

Also, people with lower income pay relatively more for supplied energy, as compared to those with higher income. Fuel poverty leads to increasing indebtedness of people with low income and inability to cover current energy bills, which consequently results in the energy company disconnecting the user from the supply network. There are also cases of voluntary renouncing of energy supplies or actions against the law, such as illegal connections.

Accepting the climate and energy package by the European Union will have specific consequences not only for the competitiveness of member states economies but also for the income situation of their citizens. Undoubtedly, therefore, the development of renewable energy sources and imposing environmental costs on energy producers will be reflected in higher prices of electricity, gas and heat, which will affect individual customers. The issues related to energy costs are generally studied by economics and only indirectly by the social policy. One should, however, bear in mind that higher spending of households will raise the risk of poverty and social exclusion, presenting challenges to the social policy.

The obligations that have been imposed on member states by the European Council until 2020 are as follows:

- reduction of greenhouse gases emission by 20% relative to 1990 (if the post-Kyoto agreement is concluded, the EU will reduce emission by up to 30%);
- 20% of total energy consumed in the EU will come from renewable sources;
- energy efficiency will increase so that the EU saves 20% of consumed energy relative to the current estimates of consumption in 2020;
- biofuels will comprise at least 10% of fuels used in transport in each member state.

Implementation of the above goals will entail transformation costs. In the EU a system of trade of carbon dioxide (CO2) emissions has been created. Each country is given a free limit, which is partitioned between its companies. After 2013 free national limits will be abolished. Obligatory reduction of emission will be painful for the private sector if energy producers have to pay for rights to emission.

Due to the diverse social policies in EU member states, the problem of support mechanisms for socially vulnerable customers on the electricity, heat and gas fuels market has been resolved in several ways.

2. A survey of case studies

The Carbon Emissions Reduction Target (CERT) – United Kingdom

The UK government has placed an obligation, called 'Carbon Emissions Reduction Target' (CERT), by legislative[1] means on energy suppliers[2] to help householders reduce their carbon footprint. CERT came into effect on 1 April 2008 and will run until 2011. Its aim is to deliver overall lifetime carbon dioxide savings of 154 MtCO2 – equivalent to annual net savings of 4.2MtCO2 by the end of the programme, and equivalent to the emissions from 700,000 homes each year – and will stimulate about £2.8 billion of investment by energy suppliers in carbon reduction measures. CERT can be accessed through referral by local authorities or the Energy Saving Trust advice centres. This is currently marketed through the Energy Saving Trust's brand "ACT ON CO2". Energy suppliers also use a direct-marketing approach. For social housing providers CERT can be accessed by partnership working either directly with an energy supplier or through specialist managing agents, or by having contracted agreements with the local energy advice centre.

Factors of Creation

The first programme called *'Energy Efficiency Standards of Performance'* (EESoP) programme was created in 1994. Two further EESoP programmes followed, in 1998 and 2000. EESoP 1 and 2 targets were set on the Public Electricity Suppliers (PESs) with an allowance through the supply price control (and the1998 supply price restraint) to collect £1 per franchise customer per annum. To reflect the liberalisation of the market, in 2000, EESoP 3 targets were placed upon all licensed gas and electricity suppliers with at least 50,000 domestic customers with an expenditure target increase to £1.20 per customer per fuel per annum. In the first 8-years EESoP delivered energy saving measures to 4.5 million households with an annual energy saving of 21,099 GWh and fuel bill savings of £80 million and reducing carbon dioxide emission by 6 million tones[3].

The Utilities Act 2000 gave powers to the Secretary of State to set the overall energy efficiency targets on suppliers. The *'Energy Efficiency Commitment'* (EEC), which ran from 1 April 2002 to 31 March 2005, replaced the third EESoP programme with targets that were over three times the size of those imposed under EESoP 3 and were expected to achieve energy savings of 62 TWh, with a target based on spending £3.60 per customer per fuel giving an overall scheme value of £500 million. The second phase of the EEC ran from 1 April 2005 to 31 March 2008[4]. EEC3 Energy Efficiency Commitment 2008-11 become known as the *'Carbon Emissions Reduction Target'* (CERT)[5]. The CERT Order was made under powers in the Gas Act 1986, the Electricity Act 1989 and the Utilities Act 2000. These powers were amended by the Climate Change and Sustainable Energy Act 2006.

---

[1] The Electricity and Gas (Carbon Emissions Reduction) Order 2008
http://www.opsi.gov.uk/si/si2008/uksi_20080188_en_1
The Order is administered and enforced by the Office for Gas and Electricity Markets (Ofgem) -
http://www.ofgem.gov.uk/Pages/OfgemHome.aspx

[2] British Gas, ScottishPower, N-Power, E-ON, Scottish & Southern and EDF Energy.

[3] For more information on EESoP see:
http://www.ofgem.gov.uk/Sustainability/Environmnt/EnergyEff/Documents1/4211-EESoP_report_July03.pdf

[4] For more information on EEC see:
http://www.defra.gov.uk/environment/climatechange/uk/household/supplier/eec.htm

[5] For more information on CERT see:
http://www.defra.gov.uk/environment/climatechange/uk/household/supplier/index.htm

Description

Suppliers must direct at least 40% of carbon savings to a priority group of low-income and elderly consumers. The remaining 60% of carbon savings is to be met by all other householders in both public and private sector accommodation. The CERT Priority Group is defined as householders in receipt of the following benefits or tax credits:

- council tax benefit
- housing benefit
- income support
- income based jobseekers allowance
- attendance allowance
- disability living allowance
- disablement pension which includes a constant attendance allowance
- war disablement pension which includes a mobility supplement or a constant attendance allowance
- child tax credit (where the consumer's relevant income is £15,592 or less)
- working tax credit (where the consumer's relevant income is £15,592 or less)
- state pension credit and all householders with one or more members aged 70 or over.

The amount of grant assistance available is totally to the discretion of the individual energy supplier as the programme is based on carbon savings. The total target for 2008-11 for all energy suppliers is 42 million tones carbon for the whole of Great Britain. The specific activities will be determined by the suppliers themselves, within a framework produced by DEFRA allocating agreed savings to different measures. Following the consultation, and in partnership with BRE & Ofgem, Defra have now produced firm carbon savings for most microgeneration measures. These measures are:

- Biomass boilers for individual dwellings
- Wood log stoves
- Wood pellet stoves
- Ground source heat pumps
- Solar thermal (flat plate & evacuate tube type)
- Solar PV
- Roof-mounted micro-wind
- Pole-mounted mini-wind
- Micro-CHP (Stirling engine)
- Micro-hydro

For some forms of microgeneration - air source heat pumps and fuel cells - there is still insufficient evidence to set a carbon saving. These measures should be installed via the 'demonstration' funding route.

Community heating systems are also eligible for CERT support. Three kinds of these systems have been included in the illustrative mix: community biomass heating, community biomass CHP and community ground source heat pumps.

The table below is an extract taken from the 'Illustrative Mix' which is a tool that allowed the Government to develop the CERT programme.

Cost Effectiveness Ranking of Different Measures in the Priority and non-Priority Groups (Microgeneration & Community Heating Measures **in Bold**)[6]

Rank in PG	Measure	Rank in non-PG	Measure
1	**Community heating with wood chip**	1	**Community heating with wood chip**
2	Loft insulation (DIY)	2	Loft insulation (DIY)
3	Appliances iDTV's	3	Appliances iDTV's
4	CFLs – retail	4	Tank insulation – top-up
5	Tank insulation – top-up	5	CFLs – retail
6	Cavity wall insulation	6	Cavity wall insulation
7	Fuel switching	7	Fuel switching
8	Loft insulation (professional)	8	**Micro hydro (0.7kWp. 50% LF)**
9	CFLs – direct	9	Loft insulation (professional)
10	A/B rated boilers (exceptions)	10	**Ground source heat pumps**
11	SWI internal	11	**Wood pellet boilers (primary)**
12	**Ground source heat pumps**	12	Heating controls – extra
13	Heating controls – extra	13	SWI internal
14	**Wood chip CHP**	14	CFLs - direct
15	Draught proofing	15	**Log burning stoves**
16	PC mains panels	16	Wood pellet stoves (secondary)
17	Appliances – cold	17	Efficient halogens
18	**Wood pellet boilers (primary)**	18	Insulated wallpaper
19	Micro hydro (0.7kWp. 50% LF)	19	SWI external
20	SWI external	20	Draught proofing
21	Insulated wallpaper	21	Appliances – cold
22	Efficient halogens	22	A/B rated boilers (exceptions)
23	**Log burning stoves**	23	**Wood chip CHP**
24	Glazing E to C rated	24	PC mains panels
25	**Mini-wind 5 kW. 20% LF**	25	**Mini-wind 5 kW. 20% LF**
26	**Wood pellet stoves (secondary)**	26	**Photovoltaic panels (2.5 kWp)**
27	**mCHP**	27	Glazing E to C rated
28	Heating controls – upgrade with boiler	28	Heating controls – upgrade with boiler
29	**Photovoltaic panels (2.5 kWp)**	29	mCHP
30	Appliances – wet	30	**Solar water heating (4m^2)**
31	LNB's	31	LNB's
32	Energy saving kettles	32	**Micro wind (1 kWp. 10%LF)**
33	**Solar water heating (4m^2)**	33	Appliances – wet
34	**Micro wind (1 kWp. 10%LF)**	34	Energy saving kettles
35	**Community GSHP**	35	Community GSHP

[6] Source: http://www.opsi.gov.uk/si/si2008/em/uksiem_20080188_en.pdf

On the 11th of September 2008, the UK government announced that a further £560 million will be added to the pot for the current CERT programme which will benefit another 2 million households. Another £350 million from energy suppliers and electricity generators will go towards a new 'Community Energy Saving Programme'.
Data about the current CERT programme is not available as it has only be running since April 2008. Data for the previous EEC programme is shown in the tables below.

Funding Split during the EEC1 2002-5 Programme

	Energy Supplier £M	Householder Contribution £M	Social Landlords £M	Total £M
Priority Groups	318	31	112	461
Other Householders	213	152	45	411
Total	531	183	157	872

Energy suppliers EEC contributions to Social Housing Landlord contributions were high for insulation (55-75%); around 35% for boilers; but small for very expensive measures, for example, around 10% for fuel switching and solid wall insulation.

Measures Installed and Energy Savings during the EEC1 2002-5 Programme

	Number of Measures Installed			Total Energy Savings (GWh FS)
Energy Efficiency Measure	**Priority group**	**Non-priority group**	**Total**	
Cavity Wall Insulation	441, 213	350, 311	791, 524	25, 069
Loft Insulation (top up)	343, 467	185, 029	528, 496	4, 139
Loft Insulation (virgin)	142, 361	83, 884	226, 245	9, 697
DIY Loft Insulation	44, 434	310, 663	355, 097	8, 101
Draught Stripping	15, 516	7, 227	22, 743	39
Tank Insulation	98, 650	97, 182	195, 832	434
Radiator Panels (m^2)	27, 574	11, 304	38, 878	13
Solid Wall Insulation	17, 352	6, 378	23, 730	973
Other Insulation	617	2, 008	2, 625	21
EE Cold Appliances	589, 357	2, 366, 727	2, 956, 084	7, 381
EE Wet Appliances	671, 693	2, 880, 044	3, 551, 737	2, 260
Other Appliances	19, 932	73, 905	93, 837	42
A & B Rated Boilers #	104, 364	174, 627	278, 991	2, 362
As Above + Controls	22, 769	64, 728	87, 497	1, 233
Heating Controls	105, 574	338, 623	444, 196	1, 220
Fuel Switching	20, 432	20, 645	41, 077	2, 763
CHP/Community Heat	403	212	615	39
Other Heating	126	76	202	5
Low Energy Light Bulbs	24, 203, 630	15, 533, 940	39, 737, 570	20, 977

Success and Difficulties

Previous programmes have achieved significant carbon savings, and this new one builds on these successes and effectively doubles the target. It engages fuel suppliers directly in carbon saving as well as supply, and may ultimately be instrumental in shifting the business model for these companies to a more energy services based one. It has engaged many suppliers in partnerships across sectors, and added a new dimension to role in relation to social exclusion/poverty for these relatively powerful private companies.

One downfall of the current programme is that market penetration of the other technologies needed to achieve lower carbon targets will only be achieved in the medium to longer term – probably in the post CERT 2011 onwards scheme.

There are conditions linking CERT to other funding e.g. Warmfront and Low Carbon Buildings Programme to avoid the double claiming of savings therefore the use of CERT with other government funding streams is often not permitted.

0% interest rate loan and tenants financial involvement in Italy

In Italy 80% of households own the house they live in and 20% rent a house. Social housing covers about 2 % of this 20. A lot of owners have recently found themselves in a new category, becoming fuel poor owners almost over night, due to the increase of the energy prices. The energy poor owner (FPO), or also new poor, is part of a more numerous group of people that has to face up with the same problem as the other category but for whom no structure was available, no channels (social and/or economic) to provide help were existing.

Two case studies are presented below. The first one describes a possibility to FPO's to retrofit their houses in order to save money on the energy bills through a (more) sustainable energy performance by providing a zero interest loan with the aid of a local institution; the second one shows how local governmental bodies (sustained by financial institutions) assist fuel poor households in the social housing sector via long term solutions for energy saving.

PROVINCE OF MILAN CASE STUDY

The Province of Milan with the support of several Banks will co-finance retrofitting for house owners. The loan is offered at a zero interest rate, only for works concerning energy efficient measures and/or the use of renewable energy installations for heating (systems) and sanitary water. At the moment there is no income threshold for granting a zero interest loan.

Factors of creation

The main initiating body is the environment department of the Province, and the measure is prevailingly developed with the scope to decrease the primary energy use in the Province by promoting energy efficiency and the use of RES in the residential sector.

The initiative has been launched by the councillor to the Environmental Department of the Milan Province. The Milan Province, having as one of its priorities the objective to save 35.000 tep/year of the consumption of primary energy in the civil sector. The Province has obtained the collaboration of six banks on the territory that have guaranteed to allow the applicants a zero interest loan.

Description of the product

The beneficiary can be any house owner and tenants or others being entitled or otherwise authorized to alter the state or structure of the house or building. The implied actors are:

- The Province of Milan
- Department of Environment of the Milan Province
- Credit Union Bank of Barlassina

- Credit Union Bank of Carate Brianza
- Credit Union Bank of Carugate
- Credit Union Bank of Cernusco sul Naviglio
- Credit Union Bank of Lesmo
- Credit Union Bank of Sesto San Giovanni
- Private House owners

a) Financial details

The citizen that presents a request and obtains a loan is obliged to open an account at the bank through which the financial agreement must be settled. The interest rate applied to the loan is fixed at 5% for a maximum of 7 years. The costs of the interest will be entirely financed by the Province of Milan and the bank in two equal parts: 50% each. However, the instalments will be partitioned into a capital part and interest part, and will have to be paid until the intervention is in progress. They will be paid back to the client only after the works have been finished and the evaluation commission has approved the works have been done in compliance with the established rules. From this point on the bank starts to pay back the interests paid by the client. In case the client decides to extinguish the loan in anticipation the bank will not correspond the interest quota on the remaining instalments at the date of redemption. The maximum period is seven years, except for those cases in which the minimum amount of loan allowed is requested, i.e. € 2.500,00. In this case the maximum period varies from 24/36 months. The instalments are every semester and are fixed.

b) Technical details

The building must be on the territory of the Province of Milan, in the area where the banks are authorized to operate. Interventions admitted for a loan request are the following:

- insulation of roof, attic and terrace;
- wall insulation, including the substitution of all fastenings and double windows
- substitution of condominium heating system, complete with separate thermo-control of every shell and every unit must have a meter system;
- installation of central heating systems with a meter and control systems for each unit;
- realisation of solar thermal system for hot sanitary water;
- installation of solar thermal heating systems, if connected with a low temperature heating system;
- realisation of geothermal heat pump / air-conditioning system, only if the feed a network of a low temperature heating system;
- realisation of PHV installation but not bigger than 20kW and must be connected to the grid.

The costs incurred for the energy performance analysis of the building / apartment, the energy certificate, the planning and programming of the intervention, the realisation and inspection of the works or installation costs are all eligible for the zero interest loan.

The request for a zero interest loan must fulfil all the requirements set by the bank and the Province:

1. Application for request as provided by the Province or the banks

2. Technical description, comprising:

- energy performance analysis of the system/apartment/building for which energy saving measures are proposed;
- description of the interventions proposed;
- quantification of the energy saved by the proposed intervention in tep;
- a detailed plan of the works, including certification of the materials, components and systems to be used;
- estimated amount of the works.

3. Declaration of the responsible subject in charge of the intervention guaranteeing the results as described in point 2;

4. Copy of the requested and obtained authorizations by the local authorities;

5. Income declaration of the applicant;

6. In case of estates with an energy service/supply contract the requirements are described in a specific document;

7. If works include common parts in a condominium, its administrator shall present the request, including a condominium "agreement" /deliberation or a list of people inside the condominium that desire to adhere. The administrator collects the adherences and includes the list to the request. The income declaration of each applicant can be presented directly to the bank;

8. Authorization of the owner must be presented in case the intervention is proposed and presented by a subject different from the owner;

9. Declaration authorizing experts from the Province or bank to control on site;

10. Declaration of recession to the Province and bank of the energy efficiency certificate, as by the Ministerial Decree of July 20th 2004.

Once the works are finished the client shall present the following documents:

- Request for loan as by attachment 3;
- Declaration of compliance with the regulations;
- Declaration of compliance with the approved signed technical statement by installer;
- Copy of the invoices of the costs incurred, separating materials from labour;
- Declaration of the client not to have produced false documents.

The requests presented will be evaluated in chronological order of presentation date to the bank by an evaluation commission composed by functionaries and experts of the Province and the bank. The commission is authorized to carry out inspections or order third parties to carry out on spot inspections on their behalf, examine the proposals and request further information and/or integration of the documentation. After positive evaluation of the documents and plans presented, the client can sign the contract for the loan. The bank will inform the Province of the signature of the deed.

SANT ILARIO D'ENZA CASE STUDY

This agreement is developed and signed by the Municipality of Sant Ilario D'Enza (Reggio Emilia) assisted by the Regional Social Housing Association (ACER Reggio Emilia) and two Tenants Associations. The homes of 43 households will be retrofitted so that the tenants will save on energy bills. They agree to finance in part the retrofitting through a monthly increase of the rent (warm rent); the other part will be financed by the Municipality. The augment in rent is 50% lower than the estimated monthly savings on the energy gained through improving energy performance. The agreed parties will open a regular loan by a regular bank, running time 15 years, and the costs are divided as follows: 66% will be financed by the Municipality and 33% by the tenants.

Factors of creation

The ACER Organisation was created by the Regions in order to have a special dedicated body taking care of the maintenance of the social houses and their management. The territory the ACER moves upon is the Province. Every Province has its provincial ACER. Behind the ACER lies the Province which is fed by the Municipalities that constitute it. A Region sets out the rules and regulations, administrative procedures and financing mechanisms, while the Provinces plays a managing role, the Municipalities take care of the social aspects of which the ACER is the operative body. The Municipalities see to the application of the social policy.

- Description of the product

The main target group is the fuel poor households that live in social houses managed by the ACER organisation. The implied actors of the initiative are:

- The municipality of Sant Ilario D'Enza
- The ACER Organisation of Reggio Emilia
- The National Tennant Syndicate Association
- The Regional Tenants Association
- The Tenants of the retrofitted apartments
- Extended: All Tenants of ACER

a) Financial details

The Municipality – apart from regular obligations toward the social housing policies - has:

- adopted the commitment to make interventions regarding their property (social houses) by reducing managerial costs and energy bills and subsequently actively sustain environmentally sustainable policy;
- Adopted the commitment to promote energy saving initiatives in social housing;
- Budgeted 15% (10.625 €) of the annual social housing rental income and invested this amount in energy saving measures through ACER.

The costs of the works are estimated in 166.000 € and will be financed by a loan over 15 years, with an annual instalment of 16.000 €. 66 % of the instalment is financed by the Municipality (10.625 € of the total annual of 16.000 €) and 33 % by the tenant. This results in a 10,5 € increase on the monthly rent for each of the 43 tenants. The amount of energy savings as estimated by the ACER association equals 250 € per family per year. The apartments have a central heating system and each tenant pays a percentage of the total energy bill of all the tenants that benefit of this heating system, which is based on the surface area of an apartment. The retrofitting proposal foresees changes in the heating system so that each tenant has his own meter showing the heating / energy consumption. Each tenant will thus pay 10,5 € more rent per month, saving an average 20,83 € per month on the energy bill.

b) Technical details

All parts have otherwise agreed that the interventions / retrofitting will include the following:

- substitution of the heating system by a condensation heating installation
- substitution of the sanitary water heating boiler system
- installation of a heating meter system in every single apartment
- attic insulation measures

The ACER Association will realize the works necessary for the energy savings in the apartments, anticipating all costs through a bank loan with a running time of 15 years.
This initiative has been discussed and approved by the members of the Tenants Association. Both associations have signed the agreement stating that ACER guarantees the works and financial conditions, while the Tenants Association guarantees the payments through the instalments and that a possible new tenant does not compromises the agreement, to submit the latter a rental contract that obliges to respect the agreement. ACER takes care of the meter system readings and the single household accounts regarding energy consumption. After three years of installation ACER will produce a detailed report of the energy consumption indicating which has been the amount of energy saved in comparison to the consumption period 2006/2007.

Conclusions

Both initiatives basically represent good opportunities for energy poor people. At Sant Ilario D'Enza energy poor households are the first to benefit from the measures, also safeguarding the tenants from any possible financial risk as this lays with the Social Housing Organization which takes care of all administrative tasks as well, so as to keep the energy poor households free from whatever pressure of this kind. The initiative that involves the Province of Milan is quite promising. However, in general it does not advantage the poorer households or owners. The house owner, in order to start the works, will have to make an investment. This implies that those who need it most will hardly be of the idea or unable to obtain a loan for even the smallest of energy efficient investments. The mechanism is therefore more appropriate – also in this case – for social housing associations as ACER that will have to propose themselves.

CO2 Building Rehabilitation Programme in Germany

The *CO_2 Building Rehabilitation Programme* (CO_2 Gebäudesanierungsprogramm) was designed to be an essential instrument in order to stimulate and accelerate energy-efficient processes in the building sector on a national level and thus help to implement the standards of the Energy Saving Ordinance (Energieeinsparverordung, EnEV). The programme was launched in 2001 and is promoted by the Federal Ministry of Transport, Building and Urban Affairs (Ministerium für Verkehr, Bau und Stadtentwicklung, BMVBS) and coordinated by the KfW Bankengruppe (Kreditanstalt für Wiederaufbau). The KfW is a bank owned by the Federal Government (80%) as well as its federal states (20%) and has been promoting CO_2 reduction programmes in the building sector since 1990. The programme has been provided on a national level, but is carried out by local banks. Some German federal states are supporting the programme with special acknowledgements like a reduced interest rate. The German Energy Agency (Deutsche Energieagentur, dena) coordinates a model project[7] that includes a supplementary grant for the implementation of highly efficient solutions. In February 2006, the funds for the *CO_2 Rehabilitation Programme* were increased to around EUR 1 milliard per annum for the next four years. Due to the great demand, another EUR 350 million were added in 2006 and EUR 500 million in 2008. Starting in April 2009, the new programme *Energy Efficient Retrofit* (Energieeffizient Sanieren) will combine the *CO_2 Rehabilitation Programme* and the programme *Housing Modernisation – ÖKO PLUS*, which promotes single energy efficient measures.

Description of the product[8]

The loan version of the programme is intended for everyone investing in owner-occupied dwellings or rented residential buildings, for example private individuals, housing companies, housing cooperatives, operators of residential establishments, municipalities, municipal associations, districts or other bodies and institutions incorporated under public law. The grant version is reserved for owners (natural persons) of self-used or rented one- or two-family houses and owners (natural persons) of self-used or rented freehold flats in flat-owner-communities (with natural persons as flat-owners). The programme was designed for all residential buildings that were completed before 1984 (category A) or before 1995 (category B), including hostels, homes for the elderly and nursing homes. Investors have to contact their house bank in order to apply for subsidy and it is the respective bank that is responsible for the disbursement.

---

[7] Further information (available in English) including best practice examples: http://www.zukunft-haus.info/de/projekte/niedrigenergiehaus-im-bestand/efficient-homes-english.html, 11.03.2009

[8] Source: http://www.kfw-foerderbank.de/DE_Home/Bauen_Wohnen_Energiesparen/Darlehensprogramme_fuer_Wohnimmobilien/index.jsp, 11.03.2009

The programme comprises two categories. The regulations for category A stipulate the consultation of an authorised expert, who defines the kind of rehabilitation measures that have to be implemented in order to meet the standard of a new building according to the Energy Saving Ordinance (EnEV). In category B one of the packages of measures that are listed in table 1 has to be chosen. Depending on the respective package, the measures have to be applied to all windows, all exterior walls, the entire roof, etc. Exceptions from this needs to be justified by an expert. In both versions, the measures have to be carried out by one or several specialised firms. The related invoices, which must specify the labour costs, have to be submitted to the local bank.

Table 1 : Available measure packages for category B of the *CO_2 Building Rehabilitation Programme.*

Measure	Package				
	0	**1**	**2**	**3**	**4 ***
renewal of heating technology		X	X	X	X
renewal of windows	X		X	X	X
installation of ventilation system					X
insulation of outer walls	X	X		X	X
insulation of roof and/or highest floor slab	X	X	X		X
insulation of basement, ceiling, walls between heated and unheated rooms and ground-striking walls/floorspace	X		X		X

** at least three measures have to be chosen by an authorised expert*

All investors may opt for the loan variant that covers up to 100% of eligible costs[9] including incidental costs (max. EUR 50000 per living unit). They receive a long-term loan (4-30 years) with redemption-free grace years at a clearly reduced interest rate[10]. The interest rate is fixed within the first 10 years. In Category A investors will receive an additional repayment bonus: If the building meets the new building standards after the rehabilitation, 5% of the loan won't have to be repaid. The bonus will be increased to 12.5% if a standard is achieved that is 30% better than the new building standard according to EnEV and it will be raised up to 17.5%, within the dena model project, for a standard better than 50%.

Alternatively, owners of one- or two-family houses as well as owners of private apartments in home ownership associations may apply for the grant version. The amount of the grant depends on the planned category and amounts to 10% (new building standard according to EnEV) or 17% (at least 30% better than the new building standard). Construction supervision will be promoted with a grant up to 50% of the supervision costs (max. EUR 1000 per living unit) in both the grant and the loan version.

[9] List of eligible costs : http://www.kfw-foerderbank.de/DE_Home/Bauen_Wohnen_Energiesparen/Darlehensprogramme_fuer_Wohnimmobilien/Co2-Gebaeudesanierungprogramm_neu/Liste_foerderfaehiger_Kosten/Liste_der_foerderfaehigen_Kosten_130_143_430_2008_02.pdf , 11.03.2009

[10] 1.4% (20 years, 3 redemption-free grace years), 1.7% (30 years, 5 redemption-free grace years), Source: https://www.kfw-formularsammlung.de/KonditionenanzeigerINet/KonditionenAnzeiger?Bankengruppe=1392435951&Programmgruppe=1881462390, 11.03.2009

Starting in April 2009, the new programme Energy Efficient Retrofit will cause the following main modifications:

- Single measures in category B can be combined freely without the necessity to consult an expert or stick to specific rehabilitation packages
- The maximum subsidy per living unit will be increased from EUR 50 000 to EUR 75 000
- All buildings built before 1995 will be eligible for both categories
- There will be special grants for construction supervision, replacement of electrical storage heating systems, optimisation of the heating system
- All private investors can apply for the grant alternatively to the loan version

Success and difficulties

In 2007[11], 0.06% of all dwellings have been retrofitted by means of the *CO_2 Rehabilitation Programme*. Table 2 shows the usage of the programme in 2007.

Table 2 : Usage of CO2 Rehabilitation Programme in 2007.

	Loan version	Grant version	Overall
total number of cases	20 582	2 791	23 373
total number of dwellings	83 345	5 245	88 590
total living space	7.2 Mio. m^2	0.55 Mio. m^2	7.75 Mio. m^2
total volume of loan/grant	1.9 Bill. Mds €	15 Mio. €	1.9 Mds. €
Volume/case	90 400 €	5 200 €	-
Average number of dwellings/case	4.05	1.88	3.79
Average living space/case	351 m^2	198 m^2	332 m^2

The overall CO_{2e}[12] reduction achieved as a consequence of retrofit measures promoted through the *CO_2 Rehabilitation Programme* amounts to 330 000 t/year (grant version: 20 000t, loan version: 310 000t), which equates to a total reduction of 50%. The overall reduction of final energy amounts to 940 GWh/year (reduction of 45%). Taking into account the samples[13] from which those projections originate, every promoted Euro initiated a reduction of 0.17 kg CO_{2e}/a and 0.46 kWh/a in the loan version (grant version: 1.45 kg CO_{2e}/a; 5.12 kWh/a). Direct effects on employment amount to 16.5 person years per EUR 1 milliard invested. The estimated overall reduction of heating costs sums up to EUR 67.3 milliard in 2010 and EUR 85.9 milliard in 2036. Thus, in terms of figures about 75% of the investment costs would be returned by the saved heating costs. In most of the cases windows have been replaced (completely or partially) (85% of the cases) and the buildings' insulation has been improved (roof/ceiling: 88%, outer wall: 82%, basement floor: 64%). The standard of insulation usually exceeds the requirements of the Energy Saving Ordinance concerning the insulation layers by 50-70% on average. More than 75% of the buildings had already been equipped with at least

[11] Source: Bremer Energieinstitut, Institut Wohnen und Umwelt GmbH & Universität Bremen (2008). Effekte des CO_2-Gebäudesanierungsprogramms 2007. http://www.kfw-foerderbank.de/DE_Home/Bauen_Wohnen_Energiesparen/Darlehensprogramme_fuer_Wohnimmobilien/Co2-Gebaeudesanierungprogramm_neu/Gesamtes_Gutachten_fuer_Foerderfaelle.pdf, 11.03.2009

[12] The CO_{2e} value includes emissions caused by upstream chains of transport, fabrication etc.

[13] loan version : N=599 cases ; grant version: N=59 cases

double glazed windows ahead to the modernisation. While a ventilation system has been implemented in few of the cases only (7%), the heating system has been replaced in almost 75% of the buildings, which led to a significant increase of central heating systems.

Criticism on the *CO_2 Rehabilitation Programme* mainly refers to the programme's original focus on loans instead of grants. It is assumed that special groups of persons like elderly owners or owners with proprietary whose housing situation is insecure, would hesitate to tie up their money over a long period of time. Additionally, the requested technical standards are perceived as too high for many investors and thus might prevent wide-ranged action. Hence, it is asked for the possibility to also classify small measures as eligible instead of comprehensive upgrades solely. Also, the execution of measures should not require specialised firms, but should allow personal contribution. The coordination of the programme by local banks is appraised as difficult since the banks might be more interested in promoting their own products than in informing objectively.

Communication

The government's marketing campaign for the rehabilitation of buildings comprehends the website www.energie-fuer-morgen.de, which points to the promotion of measures by the *CO_2 Rehabilitation Programme*. The KfW Bankgruppe provides detailed information online[14], in information centres in Frankfurt, Bonn and Berlin and offers consultation days at different locations throughout Germany. Information is provided also by local banks that carry out the programme.

Conclusions

Regarding the assumption that investors are more interested in grants than in loans, the inclusion of the grant version for owners of one- and two-family houses in 2007 and the modifications realised within the new programme *Energy Efficient Retrofit* that will be launched in April 2009 seem promising. The promotion of single measures instead of the originally requested packages of measures could additionally encourage proprietors to invest in retrofit actions and increase the rehabilitation quota. The numbers do not allow conclusions about the programme's impact on low-income households. Improved conditions for those investing in buildings with a high proportion of low-income tenants might be a useful supplement to the existing programme. In order to guarantee that the investor's costs will amortise as well as to protect the tenants, the lower financial flexibility of the tenants has to be taken into account for the allocation of investment costs to the rent. The current[15] competition for the rehabilitation of multi-family dwellings that includes supplementary subsidies might help to increase the programme's impact on low-income households.

Ecogaz, France

Context

At least 300,000 households every year seek help to deal with unpaid energy bills.
500,000 people are put on the "critical electricity" list; many eligible households do not apply for it.
Nearly 2.7 million households could be considered potential victims because of unkempt buildings, deprived of basic comfort, condominium properties in disrepair, etc.

The ***ECOGAZ*** experimental mechanism of the GDF Suez Company, in close partnership with various social mediation associations was analysed. This is a tool to prevent energy poverty. It is an energy diagnosis approach to habitat and in this way specific recommendations are formulated in terms of building renovation and coaching households to use energy more efficiently. Based on its efforts to

[14] http://www.kfw-foerderbank.de/EN_Home/Housing_Construction/KfWCO2Buil.jsp, 11.03.2009
[15] Source: http://www.bmvbs.de/Anlage/original_1063269/Auslobung-Wettbewerb-Energetische-Sanierung-von-Grosswohnsiedlungen.pdf, 11.03.2009

promote energy efficiency, ***ECOGAZ*** is an adjunct to a social fund to provide assistance with home renovation work for disadvantaged households.

Factors of creation

- Lack of tools to prevent energy poverty

Most building owners have no motivation to undertake improvement work, due to financial problems, impression that there is no immediate return on their investment or very simply lack of awareness.

- Preventing and limiting unpaid energy bills with a focus on the building

Individual behaviour is indeed a factor in the balance, but the condition of the building and its energy performance remain the bottom-line issue that results in a family falling into and/or being locked into a situation of energy poverty. The idea then is to start with working directly on the causes of the energy poverty, and that means going into the buildings themselves. This way, further escalation of outstanding energy bills can be limited.

- Create complementarily in tools to more effectively control energy poverty.

The new feature of this mechanism is the coaching that goes along with it both upstream (energy diagnosis, recommendations) and downstream (assistance with renovation work, education and help to make efficient use of energy) for families encountering difficulty in getting home renovation or repair work done. These are the reasons why GDF Suez took on the trial mechanism known as *ECOGAZ*. It is solidly based on the contracting skills of social mediation associations specialising in issues of unpaid energy bills and high energy-consuming buildings. Such structures play a key role in developing the mechanism because they are in charge of both selecting and monitoring the target beneficiaries.

Description

- Main objectives of the *ECOGAZ* experimental mechanism
  - Prevent and limit energy poverty.
  - Improve the comfort level enjoyed by the poorest households.
  - Reduce energy consumption and thereby the risk of outstanding energy bills.

- Stakeholders involved

GDF Suez is the professional stakeholder behind the mechanism (contractor). It is a major player in the European energy market. The group produces, markets, transports and delivers gas, electricity and services.

Social mediation associations are the preferred stakeholders in the field. Their familiarity with the context and households enables them to make an accurate appraisal of the expectations of the anticipated target group.

The Chamber of Social Debt Overload (*Chambre de Surendettement Social*) of **CRESUS Nord-Pas-de-Calais**, is a not-for-profit organisation that has been asked to steer the experimental phase and do the financial engineering. Phase 2 involves other social mediation associations in the development of the mechanism at the nationwide scale.

- Target group

ECOGAZ has been designed for owner occupiers who are likely to encounter difficulties in paying off their energy bills, regardless of whether they are GDF Suez customers or not. The mechanism is designed for households that fulfil basic eligibility criteria:

1. Owner occupiers experiencing financial difficulties and whose situation fits the “social” or “strongly social” welfare qualifying thresholds defined by the national habitat agency (Agence Nationale de l’Habitat - ANAH).
2. A dwelling of individual house or apartment type considered as high energy consuming and heated with natural gas, home heating oil, electricity, wood or coal.

Selection process

The beneficiary selection phase is the responsibility of the social mediation associations in liaison with the commune and/or departmental social services. A commission for the selection of renovation projects will be headed by the CRESUS Association. The action framework of GDF Suez is limited to energy diagnosis of buildings, recommendations and consumption statements.

Project background

Trial phase

It studied 10 households over a three-month period in 2007. The dwellings studied were 20th-century townhouses (built between 1920 and 1975), typical of habitat in the North.

After the diagnostic operations were completed, personalised statements were sent to the households by CRESUS. The statements contained information on the energy consumption of the dwelling, what renovation work would be feasible and provided advice for saving energy.

The various mechanisms for assistance with the work were outlined for the persons concerned.

At the completion of Phase 1 of the *ECOGAZ* mechanism, the most frequent recommendations focused primarily on building insulation. The next items were:

- Installation of thermostatically controlled taps.
- Installation of a programmable room thermostat.
- Replacing boiler.
- Installation of mechanically controlled ventilation.
- Caulking doors, replacing windows.
- Insulating attics and extensions.
- Switching from electrically heated to gas heated home water.

This phase was completed locally, with beneficiaries living in the Nord-Pas-de-Calais region in Roubaix, Tourcoing and Lille.

Phase 2

An agreement was reached with CRESUS in order to assist 200 to 500 households escape from energy poverty by 2009 / 2010 throughout the Nord-Pas-de-Calais region. Further, given the success of Phase 1, the mechanism is being applied over a larger geographic area, i.e. throughout France.

Extension of the geographic zone

Experimentation was extended nationwide. ECOGAZ is also implemented in the department of Drôme, l’Hérault, l’Aude, in the Nancy Greater Metropolitan Area and Charente-Maritime. Each territory is “managed” by a contracting association, in some instances in a co-contracting partnership with the departmental authorities. This puts it in charge of the project engineering, with the possibility of a relationship with an energy trouble-shooting agency (if it itself is not empowered to perform this function) and relationships in the field with households that may qualify for the assistance.

Description of the mechanism

The mechanism is designed to provide holistic coaching for families that, beyond the issue of unpaid energy bills, enables home improvement work to enhance energy efficiency in dwellings and the

acquisition of energy efficient equipments, a necessary leverage point to avoid repeat energy indebtedness. It includes the following:

- **Social counselling** for households that includes trouble shooting and individual study of situations, information and an effort to build family responsibility.
- **Technical counselling** based on an energy diagnosis of situations identified as "problem cases," for instance where repeat problems have been reported by the local commission in charge of collecting outstanding energy bills. This provides a basis for identifying a program of energy efficient works that both meets the need of the owner household—coping with overly costly bills, privations, outstanding debts due to the poor quality of the dwelling—and requirements under the "Grenelle de l'Environnement" talks: at least get the housing out of Class G under the Energy Performance Diagnosis, which refers to the highest energy consuming housing.
- **Financial counselling** so as to take advantage of all grant aid, loans and tax deductions that households are eligible for. The financial envelope offered by GDF Suez to beneficiary households that undertake improvement work varies **from 500 to 1,000 euros** based on their income (see ANAH rate list). Assistance to the tune of **200 euros** is also offered for the energy audit.

Importantly, selection of contractors does not come under the purview of GDF Suez, but rather that of the social mediation associations. For this reason, GDF Suez is unable to use energy efficiency certificates.

Successes and difficulties

- Successes
  - **Sound familiarity with the context on the part of players in the field**.
  - **Prevention**: This mechanism enables existing financial and social barriers to be lowered in order to access energy saving renovations and thereby enable greater energy savings for the dwelling and reduce unpaid energy bills.
  - **Coaching for households from the diagnosis stage to work implementation**: with a higher level of funding available for work, the regional office for the prevention of energy poverty should encourage all territorial authorities (regional, departmental, EPCI, communes) to get behind a system for additional funding.
  - **An umbrella for a large number of stakeholders**: the skills base of local stakeholders (professionals in the fields of social work, habitat and energy) are involved. Social funds as well as micro-credit players are also called on to help round out funding for improvement work and help cover a lack of resources in the most vulnerable households.
  - The **selection criteria** take into account the overall situation of the household. This means that the most disadvantaged are beneficiaries of the mechanism. The restrictive target—owners-occupiers—makes fast-track decision making easier.
  - **Success of the development phase**: Strong commitment on the part of those involved to keep the mechanism going.

- Difficulties
  - Difficulties in timely **budget preparation** and complexity of the engineering work to be put in place (especially without the Fonds d'aide aux travaux de maîtrise et d'économie d'énergie [Aid Fund for Contractors and Energy Savings] or the equivalent that should be set up under departmental plans for vulnerable dwelling assistance).
  - Sustainability of the initiative that would require a bridge entity or term partnership with the public authorities under their vulnerable household alleviation policies for challenged households and with other stakeholders (ANAH, ADEME, other suppliers), an energy supplier not having to take on alone the situation the 400,000 dwellings in question.
  - **Depends on the commitment and skills level of the associations** to get together under such a project and/or to get involved as contractors.
  - **Policy problem**: The commitment could take the form of a representation of solidarity initiatives.

- In the end, **this mechanism is intended for owner occupiers, not tenants**. This is a major limit to this mechanism that could tend to marginalise those who do not own their homes in terms of efforts to remedy energy poverty. This mechanism should be extended to them in the framework of the elective habitat improvement operation (Opération Programmée d'Amélioration de l'Habitat - OPAH) or a similar mechanism should be devised for owners who rent out to these households.

2000 roofs for 2000 families

Overview

Abbé Pierre Foundation noticed through fieldwork a lack of social housing for the poorest and set up a program to support the creation of this type of buildings. Called "1500 Very Social Homes", this program was allocated 10 million Euros and lead to the creation of 1700 dwellings. However, the number of social houses available for the poorest is still insufficient compared to the actual needs, according to the Poor Housing Report issued by Abbé Pierre Foundation.

Factors of creation

After a previous program to support the creation of very social homes, the Abbé Pierre Foundation wished to give more importance to the reduction of charges. Building very social houses where the tenant pays high service charges can lead to possible energy poverty problems.
For this new program, the accent will be put on projects which offer economical solutions for the service charges of the future tenants.

Description

The program was allocated 10 million Euros for a period of 3 years. It is encouraging the creation of very social homes. These dwellings are allocated to people who have economic and social problems, the rent is very low compared to the market price, they reach a maximum level of attainment and the rent varies according to national criteria while the maximum income of the potential tenant is fixed at a national level. The objective of the program is to create 2000 very social houses.
The direct beneficiaries are the social dwellings' organizations, generally associative, the insertion projects' managers.
The final beneficiaries are underprivileged households awaiting accommodation solutions.

The financial aid allocated to a project reaches 5-10% of the refitting cost.
This financing completes others such as: governmental funds, local authorities' finance (local and regional) allocated for social dwelling and/or for the creation of energy efficient homes.

Successes and difficulties

Successes

This is a charity fund (private investment) which completes usually public ones.
The final beneficiaries are households dealing with social and economic difficulties, so they would be risking energy poverty if they don't benefit from this social housing system. The aid is therefore very well targeted.
The people living in these social dwellings benefit usually from social support and of monitoring which could be completed by an energy consumption monitoring.

Difficulties

The financial aids represent only a small part of the amounts of money necessary for energy efficient refitting.
The associations which implement the projects need often support to carry out global energy efficient refitting actions.

The main difficulty for the associations in the field is when they want to implement energy efficiency exemplary projects. Generally, they are small organisations, they don't create many homes and the certification, required by the other financial partners so that they can enjoy special aids allocated for efficient renovation, is expensive.

The thermal modernization mechanism in Poland

Description

This is a form of state help / bonus for an investor who carries out thermal modernization enterprise according to the Act "On Support for Thermomodernization and Renovation Undertakings" of 21st November 2008. An investor who conducts a thermomodernisation undertaking is eligible for a bonus to cover part of the loan contracted in order to carry out the undertaking (henceforth "thermomodernisation bonus") according to the energy audit recommendation. The renovation bonus may only be awarded in terms of a renovation undertaking of a multifamily building that was commenced to be used before 14 August 1961. The bonuses are awarded by the Bank Gospodarstwa Krajowego, (The National Economy Bank) using the Thermomodernisation and Renovation Fund. An investor files a bonus application to the BGK through a crediting bank. The thermomodernisation bonus only partakes to investors who benefit from a loan granted by banks co-operating with BGK, it cannot be used by enterprises that carry out thermal modernization enterprise with their own funds. The clients can be council, housing co-operatives, commercial law partnerships, housing associations, as well as natural persons, detached family house owners.

Principles of support for thermomodernisation investment and renovation projects are as follows:

a. an improvement that reduces the amount of energy needed for heating and reheating of system water, and for heating of buildings including residential buildings, group housing (a social welfare home, a workers' hostel, a dormitory, a student hall of residence, orphanage, a retirement and nursing home, a homeless shelter and other buildings of similar purpose, including presbyteries, monasteries and convents) and buildings belonging to local governments that are used to carry out public tasks;
b. an improvement that reduces losses of primary energy in local heat district networks, and in local heat sources that support such networks, if buildings, detailed in par. a), to which the energy is provided fulfil the energy saving requirements, detailed in the construction law, or if these buildings are subject to improvement actions to reduce their energy consumption;
c. creation of a service pipe to a central heat source related to removal of a local heat source that results in reduction in heat procurement costs in relation to heating costs of buildings detailed in paragraph a),
d. partial or full change of an energy source to a renewable energy source, or use of highly efficient cogeneration.
e. renovation of multifamily buildings,
f. replacement of windows or renovation of balconies in a multifamily building, even if these are used solely by the proprietors of flats in the building,
g. remodelling of multifamily buildings by which they are improved,
h. equipping multifamily buildings with installations and equipment required for buildings to be put into operation in agreement with the construction law.

If the investment fulfils the criteria an energy audit is required to prove technical and economic evaluation. Submission of the energy audit is obligatory as well as is a basic condition to apply for a support (premium) from the Thermomodernisation Fund. The Act, through its ordinances, describes

precisely standard of the energy audit and calculation methods. All the audits delivered to the commercial banks and then to the National Economy Bank (BGK) being a basis for applying for the premium granting are verified by the independent institutions.

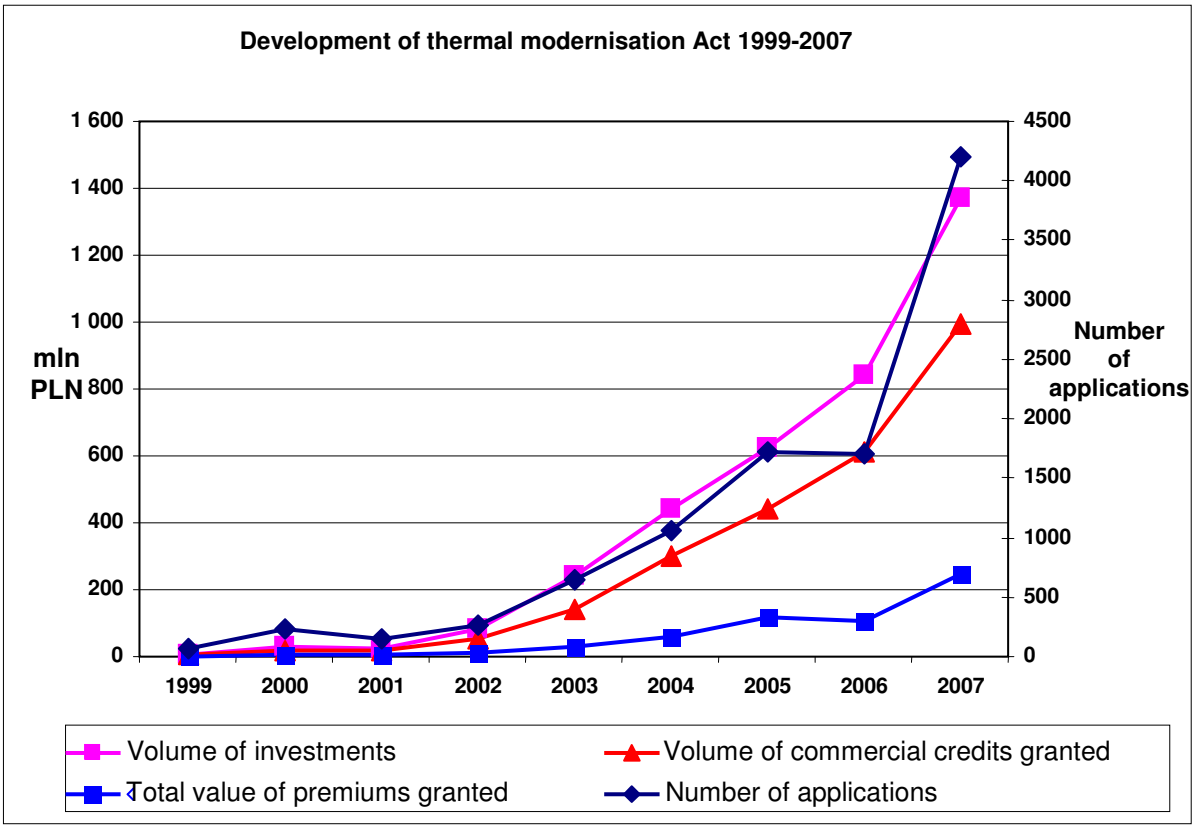
Successes and difficulties

Until June 2002, when the act was amended it was not successful scheme. For three years only 500 proposals were applied and the total volume of investments was approximately 60 million PLN (15 million Euros). It was also caused by the very high level of the credit interest rates.
From June 2002 until now the credits interest rates have dropped down up to the 5-7% per year (especially in 2003 and 2004), the number of application has significantly increased. For these two years almost 1700 more applications were applied and the total volume of investments was approximately 720 mln PLN (171 mln Euro). The updated figures are presented at the table 1 and on the picture below.

Table 1: Number of TMF applications. Exchange rate: 1 € = 4,7266 PLN

Year	Number of applications	Volume of investments [mln PLN]	Volume of commercial credits granted [mln PLN]	Total value of premiums granted [mln PLN]
1999	71	6,6	4,2	1,06
2000	235	26,6	15,4	3,86
2001	141	25,35	15,4	3,85
2002	271	80,0	50,64	12,66
2003	651	240,6	139,8	30,3
2004	1059	443,2	299,7	58,55
2005	1714	625,7	443,67	115,73
2006	1706	841,7	610,75	103,45
2007	4201	**1 369,04**	**991,39**	247,86
Total	10049	3658,735	2570,95	577,32

Change of the costs of the modernization 1 sqm of the usable area of buildings and expenditures on this aim from the Thermal Modernization Fund at multi flat buildings



Excellent cooperation between all the organizations taking part in thermo modernization process in Poland: BGK (National Economy Bank), investors – administrators of buildings, auditors, verifying companies and buildings companies (approx. 45 – 50 thousand peoples involved in the realization of this mechanism) gives huge, on average 45% saving potential of energy, resulted with improvement of the social living conditions and decreasing of vulnerable treat.

The value of thermal modernization investments in Poland during the ten years period (1999 until August 2009) according to registered 16 977 applications (see table 2) is equal to € 1360,5 million from which 216.2 mn are premiums. During this period value of energy savings has achieved level of approx 90 mn €. This is the main successful result of the thermal modernization programme in Poland.

It was foreseen that the very wide scope of the thermal modernisation act together with the environmental funds will cover significant part of the needs in the field of improvement of the energy efficiency in existing building in Poland. No other initiatives on the national level were introduced in Poland. However the discussion on the possibilities and needs referring increasing of energy efficiency requirements for buildings (including residential) has been recently initiated.

Table 2: Number of applications for each building type and their outcome, 1999-August 2009.

Description	Registered applications in total		Favourably verified applications		Negatively verified applications		On going verification and give back applications
	Number	%	Number	%	Number	%	
Applications in total	**16 977**	**100%**	**15 753**	**100%**	**567**	**100%**	**657**
One family buildings	645	3,80%	521	3,31%	93	16,40%	31
Multifamily buildings	14 915	87,85%	14 044	89,15%	361	63,67%	510
Local heat sources	94	0,55%	065	0,41%	20	3,53%	9
Heat network	43	0,25%	34	0,22%	7	1,23%	2
Other heat sources	5	0,03%	5	0,03%	0	0,00%	0
Public buildings	1 183	6,97%	1 009	6,41%	80	14,11%	94
Shelters, nurse houses	89	0,52%	75	0,48%	6	1,06%	8
Others	3	0,02%	0	0,00%	0	0,00%	3