EuroACE

The European Alliance of Companies for Energy Efficiency in Buildings

MAKING MONEY WORK FOR BUILDINGS

Financial and Fiscal Instruments for Energy Efficiency in Buildings

A report by Klinckenberg Consultants for EuroACE - September 2010

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EXECUTIVE SUMMARY

Financial and fiscal instruments

From our research, we believe that there are in excess of 100 financial or fiscal instruments in place across the Community, representing a total investment of the order of tens of billions of Euros.

These instruments essentially fall into 8 categories:

- Preferential Loans,
- Subsidies,
- Grants,
- Third Party financing,
- Trading (White/Energy Certificates),
- Tax Rebates,
- Tax Deductions,
- VAT Reductions.

Well-designed programmes appear to have a cost-effectiveness of around € 20-25/tonne CO_2 emission mitigated, which is much better (ie lower) than that of virtually all alternative carbon abatement measures.

Key Recommendations

It has been possible, from the available information, to perform a meaningful comparable analysis of around 30 core instruments. The lessons that we have learnt from this work are set out in detail later in this report and lead us to recommend that:

1. Financial and fiscal instruments should be part of a wider holistic policy package, which should include regulatory, facilitation and communication elements. Policy makers should avoid the temptation to concentrate primarily on "quick-fix" short term policy solutions. Occasionally there will be a place for these, but it is vital to have long-term programmes if the desired benefits and behaviours are to be achieved and embedded.

2. An in-depth gap analysis is necessary to determine which energy efficiency measures should be supported, which barriers need to be overcome, which type of instruments are best placed to do so, what level of support is needed, and which auxiliary instruments are needed to make financing work.

3. Clear communication is essential, both to provide advice to consumers and market parties about incentives and energy efficiency measures available to them, and allow market parties to respond to and reinforce government programmes in their marketing.

4. Monitoring and evaluation mechanisms must be built in to new policies from the start, ideally following a common monitoring protocol and agreed ways of assessing impacts and cost-effectiveness of policies. This is necessary to justify public expenditure and to inform the redirection of funding/recalibration of instruments if necessary.

5. The European Commission could facilitate the development and implementation of effective financial and fiscal instruments, by providing guidelines and templates for a gap analysis, the definition of energy efficiency measures, monitoring protocols and common approaches to measuring cost-effectiveness.

6. Decision takers and policy makers should take due account of best practice in key aspects of the development and implementation of instruments. These include collaborative working, standardised procedures, targeted and comprehensible advice, clear communication, training for practitioners and ensuring ease of accessibility

INTRODUCTION

Energy Efficiency in Buildings -practical support measures based on knowledge and understanding.

The European Alliance of Companies for Energy Efficiency in Buildings (EuroACE) seeks to work together with European and National institutions to help Europe move towards a more sustainable pattern of energy use in buildings, thereby contributing to the EU's commitments on carbon emission reductions, job creation and energy security.

A major part of the EU's Kyoto commitment can be met through practical energy saving measures in new and existing buildings, where over 40% of Europe's energy is consumed. EuroACE believes that 450 million tonnes of CO_2 (around one eighth of Europe's current emissions) could be saved annually if appropriate practical measures can be identified to augment the overall policy push.

A large number of disparate financial and fiscal measures have historically been or are currently in place throughout the EU to promote greater energy efficiency in all segments of the buildings sector. These are often country or area specific micro- or short-term measures in response to local needs or circumstances. In some cases, they carry significant budgetary provision.

However, no holistic mapping of these measures or analysis of their effectiveness on a cross community basis exists. A clearer understanding of the drivers and impacts of these measures will help those responsible for developing policy or lobbying for its development ensure that maximum returns can be achieved from available budgets and that new proposals for interventions can be based on best practice.

The work that has underpinned this Report has had four main aims:

- to identify and map the financial and fiscal measures that are in place across the community;
- to clarify and categorise the types of support available;
- to identify where impact can be assessed and cost-effectiveness quantified;
- to draw some conclusions on both best practice and more salutary lessons learned as a guide for policy makers at Commission and individual Member State level and for practitioners.

Methodology

Base load information for this study was provided by the EuroACE working paper "Current financial and fiscal incentive programmes for sustainable energy in buildings from across Europe" (September 2009) and internet sources, including IEA energy efficiency policies and the MURE database.

16 countries and over 32 schemes were selected for detailed analysis, based on their geographical and sectoral distribution, their focus on the development of low-energy buildings and the availability and accessibility of information. Two questionnaires were developed to allow national experts to provide information on:

- country contextual information (national policy environment; use of financial instruments; current and future policies for furthering energy efficiency in buildings), and
- specific case information (policy and market environment, budgets, operating mechanisms, metrics & key performance indicators, success rate etc).

The resulting data set was analysed across several dimensions, including:

- The sectors targeted (owner-occupied, private rental, social rental housing; commercial owner-occupied and private rental buildings, public buildings etc);
- The intended level of efficiency improvement, and whether this included low energy buildings;
- Results achieved, including a cost-benefit analysis;
- The type of instrument used;
- Whether the instruments were self-standing or a contributory element of a wider policy package;

A compendium of 32 case studies and 16 country summaries produced as a result of this work is also available on the EuroACE website.

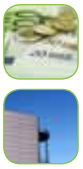
INSTRUMENTS IN USE IN EUROPE

I. Geographical spread and quantity

The overview in table 1 below records the 32 schemes that have been analysed in detail in this study, together with a significant number of instruments that we are aware of, but that were not selected for more detailed analysis. This overview does not pretend to be complete; it does, however, aim to provide a representative overview of the types of financial instruments currently in use in Europe for the promotion of building energy efficiency. In total we estimate there to be in excess of 100 instruments in place.

Table 1. Overview of Identified Instruments in Use

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



II. Types of Financial and Fiscal Instruments

This study identified eight different types of financial and fiscal instruments, each with distinct characteristics.

1. Loans and Preferential Loans	
Characteristics	Loans, with better terms and/or reduced interest rates, provided for building energy efficiency improvements Typically finance all or most of an investment
Examples	Estonia: The Credit and Export Guarantee Fund (KredEx) (2001 – ongoing) France: Green Loan for Social Housing (2009-2020) Germany: KfW Programme Energy-Efficient Construction (2005 – ongoing)
Typical products covered	Windows, heating controls, central heating installations, insulation, ventilation systems, renewable energy technologies, housing access and other modernisation features.

2. Grants	
Characteristics	Grants for building energy efficiency improvements Typically finance part of an investment
Examples	Czech Republic: Green Investment Scheme (2009 – 2012) Hungary: Grants for Renovation & Prefabricated-Panel Residences (2001 - ongoing) Romania: Programs for the thermal rehabilitation of multi-level residential buildings (2002 – ongoing)
Typical products covered	Renewable energy, insulation, draught-proofing, heating systems (including biomass, heat pumps, thermal regulation, Combined Heat & Power (CHP), solar), efficient appliances, windows and doors, district heating

3. Subsidies	
Characteristics	Subsidies for building energy efficiency improvements
Examples	Poland: Infrastructure and Environmental Operation Programme (2007-2013) Slovenia: Financial stimulation for energy efficiency renovation and sustainable buildings of new buildings (2008-2016). UK: Carbon Emissions Reduction Target (2008-2012)
Typical products covered	Insulation, lighting, appliances, fuel switching biomass community heating, CHP


4. Third Party Financing (TPF)	
Characteristics	Investment is paid for by third party (e.g., bank, Energy Service Company (ESCO), installer of systems) Building owner has to pay back investment over time Different forms of 3rd party financing, ranging from pay back as share of savings to financial lease
Examples	Austria: Successfully establishing a regional Market for Third Party Finance (2001 – ongoing) Netherlands: More with Less Programme (2008-2020) Poland: Thermo-modernisation and Renovation Fund (1999-2016)
Typical products covered	Heating and hot water systems

5. Trading (White/Energy Certificates)	
Characteristics	Tradable amounts of energy savings Typically required by government, of energy suppliers Savings generated with end users
Examples	France: White Certificate Trading (2006 - 2009)
Typical products covered	Insulation, heating, hot water production, lighting, ventilation and efficient appliances

6. Tax rebates	
Characteristics	Various forms of personal tax reductions in response to building owners investing in energy efficiency Examples range from personal income tax reductions to reduction of building transfer tax (stamp duty)
Examples	Belgium: Tax Rebates for Home Improvements (2003 – ongoing) UK: Stamp Duty Relief for Zero Carbon Homes (2007 – 2012)
Typical products covered	Replacement of old boilers, solar water heaters, roof installation, double glazing, central heating system, energy audit, boiler maintenance, efficient appliances, insulation, draught-proofing, passive houses and zero-carbon houses

7. Tax deductions	
Characteristics	Deduction of personal income or corporate tax for amounts invested in energy efficiency
Examples	Netherlands: Energy Investment Allowance (2004 – ongoing) UK: Landlords' Energy Saving Allowance (2004 – 2015)
Typical products covered	Insulation, draught-proofing and CHP. Lists of eligible technologies are frequently updated


8. VAT reduction	
Characteristics	Low VAT rate for energy efficiency products and materials
Examples	Belgium: Reduced VAT on home refurbishment (2000 – ongoing) UK: Reduced Sales Tax for Energy Savings Materials (2000 – ongoing)
Typical products covered	Insulation, draught stripping, heating and hot water controls, solar panels, wind and water turbines, heat pumps, micro CHP, biomass and other transformation/restoration works

In addition, there are examples of policy mechanisms that employ a combination of grants and preferential loans. Examples include:

KfW CO_2 Building Rehabilitation Programme (1996 – ongoing). Germany	
Objective	To support investment in building energy renovation
Characteristics	Provides a preferential loan for refurbishment measures aimed at reducing energy consumption, via local commercial banks An additional repayment grant is given if the KfW Efficiency House standard is achieved Between 1996 and 2004, € 6bn in loans provided; 57 million m^2 floor area in existing buildings renovated; Budget € 4bn (in loans) from 2006 to 2009; € 2bn per year in 2010-11 Budget € 4bn (loans) in 2006-09; € 2bn p.a. in 2010-11 In 2007, the German government reported that, by the end of 2006, more than 2.5 million housing units had been renovated with KfW support since its inception. This resulted in around 1.5 TWh/yr energy savings in 2006, and 703 kt CO_2 annual reductions in CO_2 emissions. Through the implementation of the programme, around 220,000 new jobs were created. It was further estimated that the various KfW programmes for buildings had a combined impact of emission reductions of around 1 Mt CO_2 emission reduction per year

Support for Energy Efficiency in Buildings (2008-2012) (Spain)	
Objectives	Refurbishment of the building envelope Improvement of heating, ventilation and cooling systems; Improvement of interior lighting efficiency Promotion of new and existing very low energy buildings.
Characteristics	Budget €804m for the five-year period CO_2 emission reduction estimated at 35 million tonnes over 5 year period

Financial stimulation for energy efficiency renovation and sustainable buildings of new buildings (2008-2016) (Slovenia)	
Objective	To promote the implementation of energy audits, feasibility studies, investment and project documentation for energy efficiency and renewable energy
Characteristics	Financing for energy renovation, building of low energy buildings and building of new passive solar buildings Subsidy is limited to 2.5% of the proposed investment Small or medium-sized enterprises are eligible Estimated energy saving 210 GWh annually and CO_2 emission reduction of 54 kt annually

III. Sources Of Funding For Energy Efficiency Investments

European Regional Development Fund

Of the four structural funds which offer assistance to resolve structural economic and social problems, the €308bn European Regional Development Fund (ERDF) is the most relevant for energy efficiency related programmes across Europe. Article 7 of the ERDF regulation states that "In each Member State, expenditure on energy efficiency improvements and on the use of renewable energy in existing housing shall be eligible up to an amount of 4% of the total ERDF allocation". In the 2007-2013 period, ERDF is funding 4 national programmes, 2 multi-regional programmes, over 30 regional programmes, and 2 cross-border programmes.

Cohesion Funds

Cohesion Funds aim to reduce economic and social disparities by financing up to 85 % of eligible major projects involving the environment and transport infrastructure for Member States which have per capita GDP of less than 90% of the community average. Eligible environment projects must help to achieve the objectives of the EC treaty and be in line with the priorities conferred on Community Environmental policy by the relevant Environment and Sustainable Development action plans.

European Investment Bank (EIB)

The EIB's role is to contribute towards the integration, balanced development and economic and social cohesion of the EU, through providing long-term lending to Member States. In 2008, the EIB signed energy loans totalling more than €8.6bn for projects within the European Union, around 0.7bn of which were focused on energy efficiency projects.

EU Emissions Trading Scheme (EU ETS)

Operating since 2005, the EU ETS scheme is the largest multi-national greenhouse gas (GHG) emissions trading scheme in the world. The scheme obliges large emitters of CO_2 to trade credits, in order that they pay extra for additional CO_2 emitted over and above their allocated allowance, or they profit from reducing CO_2 emissions. In January 2008, the EC proposed a number of changes to the scheme, including centralised allocation of permits and extending the scheme to cover other GHGs. Changes are not expected to become effective until 2013.


Intelligent Energy Europe Programme (IEE)

The Intelligent Energy Europe (IEE) programme aims to boost actions which will help achieve the EU's energy targets, including fostering energy efficiency and the promotion of renewable energy sources.
The IEE Programme considers Local Authorities as a main target group. A budget is regularly earmarked for local authorities to develop sustainable energy policies at local level. €56 million has been made available for project costs in 2010.

European Local Energy Assistance fund (ELENA)

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

Other Funding Sources

A host of other funding bodies provide investment to suitable energy-related projects. These include:

- Joint European Support for Sustainable Investment in City Areas (JESSICA) – allows Member States to make repayable investments in projects forming part of an integrated plan for sustainable urban development
- JASPERS – a technical support facility which helps Member States to identify and prepare projects potentially eligible for assistance under the EU Structural Funds
- Municipal Finance Facility - initiative of the European Commission and the EBRD to develop and stimulate commercial bank lending to small and medium-sized municipalities and their utility companies (SMMs) in EU Accession countries who joined the EU in 2004
- "Marguerite" fund - a pan-European equity fund which aims to act as a catalyst for infrastructure investments implementing key EU policies in the areas of climate change, energy security, and trans-European networks. The fund was launched in 2009 with an initial capital of €600 million, and the Fund volume is targeted at €1.5 billion for final closing in 2011
- Energy Efficiency Financial Facility - financially assist the IPA (Instrument for Pre-Accession Assistance) countries to promote investments in energy efficiency and renewable energy generation in order to improve the energy performance of the building and industry sectors
- Green Investment Schemes (GIS)
- Programmatic Carbon Crediting/Programming of Activities (PoA)


COST-EFFECTIVENESS OF FINANCIAL AND FISCAL INSTRUMENTS

Methodology and context

It is difficult to assess the cost-effectiveness of financial and fiscal instruments for a number of reasons:

- there is a general lack of published or easily accessible evaluation results;
- in many cases it is unclear whether any systemic evaluation of impacts is ever actually carried out;
- where evaluation results are available, they are often non-standardised and incomparable with other programmes.

Nevertheless, we have designed and employed a methodology that permits a significant degree of comparability and presents a reasonably indicative flavour of energy savings and cost-effectiveness.

From the data we have been able to access for each scheme, we have calculated cost-effectiveness on the basis of the cost of the programme (typically to government) per ton of CO_2 emission avoided, over an impact period of up to 30 years (and shorter for investments with a shorter lifespan). This metric is a commonly used tool for comparing policy options in impact assessments. While we recognise that this approach is imperfect, we believe that the results presented in this report are the most representative of the overall impact and cost-effectiveness of financial and fiscal instruments in Europe available to date.

It is also important to realise that the benefits of the better designed and implemented financial and fiscal measures are wider than simply CO_2 savings. They can result in

- additional environmental benefits by helping to tackle climate change and improve local air quality.
- reduced energy demand which will moderate wider environmental impacts of energy extraction, production and supply
- additional social benefits through reducing fuel bills, improving comfort, and the alleviation of fuel poverty and the risk of ill health caused by cold homes, particularly for those on low-incomes, disability benefits, or elderly householders
- additional economic benefits in promoting innovation by creating market opportunities for new or more efficient technologies and by providing certain incentives for demonstration and market transformation
- new jobs created in the manufacturing and installation of energy efficiency measures
- improving security of energy supply by reducing demand in the domestic sector


Cost effectiveness – some examples

Despite the limitations of the available evidence, it can be clearly demonstrated that the better designed financial and fiscal measures which perform well in practice and whose impact is properly assessed can be very cost-effective. To illustrate this we have set out below some broad details of three exemplar schemes. With some refinement and the adoption of best practice (see recommendations section below) we believe that this impact could be greatly enhanced across the spectrum of measures in place and in the pipeline.

Support Programme for Energy Efficiency Buildings (Spain)	
Scheme Type	Grants/Preferential Loans
Coverage	Existing residential / Existing public
Details	Ongoing programme, 2008 to 2012 Programme budget € 800m; expected resulting investment volume € 13bn Expected cumulative savings (2008-2012): Insulation: 4.7 TWh 5.2 Mt CO_2 HVAC systems: 5.5 TWh 6.5 Mt CO_2 Lighting: 10.8 TWh 17.9 Mt CO_2 New low-energy buildings: 5.1 TWh 5.3 Mt CO_2 Overall: 26 TWh 35 Mt CO_2
Cost Effectiveness (expected)	expected € 23/tCO_2

KfW Programme Energy-Efficient Rehabilitation (formerly CO_2 building programme) (Germany)	
Scheme Type	Grant/Preferential Loan
Coverage	Residential Buildings Sector
Details	Investors in buildings (private individuals, housing companies, housing cooperatives, municipalities, districts, etc) granted long-term, low-interest loans with fixed interest rates for up to 10 years and a repayment-free start-up time of up to 5 years. Programme resulted in very substantial investments in energy efficiency • First phase € 2.5bn loans • 2002-2004 € 2.4bn loans; € 5.4bn investments Emissions reduction of 1.9 Mt (first phase) and 0.8 Mt p.a. (2002-2004). By 2006, the programme had resulted in around 1.5 TWh/yr energy savings, and 703kt CO_2 annual reductions in CO_2 emissions. Around 220,000 new jobs were created through the implementation of the programme. Programme cost: interest rate subsidy, plus grants Our estimate of programme cost (2002 - 2004): approx € 0.5bn for interest rate subsidy; approx € 0.25bn for grants
Cost Effectiveness (estimated)	€ 25/tCO_2


Green Savings Programme (Czech Republic)	
Scheme Type	Subsidy
Coverage	New residential / Existing residential The support is granted for equipment installed in residential houses, not buildings intended for individual recreation or industrial buildings, even if the applicant has their permanent residence there.
Details	New programme, no results available yet Budget Koruna 25bn (€ 1bn) over programme lifetime Expected impacts, by 2012: • 250,000 houses improved • CO_2 emission reduction of 1.1 Mt annually • Energy savings 6.3 PJ (1.75 TWh) annually • 3.7 PJ (1 TWh) heat generated from renewable sources • 2.2 kt reduction in fine particle matter • 30,000 jobs created or retained
Cost Effectiveness (expected)	€ 20/tCO_2

The cost-effectiveness of programmes has been assessed by comparing the cost to government of implementing the programmes, over the duration of the programme, with the projected CO_2 emission reductions over a 30-year impact period, as is common for government impact assessments. Where needed, assumptions have been made for missing information.

Well-designed programmes appears to have a cost-effectiveness of around € 20-25/tonne CO_2 emission mitigated, which is well below common thresholds for end-use energy measures of around € 50-60/tonne CO_2 for non-traded emission reductions.

In addition to their cost-effectiveness, financial instruments can have a substantial impact on job creation, reducing households' energy bills, reducing energy consumption and CO_2 emissions. For the two programmes that provide information about the jobs impact, there is a ratio of one job created for every €25,000 - €30,000 investment in programmes.


LESSONS LEARNT

From the analysis of around 30 instruments, we have a number of observations:

1. Monitoring and evaluation of programmes appear, generally, to be underdeveloped:
   a. Impact analyses, where they exist at all, are neither accessible nor readily comparable. Metrics and methods of assessing the results of the instruments are neither uniformly adopted nor rigorously enforced. Many aspects could be improved. For example: More detailed understanding is required of the wider benefits of schemes beyond simple energy and CO_2 savings.
   b. The beneficial impact of instruments (Carbon Savings) needs to take account of the impact of rebound effects. Consumer savings may be spent on buying new electrical items or flights thereby offsetting initial carbon savings.

2. Grants and preferential loans are the most prevalent forms of instrument and, based on available data, the most successful and cost-effective.

3. Schemes not directly delivered by Governments but by third parties seem, generally, to be effective. Examples include:
   - Germany - KfW Programme Energy-Efficient Construction, delivered through KfW Bank in collaboration with local, commercial banks
   - Norway - Incentives for Low Energy Housing - delivered through Norwegian State Housing Bank (NSHB)
   - UK - Warm Front Scheme, delivered through "Eaga"

4. Complex application or transactional procedures can badly affect take up of an instrument. Examples include:
   - Poland - Thermal Modernisation Fund
   - France - Energy Savings Certificates Scheme

5. Some instruments are only successful in practice if they are accompanied by good communications, particularly for residential schemes. As an example, very poor initial uptake of the Thermal Modernisation Fund in Poland has been rectified by good information campaigns.

6. Instruments aimed at reducing fuel poverty sometimes have relatively poor take-up rates from those in the eligible groups. This is possibly due to social stigma or a need for greater precision in defining eligibility criteria – fuel poverty can be a variable status as energy prices move. An example is the Warm Front Scheme in the UK.

7. For instruments involving loans, there appears to be a correlation between take up and the level of interest rates, i.e. when interest rates fall, applications increase. An example is the Thermo Modernisation Fund in Poland.


8. There is a danger of negative impact from poorly conceived schemes. As an example, Stamp Duty Land Tax Relief for Zero Carbon Homes in the UK saw only 24 homes qualifying in the first two years of a time limited scheme resulting in critical press coverage.

9. Within individual Member States, different instruments need to be coordinated with each other to ensure success. Examples include:

   - The Energy Investment Allowance (EIA) integrates well with other policy instruments used in the Netherlands; these policies in turn contribute to the success of the EIA as they encourage the need for energy efficient investments.
   - In the UK, the Carbon Emissions Reduction Target (CERT) is closely coordinated with other instruments.

10. Accurate targeting of eligible audiences is key to a scheme's success. Some grant schemes have identified that households eligible for funding are not aware that they are able to apply. Equally grant schemes have found that they are funding projects applied for by candidates not within the targeted audience.

11. Schemes targeting zero-carbon homes, whilst worthwhile, need skilful, political handling. Some such schemes have been deemed un-ambitious, as these types of buildings make up a very small proportion of housing stock.

12. Schemes aimed at achieving energy efficient building renovations should be developed with the long term in mind. The short term benefits of marginal or partial renovations can be dissipated if those renovations need to be overhauled or further developed at a later stage. Policy makers should bear in mind the cost-effectiveness of promoting substantial renovations.


POINTERS FOR PRACTITIONERS

Best practices analysed in this study point to a number of approaches that have been proven to work well. These examples are contained throughout the report. Such successful approaches can point the way for the wider implementation of financial and fiscal instruments, in other countries and other circumstances. We are not suggesting that Member States simply carbon copy each other's policies. However, we do recommend that they study successful examples of policies and programmes and assess to what extent a similar mechanism with appropriate modifications to reflect local circumstances could bring important benefits. There are a few generic pointers that we suggest should be borne in mind as policy is developed:

- Collaborative working is key, involving home owners, consumer representative organisations and all market parties, and sending out the same message to all.
- Concepts and implementation processes need to be explained clearly. Advice needs to be carefully targeted at all project stages. Procedures need to be standardised to minimise administrative costs and inconvenience for both public sector bodies in charge of scheme administration and the end beneficiaries.
- Appropriate training needs to be given to all those involved in the delivery of an instrument.
- Eligible technology lists for tax deductions and rebates have proved to be an easy reference manual for users. Such lists should be 'open' so that new technologies can be added regularly as the market develops. It is also important to engage manufacturers and entrepreneurs with such schemes.
- Promotion activities are often required before schemes reach the attention of large numbers of the target audience.
- For all categories of instrument, application processing times should be kept low, for the ease of the end-user.

EuroACE

The European Alliance of Companies
for Energy Efficiency in Buildings

MAKING MONEY WORK FOR BUILDINGS

Annex I

CASE STUDY LIST

Austria	Klima:Aktiv
Austria	Third party Finance in Upper Austria
Belgium	Reduced VAT on home refurbishment
Belgium	Subsidies to households for improving energy efficiency
Belgium	Tax reduction for home improvements
Czech Republic	Green Saving Programme
Czech Republic	National Environment fund: Operational Programme Environment
Czech Republic	PANEL programme
Estonia	Renovation Loan of Apartment Buildings
France	Green loan for social housing
France	Energy Efficiency Tax Credit
France	Energy Savings Certificates Scheme
Germany	KfW Programme Energy-Efficient Construction
Germany	KfW Programme Energy-Efficient Rehabilitation
Germany	KfW Programme Housing modernisation
Hungary	Grants for Renovation & Prefabricated-Panel Residences
Italy	Sardinia Energy Auditing and Renewable Energy Production
Netherlands	Energy Investment Allowance (EIA)
Netherlands	More with Less Programme
Norway	Incentives for Low Energy Housing
Poland	Infrastructure and Environment Operational Programme (IEOP)
Poland	Thermal modernisation and Renovation Fund
Romania	Programs for the thermal rehabilitation of multi-level residential buildings
Slovenia	Scheme of efficient use of energy for households with low income
Slovenia	Financial stimulation for energy efficiency renovation and sustainable buildings of new buildings
Spain	Support for Energy Efficiency in Buildings
Sweden	Energy Declaration of Buildings Act - Incentives for Investment in Lower Energy Buildings
UK	Carbon Emissions Reduction Target
UK	Landlord's Energy Saving Allowance
UK	Reduced Sales Tax for Energy Savings Materials
UK	Stamp Duty Land Tax Relief for Zero Carbon Homes
UK	Warm Front Scheme

Title	KlimaActiv
Country	Austria
Sector	Existing and new buildings
Objectives	The primary objective of klima:aktiv is to introduce and promote climate friendly technologies and services.
Type of financial instrument	Grants
Products/ Activities covered	Buildings/mobility/renewable energy/communities
Level of policy	National
Responsible organisation	Ministry of Environment
Start/End year	2004-ongoing
Budget	Unknown
Project overview, and targeted barriers	klima:aktiv is embedded in the Austrian federal climate strategy, consisting of a bundle of measures of regulation, taxes, and subsidies. klima:aktiv has gathered all voluntary and supportive measures under one umbrella. In the four thematic clusters Building, Energy Efficiency, Mobility, and Renewable Energy, specific programmes are carried out by various programme managers of different institutions. These programmes follow a comprehensive and systematic approach in supporting the market introduction of climate-friendly technologies, services and activities.
Programme operation	In the area of energy efficiency of buildings klima:aktiv provides the following support for energy-efficient construction and renovation: • the klima:aktiv building standard: criteria, materials, certification • a free initial assessment to identify potential energy savings in service and residential buildings • funding models (such as contracting) • online information platforms on building and refurbishment • a database of best practice examples • partner companies for a smooth implementation • trained experts to help with the planning and realisation of the project
Results achieved, lessons learnt and evaluation of the programme	The klima:aktiv initiative has seen the following results since it started: • more than 2,000 people have been trained as installation and planning experts; • more than 400 companies have launched partnerships and projects for climate protection; • 180 trainers for fuel-saving driving have been trained throughout Austria; • 31 manufacturers of prefabricated houses and 32 residential property developers have started offering homes that meet the klima:aktiv standards; • the surface area of newly installed solar panels has more than doubled, increasing by nearly 300,000 m^2 annually; • refurbishment projects have been initiated for more than 15,000 flats; • annual energy cost savings of more than 3.4 million € have been achieved in buildings owned by the Austrian state; • more than 1,600 municipalities across Austria receive regular information about activities and new services related to climate protection. Lessons learnt – no info available Evaluation of the programme – no info available
Other relevant info	n.a.
References	klima:aktiv - the Austrian climate protection initiative http://www.klimaaktiv.at/article/archive/29292

Title	Third Party Finance (TPF) in Upper Austria
Country	Austria
Sector	Public buildings/commercial buildings
Objectives	The aim of the programme was to establish a market for third party financing in Upper Austria. As a first target area was energy efficiency in public buildings. Building on this experience, the programme was enlarged to commercial clients and renewable energy sources in 2002.
Type of financial instrument	Third party financing
Products/ Activities covered	Energy efficiency in public buildings
Level of policy	Regional
Responsible organisation	O.Ö. Energiesparverband and regional government
Start/End year	2002
Budget	Unknown
Project overview, and targeted barriers	The market development in the TPF field started with the first support programme – the ECIP Programme (Energie-Contracting-Impuls Programm) in 1998. Upper Austria was the first region in Austria to implement a direct subsidy scheme for TPF in the area of energy efficiency. The aim of the programme was to establish a positive framework for third party financing projects. The ECIP programme supported the energy performance contracting in public buildings. After a successful first phase, the programme was enlarged in order to broaden market development, and the new "Energy Contracting Programme"(ECP) was introduced in January 2002. This programme not only supports energy efficiency projects but also provides investment in renewable energy technologies. The initial focus on the public sector has been extended to businesses.
Programme operation	The programme offers financial support of up to 6 % of the energy investment (maximum 100,000€) depending on the type of project. Minimum investment costs have to be 40,000€. Besides financial incentive, the programme also offers a number of advice and information activities. People applying for the support are guided by O.Ö. Energiesparverband and therefore benefit from the experience of earlier projects. The combination of financial incentives with expert advice is one of the key factors for achieving implementing successful projects and for establishing a broad TPF market in the region. Feedback from ESCOs and other market actors as well as international experience is continuously included in the programme activities and used for further programme development.
Results achieved, lessons learnt and evaluation of the programme	Since the start of the programme, more than 100 TPF financed projects have been implemented with total investment of about 35 M, including both energy efficiency and installation of renewable energy plants. Lessons learnt: Energy agencies can significantly contribute to a TPF market development through • "in-house know-how": building up know-how within their organisation; • "explain, explain, explain": the concept as well as the concrete implementation possibilities need significant efforts in explanation providing targeted advice at all project stages establishing standardised procedure. Evaluation of the programme – no info available

Other relevant info	n.a
References	Organisation / Agency: O.Ö. Energiesparverband Main contact: Christiane Egger Address: A-4020 Linz, Landstr. 45 Tel: ++43-732-7720-14382 E-mail: christiane.egger@esv.or.at Web Site: www.esv.or.at Financial organisation: Government of Upper Austria

Title	**Reduced VAT on home refurbishment**
Country	Belgium
Sector	Existing residential
Objectives	Energy efficiency
Type of financial instrument	Lower VAT
Products/ Activities covered	All investments: restoring works, transformation works, important maintenance works
Level of policy	National
Responsible organisation	Ministry of Finance
Start/End year	2000
Budget	Unknown
Project overview, and targeted barriers	Since 1st of January 2000, the VAT rate has been reduced from 21 to 6% for dwellings older than 5 years.
Programme operation	This measure concerns all investments: restoring works, transformation works, important maintenance works and small works like painting. This measure may be cumulated with the tax reduction and the subsidies for energy saving investments.
Results achieved, lessons learnt and evaluation of the programme	Unknown
Other relevant info	http://www.energiesparen.be/node/391
References	MURE II database http://www.isisrome.com/data/mure_pdf/BEL13.PDF

Title	Subsidies to households for improving energy efficiency
Country	Belgium
Sector	Existing residential buildings
Objectives	Energy efficiency
Type of financial instrument	Grants
Products/ Activities covered	Insulation of the walls, roofs, floors, windows, new houses, heating (gas boiler, biomass, heat pump, thermal regulation, instantaneous water-heater with natural gas, mini-CHPs). Efficient equipment: electrical (fridge, washing machine, etc.) and heating (low temperature gas boiler, thermal regulation system, etc.) equipments.
Level of policy	Regional
Responsible organisation	Wallonia and Brussels Capital Region governments
Start/End year	2000 onwards
Budget	6 M€ a year – Walloon Region
Project overview, and targeted barriers	**Walloon Region** The Walloon Region has decided to mobilise the means of the energy fund around a three-year action plan (2005-2007).[1] A budget of 6 million euros is available to private individuals who improve the performance of existing buildings, design low energy consumption dwellings and invest in high performance equipment in terms of energy efficiency. Concretely, 13 subsidies are planned in the field of insulation of the walls, roofs, floors, windows, new houses, heating (gas boiler, biomass, heat pump, thermal regulation, instantaneous water-heater with natural gas, mini-CHPs), energy auditing and ventilation. **Brussels** In addition to regional renovation, subventions and federal fiscal deductions for energy efficient investments, subsidies are given to households for installing efficient equipment : electrical (fridge, washing machine, etc.) and heating (low temperature gas boiler, thermal regulation system, etc.).
Programme operation	For the Brussels region measures and equipment must be undertaken and installed by professionals certified by professional bodies or registered with the Federal Public Service for Finance. The measures can apply either to new construction, renovations, or both. For renovations, buildings must be at least ten years old to qualify. In the subsidy scheme for individuals, measures that benefit from subsidies cover six categories: • Energy audits (50% of the cost, up to a maximum of 400€/home); • Insulation and ventilation (the cost is usually per m^2, depending on the type of insulation and materials used). The measures cover roof, floor, window and ceiling insulation; green roofing; external solar protection; mechanical ventilation with heat recovery; and passive or ultra-low energy house (new construction or renovation); • Efficient heating, covering: condensing gas boilers, instant hot water gas heaters, heat pumps and thermal control device. The subsidy is generally 30-50% of the total cost up to a maximum amount; • Use of renewable energy: offers 50% of the cost (up to maximum of 3000€ or 6000€ depending on use of system) of solar thermal panels, and 3€/W for solar PV panels (maximum 50% of the total cost); • Installation of small-scale cogeneration, covering up to 25% of the cost; • High efficiency appliances: Refrigerators and freezers that meet A++ standards (25% of cost, up to maximum of 150€), and clothes driers (25% of cost, up to maximum of 150€ or 400€, depending on whether electric or gas).

1 Walloon Government Decree of 11 April 2005 "relatif aux modalités et à la procédure d'octroi des primes visant à favoriser l'utilisation rationnelle de l'énergie")

	For collective housing, the scheme covers five areas, similar to the ones for private individuals. The differences are: • For energy audits, a variety of kinds of assessments and audits can be covered; • For insulation and ventilation, duct insulation measures are also covered by the scheme; • Besides installation of cogeneration, other efficient energy systems are covered: heating networks, lighting systems and their optimisation, rotating electrical equipment (pumps, ventilators, compressors). 30% of the cost of these measures can be covered by the subsidy. Finally, the scheme for businesses follows the same categories as those above, with notable differences: • Subsidies for ventilation are not limited to mechanical ventilation with heat recovery, but for any ventilation or cooling equipment (30% of costs covered); • Gas hot water heaters are not covered, but any improvement to the efficiency of heating systems is eligible for a subsidy covering 30% of the costs entailed; • Use of other renewable energy sources (other than solar PV or solar thermal) are subsidised up to 40%; • Other measures that improve the energy performance of the building can be subsidised up to 30% of total costs.
Results achieved, lessons learnt and evaluation of the programme	Unknown
Other relevant info	n.a.
References	MURE II database http://www.isisrome.com/mure/output2.asp?Cod=BEL10

Title	Tax reduction for home improvements
Country	Belgium
Sector	Existing residential
Objectives	Energy efficiency
Type of financial instrument	Income tax reduction
Products/ Activities covered	Replacement of old boilers, solar water heaters, roof installation, double glazing, central heating system, energy audit, boiler maintenance
Passive houses	
Level of policy	Federal
Responsible organisation	Ministry of Economy
Start/End year	2001
Budget	Unknown
Project overview, and targeted barriers	Under federal law, tax reductions are offered when undertaking one or more of the following measures: 1. Replacement or maintenance of water heating systems, with new heaters meeting minimum efficiency requirements (reductions amounted to 15% of investment in the first year, up to 40% in the following years); 2. Installation of a solar water heating system; 3. Installation of solar photovoltaic panels for electricity production, with installed system meeting certain efficiency requirements; 4. Installation of geothermal heat pump (since 2004); 5. Installation of double glazed windows meeting minimum efficiency standards (U value); 6. Roof insulation, meeting minimum efficiency standards (R value); 7. Installation of thermostatic valves or regulated thermostats (reductions are offered for the installation of one of the systems where the other is already present, or for the installation of both together if neither are present) 8. Undertaking an energy audit 9. Installing wall and floor insulation investments (since 2009) benefiting from a tax reduction. Since 2009, an interest rate reduction is also provided for energy efficiency investments in homes, for loan contracts until end-2011. The interest fees related to loan contracts for these investments are also included in the tax reduction measure. From 2009 an income tax reduction is also awarded to owners of new passive dwellings. The tax reduction is awarded for: • the construction of a passive dwelling; • the purchase of a new passive dwelling; • the total or partial renovation in view of transforming a property in passive residential building.
Programme operation	The maximum amount of expenses per house rose from 500€ in 2002-2004 up to 2650€ in 2008 and the tax reduction from 15 % in 2002-2004 up to 40% in 2008. For the installation of solar photovoltaic panels, the maximum amount is 3380€. In addition, following investment the homeowner pays fewer municipal taxes, resulting in average savings of 225€. For passive houses tax reduction amounts to 790€/year for 10 years. It may be cumulated with the tax reduction for energy saving investments.

Results achieved, lessons learnt and evaluation of the programme	Unknown
Other relevant info	n.a.
References	MURE II database http://www.isisrome.com/data/mure_pdf/BEL1.PDF IEA Policies and measures database http://iea.org/textbase/pm/?mode=cc&id=4075&action=detail

Title	Green Saving Programme
Country	Czech Republic
Sector	New residential / Existing residential The support is granted for equipment installed in residential houses, not buildings intended for individual recreation or industrial buildings, even if the applicant has their permanent residence there.
Objectives	Energy efficiency
Type of financial instrument	Subsidy
Products/ Activities covered	The main areas covered are: **A: Energy savings in heating** - complex (at least 40% savings, specific heat use: family house –up to 70/40 kWh/m^2, apartment building – up to 55/30 kWh/m^2) or partial thermal insulation (at least 20/30% savings). Apartment buildings are eligible only for complex insulation. **B: Construction in the passive energy standard** (specific heat use: family house –up to 20 kWh/m^2, apartment building – up to 15 kWh/m^2) **C: Use of renewable energy sources for heating and hot water preparation** - replacement of environment unfriendly heating for low-emission biomass-fired sources and efficient heat pumps; installation of low-emission biomass-fired sources and efficient heat pumps in new buildings ; installation of solar-thermal collectors **Subsidy bonus for selected combinations of measures** - Some combinations of measures are eligible for a subsidy bonus (an application must be submitted at the same time and no more than once per building, even if more than one of the listed combinations is used)
Level of policy	National
Responsible organisation	Ministry of Environment State Environmental Fund
Start/End year	April 2009- Dec 2012
Budget	The Czech Republic has raised funds for this programme from the sale of emission credits under the Kyoto Protocol on greenhouse gas emissions. The overall anticipated programme allocation is up to 1 billion€. Existing contracts: • March 2009 – NEDO (40 mil. AAUs) • September 2009 – Mitsui & Co. Ltd. (20 mil. AAUs) • October 2009 – Austria (3.5 mil. AAUs) • October 2009 – Spain (5 mil. AAUs)

Project overview, and targeted barriers	The Green Savings programme focuses on support for heating installations utilising renewable energy sources and investment in energy savings in reconstructions and new buildings. The programme supports quality insulation of family houses as well as panel and non-panel multiple-dwelling houses, the replacement of environment unfriendly heating for low-emission biomass-fired boilers and efficient heat pumps, installations of these sources in new low-energy buildings, as well as construction of new houses in the passive energy standard.
Programme operation	Applications for subsidies will be admitted until 30 June 2012 or until the programme funds are drawn down. A subsidy may be applied for before or after implementing the measure, but support for measures completed before the programme's launch cannot be granted. The support is granted for equipment installed in residential houses, not buildings intended for individual recreation or industrial buildings, even if the applicant has their permanent residence there. Applicants eligible for the subsidy are either owners or builders of family and multiple-dwelling houses subject to certain tax liabilities. The programme's focus necessitates the use of such materials, products and equipment with such services that ensure the attainment of programme goals and environmental benefits for the community and, at the same time, guarantee the quality to project implementers. For this reason, only products, equipment and technologies listed in the "List of Products and Technologies" and services listed in the "List of Qualified Suppliers" are eligible for the programme subsidy. Both lists are open to all suppliers and products that meet the pre-defined programme conditions. The entry in the list is not subject to the payment of a fee.
Results achieved, lessons learnt and evaluation of the programme	At the end of March 2010, almost 9000 applications had been received by the managing authority of the Green Savings programme for the total amount of 61,141,000€. More than half of the applications are for measures under area C (use of renewable energy sources for heating and hot water), the rest are for measures in area A(energy savings in heating). Only a few applications have been received for measures in area B (passive housing). The average subsidy requested varies depending on the type of buildings – 4,615 for family houses, 354,040 for non panel blocks and 124,115 for panel blocks. By 2012, the Green Savings programme will bring: • A reduction in CO_2 emissions of 1.1 million tons, which is 1% of all Czech emissions • 6.3 PJ energy savings in heating, which represents an annual saving in household heating costs of billions of Czech crowns • Creation or retention of 30,000 jobs • Improvement of housing conditions for 250,000 households receiving the support • 3.7 PJ increase in heat generation from renewable energy sources • 2.2 million kg reduction in dust particle contamination.
Other relevant info	n.a.
References	The Green Saving Programme http://www.zelenausporam.cz/sekce/582/about-the-green-savings-programme/ Czech Republic Green Investment Scheme, Martin Bursik, EuroAce event at EU Sustainable Energy Week 2010: Fuelling Energy Efficiency in Buildings.

Title	National Environment fund: Operational Programme Environment (OPE) Grants from the OPE for the Sustainable Use of Energy Sources
Country	Czech Republic
Sector	Existing commercial / existing public/social Municipalities, towns, regions, contributory organisations, universities, non-profit organisations and business organisations owned by municipalities and towns are encouraged to apply for grants.
Objectives	Increase the use of renewable energy sources for generating heat and electric energy, as well as the use of waste heat.
Type of financial instrument	Grants up to 85% of a project's total eligible expenditures (project's minimum amount of eligible expenses has been set at CZK 0.5 million).
Products/ Activities covered	Renewable energy sources for heating in buildings, cooling and hot water heating/ photovoltaic systems/wind, small water, geothermal and biomass power & burning plants/ cogeneration facilities/thermal insulation/waste heat technologies.
Level of policy	National
Responsible organisation	Ministry of Environment
Start/End year	2007-2013
Budget	Between 2007 and 2013, this programme will offer almost 5 billion € from the Cohesion Fund and the European Regional Development Fund, and an additional 300 million € from the National Environmental Fund of the Czech Republic and the state budget. The Operational Programme's main goal is to protect and improve environmental quality throughout the Czech Republic. Resources totalling almost 673 million €are available from the Cohesion Fund in the Operational Programme Environment (OPE) for Grants from the OPE for the Sustainable Use of Energy Sources.
Project overview, and targeted barriers	OPE areas of intervention are divided into eight priority axes: • The Improvement of Water Management Infrastructure and Reduction of Flood Risks, 40.4 % of total funding • Improvement of Air Quality and Reduction of Emissions, 2.9 % of total funding • Sustainable Use of Energy Sources, 13.7 % of total funding • Improvement of Waste Management and the Rehabilitation of Old Ecological Burdens, 15.8 % of total funding • Limiting of Industrial Pollution and Environmental Risks, 1.2 % of total funding • Improving the State of Nature and the Landscape, 12.2 % of total funding • Development of Infrastructure for Environmental Education, Consultancy and Awareness, 0.9% of total funding • Technical Assistance With respect to buildings and energy efficiency, the main aims of OPE are: **Heat generation** The construction and modernisation of local and central heat sources using renewable energy sources for heating in buildings, cooling and hot water heating. **Electric energy generation** The installation of photovoltaic systems for electric energy generation. The construction and modernisation of wind and small water power plants. The construction of geothermal power plants and biomass burning plants (solid, gaseous or liquid biomass). Grants may account for 20% of the total eligible expenses, however, there is a maximum limit of CZK 50 million.

	Combined generation of electric energy and heat The installation of co-generation facilities burning biogas, waste and sludge gas; biogas stations. The installation of co-generation facilities using solid biomass. Combined generation of electric energy and heat from geothermal energy. Grants may account for 40% of the total eligible expenses, however, there is a maximum limit of CZK 100 million. **The realisation of energy savings** Reducing energy consumption by improving the thermal insulation characteristics of building envelopes. **The use of waste heat** Applying waste heat use technologies.
Programme operation	Grant application can be only submitted during announced calls for each given area of intervention. Continuously updated preliminary plans for calls, and calls currently open are published at www.opzp.cz in the Available Assistance section.
Results achieved, lessons learnt and evaluation of the programme	Unknown
Other relevant info	n.a.
References	Czech Operational Programme Environment http://en.opzp.cz/

Title	Building Retrofit Subsidies: PANEL programme
Country	Czech Republic
Sector	Existing residential buildings
Objectives	The repair, reconstruction and modernisation of apartment buildings constructed using the concrete panel technology, in order to improve energy performance.
Type of financial instrument	Incentives / Subsidies / Grants / Preferential Loans / Third Party Financing
Products/ Activities covered	One of the main pillars of the program is a residential home insulation.
Level of policy	National
Responsible organisation	The State Housing Development Fund (through the Ministry of Regional Development)
Start/End year	2001-ongoing
Budget	Unknown
Project overview, and targeted barriers	There are more than 1.1 million apartments constructed using concrete panel technology in the Czech Republic. Financial subsidies are provided along with contributions to cover interest and guarantees for activities related to repairs and reconstruction of these buildings; non-apartment residential units are explicitly excluded from the programme. Preference is given to economically depressed areas and areas with disturbed environment. Support is also provided for insulating buildings, improving heating systems, distribution pipes and sources of heat and hot tap water, and use of renewable energy sources in buildings which could have a favourable effect on energy efficiency. The Panel programme was modified in May 2009, and continues to provide, in partnership with banks, preferential treatment when receiving loans, as well as subsidy payments to reduce loan interest.
Programme operation	Applicants must undertake a specified list of efficiency improvement measures, and can also undertake small-scale renewable energy equipment installation. The programme applies to owners, who can receive guarantees for loans used to undertake a list of measures. When significant renovation or repair activity is undertaken affecting the building envelope, the building must then meet building energy performance standards. In addition, the programme offers subsidies amounting to between 2.5% and 4% of applicants' loan interest rate. A higher proportion of the interest is reimbursed if more measures are undertaken, or if the building meets Class B energy performance standards. The subsidy is provided up to a maximum of CZK 5 500 per m^2 of floor area, and paid every six months for the duration of the loan.
Results achieved, lessons learnt and evaluation of the programme	Unknown
Other relevant info	n.a.
References	IEA database on policies and measures http://195.200.115.136/textbase/pm/?mode=cc&id=1924&action=detail Knauf Insulation website http://www.knaufinsulation.cz/cs/program-panel

Title	Renovation Loan of Apartment Buildings
Country	Estonia
Sector	Existing residential apartment buildings, built before 1993
Objectives	Support the reconstruction and renovation of apartment buildings to improve energy efficiency by at least 20% by improving the accessibility of loan capital.
Type of financial instrument	Preferential loan - a targeted loan for specific purposes issued by commercial banks directed to complex reconstruction of an apartment building and achievement of energy efficiency.
Products/ Activities covered	Windows / heating controls / heating systems / insulation / ventilation/renewable energy. Required complex reconstruction (minimum 20%-30% energy saving) - complex reconstruction makes it possible to achieve a maximum energy saving and improves the housing conditions of the people living in the building, as well as the internal climate of the building. In a fully reconstructed building it is possible to save on monthly costs considerably. The issuing of the renovation loan also helps to guarantee employment in the building sector.
Level of policy	National
Responsible organisation	The implementing agency is the Ministry of Economic Affairs and Communications Implementer -The Credit and Export Guarantee Fund KredEx
Start/End year	2001-ongoing
Budget	Participation of the association ERDF – 266 milj.EEK (approx. 17 Million €) Participation of the public sector (RE co-financing.) Loan from CEB and own funds of KredEx – 500 milj.EEK (32 Million €) Total budget 766 milj.EEK (49 million €)
Project overview, and targeted barriers	95% of housing stock is in the UK, with 60% of it having been built 1960-1990, indicative of the disproportional aging of the housing stock in the country. Average energy consumption per year in buildings which have not been renovated 200-400 kWh/m^2 (normal 150-230 kWh/m^2) The Credit and Export Guarantee Fund KredEx was founded in 2001 by the Ministry of Economic Affairs and Communications with the aim of improving the financing of enterprises in Estonia, decrease export-related credit risks, enabling people to build or renovate their homes and promoting energy efficiency in Estonia. The EU Structural Funds are combined with the funds from CEB to form a fund for housing refurbishment and offer a long term low interest loan for apartment buildings to achieve energy efficiency. Favourable conditions of renovation loans arise from the combination of zero interest loans for renovation of apartment buildings(allocated by European Union structural funds), with outside financing. This allows credits institutions access to low interest loans over long timeframes.

Programme operation	Loans under the scheme must meet a number of conditions, including: • The length of the loan period is up to 20 years; • The minimum loan amount per one apartment building is 100,000 kroons (6 400€); • A prerequisite for issuing a renovation loan is the existence of an energy audit of the building; • An apartment building shall perform the reconstruction work recommended in the energy audit with the help of the renovation loan to the extent that ensures the achievement of an at least 20% energy saving in apartment buildings with up to 2000m^2 closed net area, and at least 30% energy saving in apartment buildings with more than 2000m^2 net area; • Reconstruction work shall be completed by a building company entered into the register of economic activities (MTR) Within the Programme, apartment buildings are given a renovation loan that shall be used for reconstruction work necessary for increasing the energy efficiency of apartment buildings built before 1993. A list of costs connected with the reconstruction of buildings, as recommended in the energy audit, which can be financed has been developed, and includes costs connected with insulation, replacement of heating and ventilation systems and installation of renewable energy devices, amongst others.
Results achieved, lessons learnt and evaluation of the programme	65 loans were issued up to 2009. The average loan amount was 71 000€ (highest 255 000/ lowest 6300). Energy savings, according to the predictions in energy audits were expected to be 32% on average (highest 74%/ lowest 20%).
Other relevant info	n.a.
References	KREDEX homepage http://www.kredex.ee/1534 Revolving Fund with EU Structural Funds for energy efficiency in multi-apartment buildings in Estonia Mirja Adler Proceedings from JRC workshop in Istanbul http://re.jrc.ec.europa.eu/energyefficiency/pdf/Proceedings_Istanbul_2009/10_ADLER.pd

Title	Green loan for social housing
Country	France
Sector	Social housing
Objectives	Improvement of the energy performance of the social housing
Type of financial instrument	Preferential loan
Products/Activities covered	Improvement of energy performance of social housing
Level of policy	National
Responsible organisation	Case of the Deposits
Start/End year	2009-2020
Budget	1.2 billion €
Project overview, and targeted barriers	A main measure of the Grenelle Environment Round Table was launched the 26th February 2009. This measure, the green loan for social housing, will finance the improvement of the energy performance of the social housing. The convention, signed by the government and the social union for housing, plans a renovation of the 800,000 social housing consuming most energy from 2009 to 2020 and the restoration of 100,000 social housing units in 2009 and 2010. The priority is for social housing with class F or G of the energy performance assessment. 1.2 billion€ of loan with a fixed rate of 1.9% on 15 years is available to finance the restoration of the first 100,000 social housing units.
Programme operation	The government has entrusted the distribution of the green loan for social housing to the Case of the Deposits (CDC), in coherence with the mission of financing the social housing of the CDC and the priority in its strategic planning "Dash 2020". In order to quickly implement this programme, the first 10.000 operations will profit from a raised loan of 1.500€ by housing.
Results achieved, lessons learnt and evaluation of the programme	Programme is in early days of implementation.
Other relevant info	http://www.logement.gouv.fr/article.php3?id_article=6711
References	MURE II database http://www.isisrome.com/mure/output2.asp?Cod=FRA43

Title	Energy Efficiency Tax Credit
Country	France
Sector	Residential buildings
Objectives	Promotion of the products with the best energy performances and to improve the quality of the equipment proposed in the market.
Type of financial instrument	Fiscal/Tariffs/Tax Exemption / Reduction/ Income tax credit
Products/Activities covered	Appliances/Equipment Replacement/Maintenance/Heating control devices/Sanitary water heating/Space heating (insulation)
Level of policy	National
Responsible organisation	Ministry of Finance
Start/End year	2005-ongoing
Budget	Not known
Project overview, and targeted barriers	In 2005 the government reinforced the system of tax credits in favour of energy efficiency materials and equipment using renewable energies. For solar energies this measure has replaced previous subsidies. The tax credit is applied to the purchase price of equipment and materials.
Programme operation	In 2009, the credit was extended to 31 December 2012. Specifications regarding equipment covered were modified in 2006, 2007 and 2009, to account for technological changes. In order to be eligible for the tax credits the building in which the equipment is used must be a primary residence and at least two years old; for renewable energy equipment the building can be new or old. The tax credits are as follows: • 15% for purchases of low-temperature boilers; (until 31 December 2008) 25%[2] for purchases of condensation boilers, thermal insulation and heating regulation devices; 40% for energy production equipment using renewable energy and heat pumps devoted primarily to heat production; increased to 50% for renewable energy used for heating as of 1 January 2006. • 25%[3] for biomass or wood boilers and heat pumps (from 2010); excludes air heat pumps • 50% for obtaining an energy audit, when not required by law (as of 1 January 2009, limited to one audit every 5 years); • 25% for the purchase of equipment and heating systems drawing the majority of their power from cogeneration or renewable energy sources (as of 1 January 2006). Since 2009, the installation costs for thermal insulation of walls, floors, roofs and ceilings are also covered by the tax credit. The tax credit is limited to 8000€ per person, 16 000€ for a couple and 400€ for each additional dependent.

2 This amount increases to 40% if:
- the material and equipment is installed in a home constructed both before 1 January 1977 and that this installation occurs before the 31 December of the second year of the home's acquisition by its present owners;
- the material was purchased after 1 January 2006.

3 The rate remains at its former rate of 40% if the material and equipment is installed in a home constructed both before 1 January 1977 and that this installation occurs before the 31 December of the second year of the home's acquisition by its present owners

<table>
<tr><td>Results achieved, lessons learnt and evaluation of the programme</td><td>Provisional results for the year 2005 concerning the implementation of energy efficiency materials and equipment using renewable energies show a dynamic growth in the development of these equipments in domestic sector.

<table><tr><td>Volume of sales</td><td>2004</td><td>2005</td><td>Evolution 04/05, %</td></tr><tr><td>Individual solar water heating</td><td>8,150</td><td>14,000</td><td>72%</td></tr><tr><td>Combined solar system</td><td>600</td><td>1,800</td><td>200%</td></tr><tr><td>Wood – ind. Equipments</td><td>315,000</td><td>380,000</td><td>21%</td></tr><tr><td>Wood-boiler</td><td>8,800</td><td>20,000</td><td>127%</td></tr><tr><td>Heat-pump</td><td>17,000</td><td>24,000</td><td>41%</td></tr><tr><td>Condensation boiler</td><td>33,000</td><td>75,000</td><td>127 %</td></tr></table>
The implementation of the tax credit in favour of energy savings and renewable energies in 2005 revitalized the market of energy saving equipment and the use of renewable energies in domestic settings.
For the investments realized by the private individuals in 2006 the market for these equipment and their installation is estimated between 3 and 4 billion €/pa. However, as regards the heat insulation, the existing device is unbalanced and almost exclusively dedicated to windows to the detriment of the insulation of the opaque walls. The ratio efficiency / cost of this last one is nevertheless much better than that of the glazed walls.</td></tr>
<tr><td>Other relevant info</td><td>www.industrie.gouv.fr/cgi-bin/industrie/frame23e.pl?bandeau=/energie/developp/econo/be_eco.htm&gauche=/energie/developp/econo/me_eco.htm&droite=/energie/developp/econo/textes/credit-impot-2005.htm</td></tr>
<tr><td>References</td><td>MURE II database
http://www.isisrome.com/mure/output2.asp?Cod=FRA23

IEA policy and measures database
http://www.iea.org/textbase/pm/?mode=cc&id=2327&action=detail</td></tr>
</table>

Title	Energy Savings Certificates Scheme
Country	France
Sector	Residential/commercial/industry
Objectives	The main objective of the scheme is to reach the diffuse potential sources of energy savings, especially in existing buildings.
Type of financial instrument	Trading
Products/Activities covered	Building insulation, heating, hot water production, lighting, ventilation, appliances, etc.
Level of policy	National
Responsible organisation	The ministry in charge of energy (MEEDDAT / Direction Générale Energie Climat) - sets the rules and the obligation, attributes the Energy Savings Certificates,controls the projects ATEE (Association Technique Energie Environnement) - makes proposals to ministry for new standardized actions ADEME (Agence de l'Environnement et de la Maîtrise de l'Energie) - undertakes technical analysis, evaluation and provides information to public bodies and companies
Start/End year	First period July 2006-July 2009
Budget	Unknown
Project overview, and targeted barriers	Under the French program of White Certificates Trading, suppliers of energy (electricity, gas, heating oil, LPG, heat, refrigeration) must meet government-mandated targets for energy savings achieved through the suppliers' residential and tertiary customers. Suppliers are free to select the actions to meet their objectives, such as informing customers how to reduce energy consumption, running promotional programmes, providing incentives to customers and so on. A list of ratified activities was compiled to help the various actors to facilitate the operations. Those exceeding and undercutting their objectives can trade energy savings certificates as required for common compliance. Energy suppliers who do not meet their obligation over the period (2006-2008) must pay a penalty of 0,02€ per kWh. Lump evaluation of energy savings are established for each process, expressed in kWh of final energy, cumulated and present-valued over the life of the product.
Programme operation	Individual obligations are imposed on energy service companies and Energy Saving certificates (ESC) are delivered for actions referenced in an official list of "standardised actions". Eligible parties (local authorities or large companies) can implement actions, obtain ESCs and sell them to obliged bodies, as this is a free trade market, which has been established on a register (www.emmy.fr).
Results achieved, lessons learnt and evaluation of the programme	Up to March 2009: actions in 58 residential buildings, 80 commercial and 19 in industry. As of 1 Jan 2009 36 TWh cumac (specific measurement unit) delivered, 67% of objective achieved. Residential sector represents 88 % of implemented actions and 71% of ECS attributed concern heating, 18 % insulation. In total a reduction of 3,8 TWh/year of the energy consumption has been achieved equal to 0,46% of total residential and commercial consumption. Lessons learnt: There is a need to limit transaction costs; the scheme has to be drawn to diffuse actions, not to precisely count energy savings; stronger and more transparent regulation to control is needed, to set the rules and fix the obligations
Other relevant info	http://www2.ademe.fr/servlet/KBaseShow?sort=-1&cid=96&m=3&catid=12616
References	Energy saving obligations and white certificates in France, Luc Bodineau, Agence de l'Environnement et de la Maîtrise de l'Energie, France, Proceedings of JRC workshop on white certificates, utility and supplier obligations http://re.jrc.ec.europa.eu/energyefficiency/events.htm IEA policies and measures database http://www.iea.org/textbase/pm/?mode=cc&id=2613&action=detail

Title	KfW Programme Energy-Efficient Construction (formerly Ecological construction)
Country	Germany
Sector	New residential buildings
Objectives	Energy efficiency
Type of financial instrument	Preferential loan
Products/Activities covered	Ecological construction and the installation of new heating technology on the basis of renewable energies, combined heat and power and local and district heating in new buildings.
Level of policy	National
Responsible organisation	KFW bank
Start/End year	2005 - ongoing
Budget	Unknown
Project overview, and targeted barriers	The Energy Efficiency Construction programme was preceded by the "Ecological Construction" Programme, which supported the construction of new KfW Energy- Saving Houses 40 and 60 and passive houses, as well as the installation of heating technology on the basis of renewable energies in new buildings. This programme was closed in March 2009. The current programme provides financing for construction, production and first acquisition of KfW Efficiency Houses. The required energy standard must be confirmed by an energy experts, and loans with preferential interest rates are limited to 50,000€. ,.
Programme operation	This programme comes in the form of a long-term, reduced-interest loan with a maturity of up to 30 years including up to 5 repayment-free start-up years, with fixed interest period of up to 10 years, and up to 100% of the building costs but not more than 50,000€ per housing unit. The criteria to be met for loans are as follows: **KfW Efficiency House 55 ($EnEV_{2007}$)** - Energy Conservation Ordinance of the year 2007: • The annual primary energy consumption Qp and the specific transmission heat loss HT´ must not be more than 55% of the values admissible for a new building in accordance with the EnEV2007 and the annual primary energy consumption must not be more than 40 kWh per m^2 of building floor area (A_N) • Passive houses are financed under this variant if the annual primary energy consumption is not more than 40 kWh per m^2 of building floor area and the annual heating requirement Qh is not more than 15 kWh per m^2 of living space **KfW Efficiency House 70 ($EnEV_{2007}$):** The annual primary energy consumption Qp and the specific transmission heat loss HT´ must not be more than 70% of the values admissible for a new building in accordance with the EnEV2007 and the annual primary energy consumption must not be more than 60 kWh per m^2 of building floor area (A_N)
Results achieved, lessons learnt and evaluation of the programme	Lessons learnt – no info available Results achieved – no info available Evaluation of the programme: In the German NEEAP (BMWi 2007), the final energy savings from the further development of the KfW programme "Ecological Construction" are estimated at around 5 to15 PJ per year in the final target year 2016 and about 1 to 3 PJ/a in the intermediate target year 2010.[4] With regard to the present funding of the programme, the impact level is assessed to be low, since it only refers to a relatively low number of new houses. In the medium term, however, if the further development of the programme, which is announced in the NEEAP, will take place, a medium impact could be achieved.

4 This assessment is based on the following assumptions: On the basis of the predicted increase in living space in Germany, an increase in the proportion of space constructed in accordance with the passive housing standard from 0.4% in 2006 to about 40% in 2016 and, as regards energy saving houses, from 4.5% in 2006 to 18% in 2016 is assumed.

Other relevant info	n.a.
References	IEA policies and measures database http://195.200.115.136/textbase/pm/?mode=cc&id=4443&action=detail MURE II database, KfW Programme "Ecological Construction" (KfW Programm "Ökologisch Bauen") http://www.isisrome.com/data/mure_pdf/GER43.PDF KFW websitehttp://www.kfw-foerderbank.de/EN_Home/Programmes_for_residential_buildings/Energy-Efficient_Construction.jsp

Title	**KfW Programme Energy-Efficient Rehabilitation (formerly CO_2 building programme)**
Country	Germany
Sector	Residential buildings
Objectives	Building improvement/energy efficiency,
Type of financial instrument	Grant/Loan
Products/Activities covered	Rehabilitation or refurbishment measures aimed at reducing energy consumption Covered: windows, insulation of the roof as well of the walls and ground floor, heat pumps, ventilation
Level of policy	National
Responsible organisation	KFW Bank
Start/End year	1996-ongoing
Budget	Unknown
Project overview	The KfW CO_2 Reduction Programme (KfW-Programm zur CO_2-Minderung) supports those responsible for investment measures in buildings, for example private individuals, housing companies, housing cooperatives, municipalities, districts, etc. If energy saving is an essential part of contracting projects, they can be supported as well. The programme started in January 1996. In the beginning, it was restricted to the old federal Länder. Since 2001 it has become valid all over Germany. Since 2005 it has been replaced by the new programme in the area of housing construction and modernisation and energy conservation (KfW). The current Energy-efficient rehabilitation programme finances rehabilitation or refurbishment measures aimed at reducing energy consumption.
Programme operation	The investors are granted long-term, low-interest loans with fixed interest rates for up to 10 years and a repayment-free starting-up time of up to 5 years. KfW For an efficiency House the loan can be for a maximum of 75,000€ per housing unit, while for individual measure the loan maximum is 50,000€ per housing unit,. The loan can be repaid at any time one time without costs. A repayment grant is additionally given if the KfW Efficiency House standard is achieved or the acquisition of newly rehabilitated or refurbished residential buildings a) KfW Efficiency House 100 (EnEV2007) - Energy Conservation Ordinance of the year 2007: • The annual primary energy consumption Qp and the specific transmission heat loss HT ´ must not be more than 100% • of the values admissible for a new building in accordance with the EnEV2007

	b) KfW Efficiency House 70 (EnEV2007): • The annual primary energy consumption Qp and the specific transmission heat loss HT´ must not be more than 70% of the values admissible for a new building in accordance with the EnEV2007 Grant up to 15.000€ for buying a KfW Efficiency House (one or two family house with maximum of two dwelling units) or rehabilitation measures which led reduce the energy consumption on the level of a KfW Efficiency House, as well as implementing individual measures, are also available.
Results achieved	Between 1996 and 2004, the total volume of approved loans within the KfW CO_2 reduction programme stood at 6,000 million Euro. In total, 56.8 million m^2 living space in existing buildings was improved. 66% of the loans were used for heat insulation measures, about 20% for the installation of energy-efficient boilers (Kleemann/Hansen 2005). The original KfW CO_2 reduction programme was closed at the end of 2004. The German government have reported that by the end of 2006, more than 2.5 million housing units had been renovated with KfW support since its inception. This resulted in around 1.5 TWh/yr energy savings in 2006, and 703kt CO_2 annual reductions in CO_2 emissions. Through the implementation of the programme, around 220,000 new jobs were created. It was further estimated that the various KfW programmes for buildings had a combined impact of emission reductions of around 1 Mt CO_2 emission reduction per year. Lessons learnt: no info available Programme evaluation: A first evaluation is available for the first phase of the programme which was restricted to the old Federal Länder. Assuming a total credit volume of 5000 million DM (2500 million €), the total savings of energy and CO_2 achieved by the programme were estimated at about 21.7 PJ and 1.9 Mt respectively. For the period 2002-2004, an evaluation of the KfW CO_2 reduction programme was carried out by the Forschungszentrum Jülich on behalf of the KfW (Kleemann et al. 2003; Brockmann 2006).. Between 2002 and 2004, the total volume of approved loans amounted to 2.4 thousand million Euro (205 000 living units) which is equivalent to a total investment volume of 5.4 thousand million Euro. The resulting cumulated CO_2 reductions for the period 2002-2004 were estimated at 790 kt (net impact). The impact of the KfW CO_2 reduction programme during the period 2000-2003 was also calculated by Prognos/IER (2004). During this period, loans with a volume of 3 thousand million Euro were granted, mainly for insulation measures and new boilers (since 2002 also for Energy Saving Houses). As a result of the measures financed between 2000 and 2003, final energy savings of about 1.9 TWh were achieved in the year 2003 (and in the following years). This means a reduction of CO_2 emissions by almost 0.6 Mt for the period 2000-2003, which is a lower estimate compared to the two other evaluations described above.
Other relevant info	n.a.
References	IEA policies and measures database http://195.200.115.136/textbase/pm/?mode=cc&id=4443&action=detail MURE II database, GER26 KfW CO_2 Reduction Programme (KfW-Programm zur CO_2-Minderung), http://www.isisrome.com/mure/output2.asp?Cod=GER26 KFW website http://www.kfw-foerderbank.de/EN_Home/Programmes_for_residential_buildings/Energy-Efficient_Rehabilitation.jsp

Title	KfW Programme Housing modernisation
Country	Germany
Sector	Rehabilitation or refurbishment of residential buildings (no nursing or other types of homes or hostels, holiday homes or weekend cottages)
Objectives	Energy efficiency/Accessibility
Type of financial instrument	Loans
Products/Activities covered	Renewal of central heating installations, and other housing access and modernisation features.
Level of policy	National
Responsible organisation	KFW Bank
Start/End year	2005 - ongoing
Budget	Unknown
Project overview, and targeted barriers	Housing Modernisation for modernisation measures and CO_2 reduction measures in residential buildings across the Federal Republic of Germany and also for the demolition of empty residential rental buildings for the purpose of urban renewal in the eastern federal states and eastern Berlin. The main targets for the fund are: **Modernisation and rehabilitation of residential buildings (Standard - 141)**, examples: • Improvement of the utility value in general housing conditions (e.g. home floorplan, sanitary installations, balconies/loggias, lifts) • Repair or replacement of defective building components (e.g. windows, floors) • Construction measures after partial deconstruction • Renewal of central heating installations or their components • External areas of multi-family buildings (e.g. greens, external facilities, playgrounds) **Improvement of accessibility in homes, residential buildings and living environment (Senior Housing Conversion - 155)**, examples: • Elimination of steps, thresholds, construction of wider doorways • Handrails, intercom systems, door drives, lifts • Modification of home floorplan, remodelling of bathrooms • Technical installations (e.g. switches, connections, control devices) • Construction of holding areas, weather protection The measures must comply with the minimum technical requirements specified in the annex to the programme information sheet.
Programme operation	All investors have investments in owner-occupied or rented residential buildings are eligible to apply: private individuals, housing companies, housing cooperatives, other investors who renovate residential housing, municipalities, districts, municipal associations, other bodies and institutions incorporated under public law. Investors receive a long-term, low-interest loan with a fixed interest rate and redemption-free grace years. As a private investor one can apply for the loan with any bank or savings bank, which will lend the funds. Municipalities and municipally-owned enterprises apply directly to KfW Förderbank. • In the form of a long-term, reduced-interest loan with a maturity of up to 30 years including up to 5 repayment-free start-up years • Fixed interest period of up to 10 years • Up to 100% of the financeable costs, Standard - maximum of EUR 100,000 per housing unit Senior housing conversion - maximum of50,000€ per housing unit

Results achieved, lessons learnt and evaluation of the programme	Lessons learnt – no info available Results achieved – no info available Evaluation of the programme: A first evaluation of the new housing modernisation programme was carried out by Kleemann/Hansen (2004), based on the experience from the former CO_2 reduction programme and the housing modernisation programmes. Assuming a total credit volume of 9 thousand million € up to 2010 (or 1.5 thousand million € per year), of which assumed 25 % are used for energy saving "Öko-Plus" measures, the total cumulative CO_2 reduction in 2010 amounts to about 0.6 million tons or 0.1 million tons per year, which is a considerably lower estimate compared to the estimated impact of the former Housing Modernisation Programme 2003 and the KfW CO_2 Reduction Programme. Another ex-ante evaluation of the new housing modernisation programme was carried out by a group of research institute on behalf of the Umweltbundesamt (2008). The impact calculation in this study is based on a space heating model including a representative sample of the building stock, which is characterized by specific building types. The total CO_2 reductions which are calculated with the heating model are extrapolated to the number of buildings which can be improved in terms of energy efficiency with the funds of the new housing modernisation programme. For the period 2005 until 2030, a total credit volume of 1 thousand million € is assumed for this programme. With regard to the impact of the former programmes and taken into account the improved conditions of the programme valid since 1 February 2006, the impact level of the new programme is characterized as medium.
Other relevant info	n.a.
References	MURE II database, KfW Programme "Housing modernisation" (KfW Programm "Ökologisch Bauen") http://www.isisrome.com/mure/output2.asp?Cod=GER42 KFW website http://www.kfw-foerderbank.de/EN_Home/Programmes_for_residential_buildings/KfWHousing.jsp

Title	Grants for Renovation & Prefabricated-Panel Residences
Country	Hungary
Sector	Panel buildings/residential
Objectives	Energy efficiency
Modernisation and renovation	
Type of financial instrument	Grant
Products/ Activities covered	A subsidy can be claimed for the works performed during the renovation of residential buildings built with industrialised technology resulting energy saving as well as for the modernisation and renovation of the surroundings of the buildings: a) Subsequent heat insulation b) Renovation of building engineering systems (resulting energy saving). c) Modernisation and renovation of building surroundings. d) A subsidy may be claimed for the development of the individual adjustment of heating energy consumption together with the conditions of metering (replacement of radiators and connecting valves for the realisation of individual metering or cost sharing and all required modifications of the heating network) for the district heating equipment of each flat in a building built with industrialised technology. The housing associations and condominiums may apply individually for the subsidy of the completion of the works listed in this point.
Level of policy	National
Responsible organisation	National Housing and Building Office.
Start/End year	2001
Budget	By the end of 2005 the total amount of paid grants is 20 382 mHUF:
Project overview, and targeted barriers	The "Panel Program" grant funds the renovation of residential buildings built with prefabricated panels; these are large, 10 storey buildings with low thermal U value. The grant includes some funds for renovation of roads, parking areas, playgrounds and parks in the buildings' vicinity. Eligible energy conservation actions include changing of doors and windows, thermal insulation of walls and ceilings and modernisation of HVAC systems.
Programme operation	The Hungarian state will refund renovation expenses to a maximum of one third of the total investment, an amount not to exceed HUF 500.000 per residence. The remaining two-thirds of the investment can come from the local municipality and from the dweller (own contribution). Emissions avoided by this efficiency upgrade may qualify for trade. The distribution of costs in terms of the renovation cost of the whole building is as follows: • the municipality of the settlement: 1/3 of the costs • the owner(s): 1/3 of the costs • the central state budget: maximum 1/3 of the costs
Results achieved, lessons learnt and evaluation of the programme	By the end of 2005, the renovation of 117 000 flats was be implemented. More than 80 per cent of the winning applications were used for subsequent heat insulation. Lessons learnt – no info available Evaluation of the programme – no info available
Other relevant info	n.a.
References	IEA policy and measures database http://www.iea.org/textbase/pm/?mode=pm&id=2647&action=detail Mure database http://www.isisrome.com/data/mure_pdf/HUN10.PDF

Title	Sardinia Energy Auditing and Renewable Energy Production
Country	Italy
Sector	Commercial
Objectives	Energy Efficiency / Climate change mitigation
Type of financial instrument	Preferential loans
Products/Activities covered	Renewable Energy Sources
Level of policy	Regional - Sardinia
Responsible organisation	Sardinia Regional Council
Start/End year	2007 - ongoing
Budget	1.5million € in 2006 for audits, energy efficiency and renewable energy
Project overview, and targeted barriers	In 2006, the Sardinia Regional Authority established financial incentives for local enterprises to conduct energy audits and to invest in energy conservation through efficient production and operation and through the development of local renewable energy sources. Project environment: In 2007 the European Commission approved a Regional Operational Programme for Sardinia in Italy for the 2007-2013 period. The Operational Programme falls within the framework laid out for the Regional Competitiveness and Employment Objective and has a total budget of around 1.7 billion €. Community funding through the European Regional Development Fund (ERDF) amounts to some 681 million €, which represents approximately 2.4% of the total EU investments earmarked for Italy under the Cohesion Policy for 2007-2013. One of the 7 priorities listed for the ROP is bringing about energy efficiency and the use of renewable energy sources.
Programme operation	No info available
Results achieved, lessons learnt and evaluation of the programme	No info available
Other relevant info	n.a.
References	Legislative details (Italian): http://enerweb.casaccia.enea.it/enearegioni/esplora/download.asp?File=/enearegioni/UserFiles/OSSERVATORIO/Sito/Sardegna/DGR_22-5_2006_SARD.zip

Title	Energy Investment Allowance (EIA)
Country	Netherlands
Sector	Commercial
Objectives	Energy Efficiency
Type of financial instrument	Tax break
Products/Activities covered	List of eligible technologies is updated annually; includes CHP
Level of policy	National
Responsible organisation	Ministry of Economic Affairs, Ministry of Finance, AgentschapNL and the Belastingdienst (Dutch tax authorities) are responsible for implementing the scheme.
Start/End year	2004 - ongoing
Budget	€137m in 2005
Budgets are set annually	
Project overview and targeted key barriers	Since 2004 the Energy Investment Allowance has encouraged entrepreneurs who invest in relatively innovative energy-efficient technologies or projects of renewable energy to deduct (under certain conditions) part of their investment costs from their corporate income tax. When initially launched, no specific targets were put in place. In 2004, the net benefits were decreased to 13% of investment costs (the precise rate of the benefits depends on the applied tax tariff). The Energy Investment Allowance has been decreased to 44% as from 1 January 2005, meaning that forty-four percent of the annual investment costs for such equipment (purchase costs and production costs) are deductible from the taxable profit over the calendar year in which the equipment was procured, subject to a maximum of €115m. The EIA was established to overcome the disincentive to invest in energy efficient technologies and renewable energy. Such investments would be considered low priority or not cost-effective without an incentive to invest such as the EIA. 1. EIA overcomes two barriers: It ensures that users, who would otherwise not consider the negative environmental externalities of their investments are given an incentive to invest in more efficient technologies 2. Overcomes the barriers of incomplete information in the area of efficient investments (e.g. understanding the technological options available, calculating pay back periods)
Programme operation	The Energy List determines which types of equipment qualify for this programme. For buildings, this includes new and renovated buildings that achieve substantial energy savings, energy efficiency improvements, reductions in heating or cooling demand, re-use of heat, and energy efficient lighting. The costs of obtaining energy advice are also covered, provided that the advice results in an investment in energy-saving equipment. In order to be eligible for EIA support the costs of a corporate asset must be at least €450 and the total amount of the energy investments per calendar year must be at least €2,200. Investment costs, up to a maximum of €115 million per calendar year may be reported. Companies must report their investments to the 'Bureau Investeringsregelingen en Willekeurige afschrijving (IRWA)' in Breda within three months of ordering these corporate assets

Results achieved, lessons learnt and evaluation of the programme	In 2004, it was estimated that the scheme saved 40PJ (1200 $ktCO_2$)[5] Lessons learnt: From 2006 evaluation report: • Energy list is an easy reference manual for users • The Energy List is 'open' so new technologies are added annually • Entrepreneurs are engaged with the scheme • The EIA integrates well with other policy instruments used in the Netherlands; these policies in turn contribute to the success of the EIA as they encourage the need for energy efficient investments • Application processing times could be improved • Because the EIA was set up without any specific aims (either in terms of energy savings or cost reductions) evaluating the success of the programme has been difficult • There is still a degree of 'free-riding' on the scheme, which needs to be tackled by adjusting the Energy List
Other relevant info	*Calculation example:* "Suppose your fiscal profit is €500,000. The corporate taxes amount to 20% of the first tax bracket, up to €200,000 and 25.5% over the profit above €200,000. You purchase new corporate assets to the value of €300,000, which are eligible for EIA support. The EIA amount is thus 44% of €300,000, or €132,000. Your fiscal profit is now reduced to just €368,000 (i.e. €500,000 minus €132,000). Without EIA support you would have to pay €116,500 in corporate taxes. However, by making use of the EIA scheme your tax payment is reduced to just €82,840. Your direct tax advantage amounts to €33,660. This is thus 11% net advantage on your initial investment of €300,000."
References	Energy Investment Allowance factsheet (2010): http://www.senternovem.nl/mmfiles/Energy%20Investment%20Allowance% 202010%20 (leaflet)_tcm24-325264.pdf Energy List http://www.senternovem.nl/eia/energielijst/generieke_bedrijfsmiddelen_bouwwerken.asp Evaluation of the Energy Investment Deduction Scheme (Ecofys, 2006)

5 http://www.sea.gov.sk/archiv/subory/taiex_prednasky/johannes_van_steenis.pdf

Title	More with Less Programme
Country	Netherlands
Sector	Existing Residential
Objectives	Energy Efficiency
Type of financial instrument	Third Party Financing
Products/Activities covered	Various domestic energy efficiency measures
Level of policy	National
Responsible organisation	Ministry of Housing, Spatial Planning and The Environment
Start/End year	2008-2020 (phase 1 runs 2008-2011)
Budget	Unknown
Project overview and targeted key barriers.	The "More with Less" programme is a joint voluntary initiative from the Dutch government, energy retailers, social housing providers, construction and installation companies. Identification of savings potential and monitoring progress takes place through use of energy performance certificates for buildings (which are a result of the EPBD). The Programme aims to tackle the obstacles faced by each target group (home owners, tenants, housing companies and building owners). To overcome financial barriers the programme ensures fixed monthly expenses. In other words, the increase of monthly expenses for energy efficiency investments will be at least set-off by the monthly gains in terms of reduction of the energy bill. This is accompanied with education in cooperation with consumer organisations and feed back on energy use every two weeks.
Programme operation	The energy efficiency measures and programme benefits are provided at periods within the regular renovation cycle that is in the case of removal and renovation, when people are already inclined to invest. The programme focuses on enabling building owners to conserve energy with the least possible effort. The entire process, from receiving certified energy advice up to installing the required energy efficiency measures, is taken care of by the contact person of the building owner. The contact person can be the contractor, the energy counsellor, the installer, the architect; it is s/he who is a one-stop contact point and can if needed arrange for various aspects of the programme: subsidies, energy label, offers, finance, etc.
Results achieved, lessons learnt and evaluation of the programme	It aims to make 500 000 buildings 30% more energy efficient in the period 2008 - 2011, increasing to 2.4 million buildings by the year 2020. It is estimated that by 2020, the Programme will have saved 50-100PJ. Lessons learnt: Collaborative working is a key part of the programme, which is a joint initiative (see above). The programme is supported by home owner and consumer representative organisations and aims at specific target groups: home owners, tenants, housing companies and building owners, ensuring that all market parties involved participate and send out the same message.
References	More with Less website (Dutch): www.meermetminder.nl/home/ More with Less factsheet (Dutch): www.vrom.nl/docs/200706-meer-met-minder.pdf Odyssee-Mure country profile: www.odyssee-indicators.org/publications/country_profiles_PDF/nld.pdf

Title	Incentives for Low Energy Housing
Country	Norway
Sector	New and existing residential
Objectives	Energy Efficiency
Type of financial instrument	Preferential loans
Products/Activities covered	Projects cover low energy housing, passive houses and environmentally friendly renovations and modernisations.
Level of policy	National
Responsible organisation	Norwegian State Housing Bank (NSHB)
Start/End year	2002 - ongoing
Budget	NOK 12m in 2006 (for 52 projects relating to energy and environment)
Project overview, and targeted barriers	NSHB is the main agency implementing Norwegian housing policy. The NSHB provides preferential loans to new residential building projects with a strong environmental focus. Loans of up to 90% financing are offered. The bank has entered into a collaborative agreement to market houses which host the Swan Nordic Ecolabel. Such houses qualify for the bank's loan.
Programme operation	The basis for the Housing Bank's environmental work is the country's Environmental Action Plan (2005-2008) issued by the Ministry of Local Government and Regional Development. The NSHB also offers grants of up to 80-90% of costs for research and development into projects which will help Norway meet its national environmental targets. The projects that received a resource grant in 2007 within the environment and energy area focussed on various subjects such as developing passive houses and low-energy houses, documentation of environmentally-friendly materials in houses and buildings, developing the scheme for the Swan labelling of houses, reuse and recycling of building materials and products. In terms of wider implementation of related targets, the Norwegian Water Resources and Energy Directorate is in charge of implementing the EPBD. In accordance with the Directive, the National Office of Building Technology and Administration has developed new technical regulations for buildings, increasing the requirements for energy efficiency. The new regulations will reduce the total energy used in new buildings by 25%. New regulations were put into force on 1 January 2007 and were planned to be fully implemented by 1 August 2009.
Results achieved, lessons learnt and evaluation of the programme	The NSHB website indicates that on average new homes built with its loans, save 40% or more energy, while improvements to existing homes yield savings of 20-40%. Lessons learnt – no info available Evaluation of the programme – no info available
Other relevant info	With respect to social housing, the role of the NSHB has been scaled back over recent years. Today the State Housing Bank finance not more than approximately 50 % of the dwellings built in Norway every year, while the number has been as high as 90 % historically.[6]
References	Housing Bank page on Loans and Grants: http://www.husbanken.no/Venstremeny/en_environment/Loans%20and%20Grants.aspx Website on low energy housing in Norway (in Norwegian): http://www.lavenergihus.no/

6 www.cecodhas.org/index.php?option=com_content&task=view&id=84&Itemid=126

Title	Infrastructure and Environment Operational Programme (IEOP)
Country	Poland
Sector	Public and not-for-profit sector
Objectives	Modernisation
Type of financial instrument	Subsidy
Products/Activities covered	• Financial support for projects relating to the energy efficiency modernisation of public buildings and for exchanging the equipment in these buildings for energy saving equipment. • Full financing for the preparation of the complex documentation required to apply for and implement undertakings under this measure. • Actions to support energy efficiency modernisation projects for public buildings under regional operations programmes.
Level of policy	National
Responsible organisation	Ministry of Regional Development responsible for the wider programme
Start/End year	2007-2013
Budget	1.5billion € for Priority 9. Total budget of 37.56billion € for the entire IEOP.
Project overview, and targeted barriers	The IEOP is a multi-billion EC funded programme to supporting the development of technical infrastructure, and simultaneously protecting and improving the condition of the natural environment and health as well as preserving cultural identity and developing territorial cohesion. This programme is complementary to other regional programmes. The Community assistance amounts to 22.18 billion € from the Cohesion Fund and 5.74 billion € from the ERDF. The EU contribution is approximately 41% of the total EU support for Poland under Cohesion policy 2007-2013). This is also the biggest-ever operational programme in the whole of the European Union. There are 15 priorities listed under the project detail. Of these priorities, the following is the most pertinent to energy efficiency in buildings: **9. Environment-friendly energy infrastructure and energy efficiency** • Improve security of supply and limit the negative effects of climate change. Support from the Cohesion Fund will be granted for initiatives aimed at increasing the share of primary energy use in the energy sector (i.e. increasing the efficiency of production and decreasing losses in the process of transmission and distribution of energy). Investments will target decreasing the energy intensity of the public sector, as well as increasing the amount of energy produced from renewable sources, including biomass, wind, solar and geothermal energy. Project environment: The wider programme was implemented to tackle the degradation and lack of infrastructure in Poland. This is in order to increase the country's competitiveness and attract investors. The programme is also an important instrument for the implementation of the renewed Lisbon Strategy. Specific energy targets for Poland by 2020: • Reduction of GHG within ETS (e.g. energy sector) • Increase emissions of GHG in non-ETS sector (e.g. transport/agriculture) by14% • Increase share of renewable energy sources in final demand by 15% Buildings consume approximately 40% of total energy in Poland. In 2009, Poland's Ministry of Economy launched a new strategy 'Poland's Energy Policy until 2030'.

Programme operation	Use of Regional Operational Programmes to undertake building efficiency projects.
Results achieved, lessons learnt and evaluation of the programme	Info not available
Other relevant info	n.a
References	Infrastructure and Environment Operational Programme description: http://ec.europa.eu/regional_policy/country/prordn/details_new.cfm?gv_PAY=PL& gv_reg=ALL&gv_PGM=1212&LAN=7&gv_per=2&gv_defL=7 Poland's Energy Policy by 2030 http://www.mg.gov.pl/English/Programmes/Polands+Energy+Policy+until+2030.htmc Poland Energy Fact sheet (2008) http://www.odyssee-indicators.org/publications/country_profiles_PDF/pol.pdf

Title	**Thermal modernisation and Renovation Fund**
Country	Poland
Sector	Existing residential / Existing tertiary
Objectives	Climate change mitigation / Energy Efficiency
Type of financial instrument	3rd party financing
Products/Activities covered	The eligible projects are as follows: • improvement that results in reduction of annual energy consumption for heating and hot water purposes at least: - in building where only heating system is modernised– by at least 10%; - in building where heating system has been already modernised – by at least 15%; - in other buildings - by at least 25%; • improvement that results in reduction of annual primary energy losses in local heat sources and local distribution networks - by at least 25%; • installation of technical couplings to the centralised heat sources in connection to liquidation of local heat source aimed at reduction of costs of purchase of heat supplied to buildings - by at least 20% per annum
Level of policy	National
Responsible organisation	Ministry of Environment
Start/End year	1999-2016
Budget	ZL 270m in 2008 for energy efficiency in buildings; ZL 500m allocated between 1999 and 2008

Project overview, and targeted barriers	The residential sector in Poland consumes 40% of the country's primary energy, and has historically consumed above the EU average. It has 11.8m housing units, with a total usable area of around 700 million m^2. Prior to 1997, schemes aimed at thermo-renovations of panel buildings were deemed unsuccessful, due to poor quality of refurbishment works undertaken, limited financing, and restricted scope. In 1998 the 'Act on Support for Thermo-modernisation Investment in Buildings' was established, which defines the Government's principles of support for thermo-modernisation investment projects. The Thermal Modernisation Law and Fund were introduced in 1999 to support the energy efficient refurbishment of buildings in Poland. The refurbishment projects must meet certain technical and financial criteria, which need to be verified by an energy audit and a financial analysis. The energy savings after refurbishment need to achieve a savings rate of at least 25 percent. Investment projects should cause: • Reduction of consumption of energy supplied for heating/domestic hot water purposes in all types of residential buildings and buildings used by municipal entities for the public service purposes • Reduction of heat losses in local distribution networks and local heat sources, with a maximum capacity of 11.6 MW thermal power • Total/partial replacement of conventional energy sources with non-conventional ones, including renewable heat sources.
Programme operation	The loan of the bank can amount up to 80 percent of the costs of the refurbishment project. If the loan (plus interest), are theoretically repayable on schedule (within 10 years = maximum loan period), then the state owned "National Economy Bank" (BGK) can issue a bonus of 25 percent of the loan rate. An investor (e.g. housing cooperative or homeowners' association) willing to modernise the building applies to the BGK for a thermo modernisation bonus via a lending bank. The results of the respective energy audit are attached to the application. If the refurbishment project is completed successfully, the bonus will be granted just after completion of the investment. The energy audit report shall contain: 1. Identifying data of a building, local heat source, local heat distribution network and its proprietor; 2. An appraisal of the technical conditions of a building, local heat source and local heat distribution network; 3. Description of all possible options of the thermo-modernisation project; 4. Economics analysis of possible measures 5. Identification of an optimum option and the scope of thermal-modernisation project; 6. Detailed description of the optimum option
Results achieved, lessons learnt and evaluation of the programme	Data from 2004:

Year	Number of applications	Volume of investments (million €)	Volume of commercial credits granted (million €)	Total value of premiums granted (million €)
1999	71	1.6	1.0	0.3
2000	235	6.3	3.7	0.9
2001	157	6.4	3.8	1.0
2002	286	19.7	12.4	3.1
2003	654	43.2	28.0	5.8
TOTAL	1403	77.2	48.9	11.0

Odyssee-Mure estimates that the Fund saves approximately 131 ktoe each year.

	Lessons learnt: A training scheme accompanies the Law. Building Energy Auditors are trained through a nationwide training scheme, set up by the Polish National Conservation Agency (KAPE) in co-operation with two other bodies. Up until 2002, 3,400 architects, HVAC and civil engineers were trained. The establishment of the scheme allowed for the implementation of the thermal modernisation programme. Until mid-2002 the thermo modernisation fund was not a very successful scheme. Within 3 years, only 500 proposals were made and investment totalled €15m. This was mainly due to complicated application procedures, e.g. for housing cooperatives and a high level of interest rates. From 2003 on, after the conditions have been amended, and massive promotion activities were introduced, the number of applications increased significantly. Meanwhile, the volume of the fund is by far not sufficient and not meeting the demand. Since June 2002, credit interest rates have fallen (7-8% in 2004) and the number of applications has risen significantly. Few applications concern Renewable Energy Sources (RES). RES investments do not fulfil the current economic criterions (return investment of less than 10 years) and are not widely promoted. It is expected that this will change over time as RES technologies penetrate the market and investment costs fall. In order for the Thermo-Modernisation fund to support RES technologies, suitable information campaigns need to be directed to local authorities and energy auditors require training. Currently the public sector is not sufficiency targeted by the Fund. The number of applications for public buildings, until 2004, was negligible as a total of all public building stock (0.6%). However there is a great potential to reduce energy consumption in public buildings. Evaluation: no info available
Other relevant info	n.a.
References	Baltic Energy Efficiency Network for Building Stock http://www.been-online.org/The-Thermal-Modernisation-Fund.420.0.html SenterNovem Fact sheet: http://www.senternovem.nl/mmfiles/Thermal%20Modernization%20Law%20and%20Fund_tcm24-117025.pdf Poland's Energy Policy by 2030 http://www.mg.gov.pl/English/Programmes/Polands+Energy+Policy+until+2030.htm Poland Energy Fact sheet (2008) http://www.odyssee-indicators.org/publications/country_profiles_PDF/pol.pdf

Title	Programs for the thermal rehabilitation of multi-level residential buildings
Country	Romania
Sector	Existing residential (built 1950-1985)
Objectives	Energy Efficiency
Type of financial instrument	Grants
Products/Activities covered	Heat insulation (exterior walls, roof) / Replacement of windows & doors /Thermal losses of pipes and furniture in basements
Level of policy	National (urban areas)
Responsible organisation	Overall responsibility lies with Ministry of Development of Public Works and Housing. Annual programmes co-ordinated by mayors of the municipalities, cities and localities,
Start/End year	2002-ongoing
Budget	Unknown 34%[7] of funding comes from state budget allocations (approved annually) 33%[8] of funding comes from local authorities (approved annually) 33%[9] of funding comes from local owner association maintenance funds
Project overview, and targeted barriers	72% of all residential urban buildings are multi-levelled. 58% of these were built 1950-1985).[10] The residential heat consumption in Romania is almost twice the EU average. According to the estimations included in the National Energy Efficiency Action Plan, energy savings of up to 25% can be achieved through the implementation of thermal renovation measures set out in the annual programs, in comparison with the situation prior to renovation. Romania are aiming to cut energy consumption by 13.5% by 2016 (relative to the period 2001-05). Since 2007 Romania has also established a building energy efficiency certification scheme for new and existing buildings. The certificate is accompanied by recommendations for the improvement of energy efficiency. In 2009 Romania launched an Energy Efficiency Programme for the public sector (2009-10). This programme includes thermal rehabilitation of public buildings. The blocks of flats to be covered by the thermal rehabilitation scheme are included in the annual thermal rehabilitation action plan developed by the Ministry of Development of Public Works and Housing each year. Municipalities feed in proposals to the Ministry, which form the basis of the annual plan. Priority is given to older, larger buildings. The special measures for thermal building rehabilitation to be established by energy expertise and energy audit and according to the law they may include: • Heat insulation of the building shell (exterior walls and roof) as well as of the basement, replacement or double glaze of the windows and exterior doors, construction works and painting of the external walls and other structural and non-structural parts of the building shell; • Works for reducing the thermal losses of the pipes and furniture from the basement of the building. A complete return on the investment will be achieved in approx. 6- 8 years, depending on the type of work carried out.

7 This may have changed to 50% in 2009. See http://www.audit-energetic.com/thermal_rehabilitation.html
8 This may have changed to 30% in 2009. See http://www.audit-energetic.com/thermal_rehabilitation.html
9 This may have changed to 20% in 2009. See http://www.audit-energetic.com/thermal_rehabilitation.html
10 http://www.unhabitat.pl/files/70/Romania.pdf

Programme operation	This work comes under the Government Urgency Ordinance (174/2002), which came into force in 2002 and was later modified in 2006. GUO 172/2002 puts in place special measures for the thermal rehabilitation of blocks of flats, built 1950-1985, to improve energy efficiency. The coordinators of the annual programs are the mayors of the municipalities, cities and localities, respectively the district mayors of Bucharest. They put in place the necessary measures for developing the energy expertise and energy audit of the building and to conclude the conventions with the owner association of the buildings that are included in the annual programs in order to continue the actions for designing and carrying out of the building thermal rehabilitation works. The necessary funds for the energy expertise and audit, feasibility study and design of the thermal rehabilitation works for the buildings included in the annual program are provided by State budget allocations. A step-by-step guide to the operation of the program is can be found online.[11]
Results achieved, lessons learnt and evaluation of the programme	It is estimated that a total of 12,000 toe will be saved 2007-2010 as a result of this program. This equates to approximately 0.2% of final thermal energy consumption of the residential sector. 2005-2006, 637 energy audits were carried out in at least 28 localities in Romania. By 2007 the thermal rehabilitation works program was well underway (exact figures not known). It is estimated that by 2010, 250 blocks of flats will have had insulation work (only) carried out. Lessons learnt – no info available Evaluation of the programme – no info available
Other relevant info	During the period in which the plan is in effect, INCERC (The National Institute for Research and Development in Construction and Construction Economics), which is subordinate to the Ministry of Development, Public Works and Housing, will gather and process data regarding buildings included in annual heat insulation programmes co-ordinated by the ministry.
References	MURE database factsheet: http://www.isisrome.com/data/mure_pdf/RO27.PDF Romania National Energy Action Plan (2007-2010): http://ec.europa.eu/energy/demand/legislation/doc/neeap/romania_en.pdf Energy Efficiency Plan for Public Sector (2009-10): http://www.gov.ro/energy-efficiency-program-for-2009%202010__l2a103701.html

11 http://www.audit-energetic.com/thermal_rehabilitation.html

Title	Scheme of efficient use of energy for households with low incomes
Country	Slovenia
Sector	Existing residential
Objectives	Social equality / Energy efficiency
Type of financial instrument	Grants
Products/Activities covered	• Sanitation of buildings to achieve minimum of energy efficiency standard: thermal insulation of lofts, draught proofing and thermal insulation of critical parts, • Energy efficient lighting and other measures.
Level of policy	National
Responsible organisation	Ministry of Environmental and Spatial Planning
Start/End year	2008 - 2016
Budget	The public money needs from budget are estimated at 21million €
Project overview, and targeted barriers	The Department of Efficient Energy Use and Use of Renewable Energy Sources within the Ministry of the Environment, and Spatial Planning and Eco Fund are responsible for the implementation of the energy efficiency measures in all sectors. The Energy Act, Resolution on the National Energy Program and Control of Pollution Act are the main legal documents for implementation of energy efficiency and utilization of renewable energy sources in Slovenia. The targets of Slovenian policy are to improve the energy efficiency for 10% by 2010 as for 2004 in industry, building, transport and service sectors, and for 15% in the public sector. The targets of the NEEAP are to achieve cumulative savings of at least 4261 GWh or 9% of the final energy consumption in Slovenia under the Directive 2006/32/EC. The necessary public funds for implementation of all measures in NEEAP is estimated at 380 million €. Current energy efficiency measures in Slovenia focus on technologies, and do not consider the social status of households. Latest data shows that 14% of households are under the poverty threshold.
Programme operation	The financial subsidy is to enable implementation of low investment measures to reduce the energy cost and increase living comfort
Results achieved, lessons learnt and evaluation of the programme	The energy saving is estimated at 29 GWh and reduction of CO_2 emissions for 9.5 kt CO_2/year for the period 1.1.2008 – 31.12.2016. Lessons learnt – no info available Evaluation of the programme – no info available
Other relevant info	n.a.
References	Slovenia's National Energy Efficiency Action Plan (2008-16): http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/dokumenti/akcijski_nac rt_energetska_ucinkovitost.pdf MURE database: http://www.isisrome.com/data/mure_pdf/SLO23.PDF

Title	Financial stimulation for energy efficiency renovation and sustainable buildings of new buildings
Country	Slovenia
Sector	New and existing public residential
Objectives	Energy efficiency / Climate change mitigation
Type of financial instrument	Grants / Preferential loans The fund is formed for stimulation (subsidy) of the implementation of energy audits, feasibility studies, investment and project documentation for energy efficiency projects and utilization of renewable energy sources (RES).
Products/Activities covered	• Energy sanitation (thermal insulation of shells and lofts, replacement of windows) • Building of new low energy buildings, • Building of new passive solar buildings.
Level of policy	National
Responsible organisation	Ministry of Environmental and Spatial Planning
Start/End year	2008 - 2016
Budget	The public money needs from budget are estimated at 32 million €.
Project overview, and targeted barriers	The Department of Efficient Energy Use and Use of Renewable Energy Sources within the Ministry of the Environment, and Spatial Planning and Eco Fund are responsible for the implementation of the energy efficiency measures in all sectors. The Energy Act, Resolution on the National Energy Program and Control of Pollution Act are the main legal documents for implementation of energy efficiency and utilization of renewable energy sources in Slovenia. The targets of Slovenian policy are to improve the energy efficiency for 10% by 2010 as for 2004 in industry, building, transport and service sectors, and for 15% in the public sector. The targets of the NEEAP are to achieve cumulative savings of at least 4261 GWh or 9% of the final energy consumption in Slovenia under the Directive 2006/32/EC. The necessary public fund for implementation of all measures in NEEAP is estimated at 380 million €.
Programme operation	The stimulation (subsidy) of the implementation of energy audits is limited to 2.5% of the proposed investment in EE, and utilization of RES. The eligible companies for these subsidies are small or medium enterprises. It is unclear how larger organisations (tertiary sector) fit into the operation of this scheme, even though they are intended beneficiaries.
Results achieved, lessons learnt and evaluation of the programme	The energy saving is estimated at 210 GWh/year and reduction of CO_2 emissions for 54 kt CO_2/year for the period 1.1.2008 – 31.12.2016. Lessons learnt – no info available Evaluation of the programme – no info available
Other relevant info	n.a.
References	Slovenia's National Energy Efficiency Action Plan (2008-16): http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/dokumenti/akcijski_nac rt_energetska_ucinkovitost.pdf MURE database: http://www.isisrome.com/data/mure_pdf/SLO20.PDF Odyssee-Mure report 'Energy Efficiency Policies and Measures in Slovenia': http://www.odyssee-indicators.org/publications/PDF/slovenia_nr.pdf

Title	Support for Energy Efficiency in Buildings
Country	Spain
Sector	Existing residential / Existing public
Objectives	Energy Efficiency
Type of financial instrument	Grants / Preferential loans
Products/Activities covered	Heating, ventilation and cooling systems / Interior lighting / construction/refurbishment of buildings to low energy standards / refurbishment of building envelope
Level of policy	Local – policies are devolved by Provincial Governments
Responsible organisation	Provincial Governments
Start/End year	2008-2012
Budget	804m € for the full period allocated to sustainable energy in buildings (From a budget of 2,367million € for sustainable energy). The budget is split as follows: • Refurbishment of the building envelope *Public support: 175m€ for 2008-2012; Investment: 2,677m€* • Improvement of heating, ventilation and cooling system efficiency: *Public support: 243m for 2008-2012; Investment: 3,719m€* • Improvement of interior lighting efficiency *Public support: 173m€ for 2008-2012; Investment: 2,695m€* • Promotion of the construction of new and refurbishment of existing buildings to very low energy standards *Public support: 209m€ for 2008-201; Investment: 3,969€*
Project overview, and targeted barriers	The 4 measures are part of Spain's Energy Efficiency Action Plan (2008-2012). • **Rehabilitation of the thermal envelope of existing buildings:** the objective of this measure is to reduce the energy demand for heating and cooling in the existing buildings sector by application of energy-efficiency criteria in the rehabilitation of their thermal envelope. • **Improvement in the energy efficiency of existing thermal installations:** the energy actions considered within this measure will be those that allow for a reduction in the consumption of conventional energy, by way of actions on their installations. Energy actions could mean replacement of heat-production or refrigeration equipment, replacement of fluid-movement equipment, use of free cooling systems through external air and recovery of heat from exhaust air. • **Improvement in the energy efficiency of existing internal lighting plants:** energy actions included within this measure will be those that allow for a reduction in the consumption of conventional energy in the internal lighting of buildings, by way of actions on their plant. These actions could mean replacement of lights, bulbs and equipment, installation of switch control systems and regulation of light levels taking advantage of natural light, and a change of lighting system. • **Promotion of construction of new buildings and rehabilitation of existing buildings with high energy rating:** This affects all newly constructed buildings and the modification, alteration or rehabilitation of existing buildings, with a usable surface area of more than 1,000 m^2 where more than 25 percent of their total enclosures are renewed. The energy-efficiency certificate will have to include objective information on the energy features of the buildings, such that their energy efficiency can be assessed and compared, with the aim of encouraging the promotion of buildings with high energy efficiency and investment in energy saving. The energy-efficiency rating assigned to the building is expressed by a scale of seven letters, from A (most efficient buildings) to G (least efficient buildings). Project environment: The final energy consumption of the buildings sector in Spain rose in 2005 to 18,123 ktep against a national total of 106,940 ktep, which represents 17% of national final energy consumption. Of this consumption, 10,793 ktep related to the domestic sector, that is, 10% of national energy consumption, and 7,330 ktep to the tertiary sector, 7% of the national total.

<table>
<tr><td>Programme operation</td><td>For all measures, lines of economic support are created annually and managed by each autonomous community; public administrations are encouraged to play exemplary roles in pursuing the objectives of each measure. Further specifics of each measure are given:
• Rehabilitation of the thermal envelope of existing buildings: this measure is organised under a new housing plan drawn up by the Ministry of Housing
• Improvement in the energy efficiency of existing thermal installations: The revision of the Regulation concerning Thermal Installations of Buildings (RITE), which governs the minimum energy-efficiency requirements of these installations, incorporates the obligation imposed by Directive 2002/91/EC to inspect periodically the boilers and air-conditioning systems of buildings and the entire thermal installation when this is over 15 years old, and to give advice by way of recommendations to users on improving their energy output.
• Improvement in the energy efficiency of existing internal lighting plants: The minimum energy-efficiency requirements to be met by the lighting plants undergoing rehabilitation are those considered in document HE3, Energy Efficiency of Lighting Plant, of the Technical Building Code.
• Promotion of construction of new buildings and rehabilitation of existing buildings with high energy rating: A new Royal Decree will be approved which governs energy certification for existing buildings and complements Royal Decree 47/2007/CE for new buildings; in addition, the construction of buildings with a high energy rating may be incentivized, for example, by way of tax measures or an increase in the volume of development potential by the competent administrations.</td></tr>
<tr><td>Results achieved, lessons learnt and evaluation of the programme</td><td>
<table>
<tr><th></th><th>Final energy saving (ktoe) 2012</th><th>CO_2 emissions avoided (kt), 2008-2012</th><th>Savings on baseline (% ktep)</th></tr>
<tr><td>Renewal of thermal casing in existing buildings (building envelope)</td><td>404</td><td>5.232</td><td>18%</td></tr>
<tr><td>Thermal insulation</td><td>469</td><td>6.452</td><td>21%</td></tr>
<tr><td>Indoor lighting</td><td>931</td><td>17,937</td><td>42%</td></tr>
<tr><td>Construction/Refurbishment to low energy standards</td><td>438</td><td>5.322</td><td>17%</td></tr>
</table>
Lessons learnt: Metrics and methods of assessing the results of the measures have already been put in place (see Section 9.5 of the NEEAP)</td></tr>
<tr><td>Other relevant info</td><td>n.a.</td></tr>
<tr><td>References</td><td>Spain's Energy Efficiency Action Plan 2008-12 (English):
http://ec.europa.eu/energy/demand/legislation/doc/neeap/es_neeap_en.pdf

MURE-Odyssee Energy Efficiency Profile: Spain (2008):
http://www.odyssee-indicators.org/publications/country_profiles_PDF/esp.pdf

WBCSD report 'Energy Efficiency in Buildings – Business realities and opportunities':
http://www.pewclimate.org/docUploads/EEBSummaryReportFINAL.pdf</td></tr>
</table>

Title	Energy Declaration of Buildings Act - Incentives for Investment in Lower Energy Buildings
Country	Sweden
Sector	Residential and Commercial – new and existing
Objectives	Energy Efficiency
Type of financial instrument	Grant
Products/Activities covered	Renewable energy in public buildings, including solar cell systems / Energy efficient windows / Biomass boilers / Heat pumps (excluding air heat pumps) / District heating
Level of policy	National
Responsible organisation	Ministry of Sustainable Development Swedish Energy Agency National Board of Housing and Planning
Start/End year	2006 - ongoing
Budget	Unknown
Project overview, and targeted barriers	The Swedish Energy Declaration of Buildings Act was proposed to harmonise domestic legislation with the EPBD and came into force in 1 October 2006. This Act is supported by some financial tools, to encourage environmental improvements. The Act is also known as 'The Act on Tax Reduction for Certain Environmentally Enhancing Installations in Single-Family Houses' (in force Jan 2004) Under the Energy Declaration of Buildings Act, buildings are subject to inspections, and certain information about a building's energy use and indoor environment will be certified in an energy declaration when buildings are constructed, sold or rented out (since January 2009). The building owner will be able to reduce the costs of energy use through the measures proposed in the energy declaration.
Programme operation	The Act provides: • Special investment support for energy-saving measures and conversion to renewable energy in public premises. This also applies to installation of solar cell systems. • Support for purchase of energy-efficient windows and biomass boilers, set at 30% of the cost exceeding SEK 10.000; support is capped at SEK 10.000 for windows and SEK 15.000 for boilers. • Support when converting from electric heating to a heat pump (except air heat pumps) or district heating. This support is from 2006 to 2010. • Public authorities can receive support to increase efficiency in their buildings. Up to SEK 10 million per building.
Results achieved, lessons learnt and evaluation of the programme	No info available
Other relevant info	n.a.
References	Fact sheet on Energy Declaration of Buildings Act (2005): http://www.regeringen.se/content/1/c6/06/47/19/ae4b40c3.pdf

Title	Carbon Emissions Reduction Target (CERT)
Country	UK
Sector	Existing Residential
Objectives	Climate Change Mitigation Energy Efficiency CERT aims to deliver overall lifetime carbon dioxide savings of 185 $MtCO_2$,[12] and equivalent to the emissions from 700,000 homes each year and will stimulate about GBP 2.8 billion of investment by energy suppliers in carbon reduction measures.
Type of financial instrument	Subsidies (typically)
Products/Activities covered	Insulation, lighting, appliances, fuel switching biomass community heating, CHP
Level of policy	Great Britain
Responsible organisation	Department of Energy of Climate Change
Start/End year	2008-2011
Budget	£2.8bn for 2008-2011[13]
Project overview, and targeted barriers	CERT is the main driver of energy efficiency in existing residential buildings in Great Britain. The scheme maintains a focus on vulnerable consumers (low-income and elderly group), towards whom suppliers must direct at least 40% of carbon savings. CERT is the successor to two previous Energy Efficiency Commitment schemes (EEC). CERT is significantly more ambitious than these schemes.
Programme operation	The scheme obligates all domestic energy suppliers with a customer base in excess of 50,000 customers to make savings in the amount of CO_2 emitted by householders. Suppliers achieve their targets by promoting, typically with subsidy, a range of energy efficiency and low carbon measures to households including cavity wall and loft insulation. CERT allows suppliers to meet up to 5 per cent of their obligation through a 'flexibility mechanism', which aims to target hard-to-treat homes i.e. those off-grid or solid walled homes, in the Priority Group. The scheme works in conjunction with the Act on CO_2 helpline, which directs customers towards supplier's offers under CERT.

12 This is a new target set in 2009; the original CERT target was 154 $MtCO_2$

13 At the time of writing, DECC have just finished consulting on a proposal to extend the CERT scheme to 2012, as announced in DECC's Low Carbon Transition Plan. Such an extension would set a higher target of 293 million tonnes of lifetime CO_2 savings (an additional 108 $MtCO_2$ over the existing target); for the provision of an insulation minimum and for the removal of compact fluorescent lights (CFLs) as eligible measures, so as to drive insulation delivery at scale and ensure the UK Government meets targets to insulate 6 million homes by December 2011. It also proposes a new Super Priority Group obligation to ensure that the most vulnerable householders who are least able to afford energy saving measures are offered assistance. The consultation was until March 2010 and the impact assessment is available at www.decc.gov.uk/en/content/cms/consultations/open/cert/cert.aspx

Results achieved, lessons learnt and evaluation of the programme	In February 2010, 73% of CERT's target had been met (136 $MtCO_2$[14]). 44% of these savings went to Priority Groups. 62% of savings are from insulation, and 29% are from lighting; microgeneration, fuel switching and appliances make up the remainder. A total of 2.2 million professional insulation measures have been undertaken since April 2008 under CERT, in addition to the 38.8 million m^2 of DIY loft insulation which has been distributed through retail outlets. Lessons learnt: By targeting vulnerable groups, the scheme aims to alleviate fuel poverty as well as increase energy efficiency in homes There continues to be a steady distribution, albeit at a low level, of microgeneration and fuel switching measures. The scheme has also faced uncertainty over the success of its approach to lighting. Until January 2010, suppliers were permitted to do direct mail-outs of CFLs to households. There is anecdotal evidence to suggest that large numbers of CFLs were received by many households, which have been either stockpiled or discarded, rather than being installed; further the poorest quality CFLs were often the ones being distributed which led to consumers failing to use them. As part of the CERT consultation on the extension of the scheme to 2012, it is being proposed that subsidies of CFLs are removed from the scheme altogether.
Other relevant info	n.a.
References	CERT webpage: http://www.decc.gov.uk/en/content/cms/what_we_do/consumers/ saving_energy/cert/cert.aspx Ofgem CERT update webpage: http://www.ofgem.gov.uk/Sustainability/Environment/EnergyEff/CU/Pages/CU.aspx

14 This figure includes carryover from the EEC2 scheme

Title	Landlord's Energy Saving Allowance (LESA)
Country	UK
Sector	Existing residential
Objectives	Energy Efficiency
Type of financial instrument	Tax rebate
Products/Activities covered	• Cavity wall and loft insulation, since April 2004 • Solid wall insulation, since April 2005 • Draught proofing and hot water system insulation, since April 2006 • Floor insulation, since April 2007
Level of policy	National
Responsible organisation	HM Revenue and Customs
Start/End year	April 2004 – April 2015 (has been available to corporate landlords since April 2008)
Budget	Expected loss in revenue to HMT: £10m p.a. Expected overall administrative burden to corporate landlords: less than £100k p.a.
Project overview, and targeted barriers	Private rented properties typically have lower efficiency levels than the rest of the housing sector, and emit up 500kg CO_2 more per year The Landlord's Energy Saving Allowance (LESA) was introduced to encourage landlords to improve the energy efficiency of let residential properties. It is an allowance for the cost of acquiring and installing certain energy-saving items. Expenditure on these items cannot normally be deducted when calculating taxable profits and is not eligible for capital allowances. The scheme targets landlords, who may otherwise choose to not make improvement to their properties. The benefits presented to landlords include: • Tenants will have warmer, more comfortable homes that are cheaper to heat. For landlords, empty periods, complaints and repairs should decrease as a result. • There will be reduced risk of damp, condensation and mould growth in properties. Energy Performance Certificate rating will improve
Programme operation	Landlords who pay income tax may claim a deduction, the LESA, against profits for expenditure to install the products listed above. The maximum amount which may be claimed is limited to £1,500 per dwelling house, per year. Landlords claim the allowance when filling in their tax return.
Results achieved, lessons learnt and evaluation of the programme	The 2007 RIA estimated that the allowance was likely to result in a carbon dioxide saving of 0.15-0.67 MtC in 2010/11 – this is dependent on the take-up by corporate landlords.
Other relevant info	n.a.
References	DirectGov information page: http://www.direct.gov.uk/en/HomeAndCommunity/BuyingAndSellingYourHome/LettingYourHome/DG_175186 Regulatory Impact Assessment: http://www.hmrc.gov.uk/ria/8-landlords-energy-saving-allow.pdf

Title	Reduced Sales Tax for Energy Savings Materials
Country	UK
Sector	Residential Charity
Objectives	Energy Efficiency Climate Change mitigation
Type of financial instrument	Tax break
Products/Activities covered	• All insulation, draught stripping, hot water and central heating controls; • Installations of solar panels, wind and water turbines; • Ground-source and air-source heat pumps and micro-CHP • Wood/straw/similar vegetal matter-fuelled boilers
Level of policy	National
Responsible organisation	Her Majesty's Treasury (HMT)
Start/End year	2000 – not known
Budget	In the 2000 budget, when this policy was announced, it was estimated that it would cost the Government approximately £35 million in 2000/01. When air source heat pumps and Micro CHP were added to the eligible products list in 2005, it was estimated that the cost to the Exchequer would be around £2m in the first year, and around £7.4m for the two years thereafter. When wood fuelled boilers were added to the eligible products list in 2006, it was estimated that the cost to the Exchequer would be £0.6M in 2006-07, rising to £1.7m in 2010-11.
Project overview, and targeted barriers	By virtue of a policy announced in 2000, a reduced rate of Value Added Tax (VAT) of 5% - the lowest VAT rate allowed under EU agreements - is charged on certain energy saving materials, provided that they are professionally installed in a residential or charitable property (such as non-business or village hall).
Programme operation	The reduced rate covers: • all insulation, draught stripping, hot water and central heating controls; • installations of solar panels, wind and water turbines; • ground-source and air-source heat pumps and micro-CHP; and • wood/straw/similar vegetal matter-fuelled boilers. Additionally, grant-funded contractor installations of central heating systems and heating appliances; and grant-funded installations of factory-installed hot water tanks, domestic combined heat and power units, and heating systems that use renewable energy also benefit from the reduced rate when installed in the sole or main residence of a person over 60 or in receipt of certain benefits.
Results achieved, lessons learnt and evaluation of the programme	The addition of air source heat pumps and Micro CHP to the eligible products list in 2005 was estimated to save 135,000 tonnes of carbon by 2009/10. Under the scheme, the potential lifetime carbon savings for wood fuelled boilers are estimated at 341tC from uptake in 2006-07 rising to 858tC in 2010-11.
Other relevant info	n.a.
References	HMRC factsheet http://www.hmrc.gov.uk/VAT/sectors/consumers/energy-saving.htm 2000 Budget press release http://www.hm-treasury.gov.uk/bud_bud00_pressenergy.htm Regulatory Impact Assessments: http://www.hmrc.gov.uk/ria/vat-wood-fuelled.pdf (2006) RIA on the addition of air source heat pumps and Micro CHP (2005) – no weblink, but available online

Title	Stamp Duty Land Tax Relief for Zero Carbon Homes
Country	UK
Sector	New residential
Objectives	Energy efficiency Climate Change Mitigation
Type of financial instrument	Tax reduction
Products/Activities covered	Zero Carbon Homes: "A zero-carbon home is one that does not consume fossil fuels for heat and power. It is highly insulated and uses renewable energy to power its needs over a year through microgeneration. Heat and power technologies include ground source heat pumps, photovoltaic cells, solar water heaters and wind turbines. It will draw from the grid when the microgeneration is insufficient but could sell excess generation back to the grid."
Level of policy	National
Responsible organisation	Her Majesty's Treasury (HMT)
Start/End year	2007-2012
Budget	Expected to be negligible 2007-2010, rising to £15m in 2011-2012.
Project overview, and targeted barriers	In 2008 the Labour Government set out an ambition for all new homes to be zero carbon by 2016. This is a very stringent target compared to the rest of the EU. 25% of UK carbon emissions derive from consumption of energy in the home and by 2050 approximately one third of the housing stock will have been built since 2006. So new homes have a vital role to play in helping to meet the United Kingdom's target of 60% reduction in carbon emissions by 2050. The objective of introducing a stamp duty land tax relief is to help kick start the market for zero-carbon homes, encourage microgeneration technologies, and raise public awareness of the benefits of living in zero-carbon homes. It will also help to incentivise major changes in house building and will complement the ambition announced by the Department for Communities and Local Government (DCLG) in December 2006 that all new homes be built to a zero-carbon standard by 2016. It is, in short, a signal that the Government would like to see more of these types of houses built in the future, and is a fiscal incentive to get the market to move in this direction. The relief is designed to incentivise demand for zero-carbon homes among homebuyers, recognising that in order to raise energy efficiency standards significantly beyond where they are now the industry will have to modernise production methods and innovate through employment of new materials and technologies. The relief will also provide developers with a powerful marketing tool – they will be able to advertise these homes as free of stamp duty land tax which many potential buyers would find very attractive. The relief reduces potential cost barriers for developers given that zero carbon homes cost more than conventional homes.
Programme operation	The stamp duty land tax relief will only be available for a newly built zero-carbon home at the first point of sale. The relief will provide exemption from tax liability when house costs less than £500,000, and will provide a £15,000 reduction in tax liability to all homes worth more than £500,000. . The risk of not setting an upper limit would be that the relief would exceed the additional construction costs associated with building a home to a zero-carbon standard. Allowing the relief to apply to second and subsequent sales would result in no new environmental benefits to either homebuyers or to society, and would, therefore, not provide good use of public money.

Results achieved, lessons learnt and evaluation of the programme	According the partial Regulatory Impact Assessment (RIA) published by DCLG alongside their consultation on "Building A Greener Future: Towards Zero Carbon Development" (December 2006), it is estimated that having all new development built according to a zero-carbon standard is expected to save between 6.5 MtC (million tonnes of carbon) and 7 MtC per annum in England and Wales by 2050 compared to the do nothing option. Lessons learnt: Relatively low administration costs/inconvenience: • A small administrative impact on developers from obtaining a certificate verifying that a home is built to a zero-carbon standard, and on solicitors who usually complete and submit the stamp duty land tax return to HMRC on behalf of home buyers. • A small administrative impact on public sector bodies responsible for administering the certification process, and, on HMRC who is responsible for administering and collecting stamp duty land tax. • This scheme has been deemed by some to be unambitious, as new build accounts for only 0.8% of housing stock, there are currently few zero carbon homes in the UK and the scheme is time limited. (e.g see http://www.timesonline.co.uk/tol/news/politics/article662868.ece) • In 2008 it was announced that only between 6-15 homes in the UK had qualified for the tax relief, and by the end of 2009 only 24 homes had qualified in total (conflicting reports on the exact number have been found). Evaluation: no info available
Other relevant info	There are a number of negative press reports on the scheme e.g. http://ecoswitch.com/eco-build/eco-homes-deemed-failure/ http://www.guardian.co.uk/money/2008/feb/10/taxcredits.greenbusiness http://www.carbonoffsetsdaily.com/news-channels/top-stories/uk-just-15-zero-carbon-homes-qualify-for-15m-scheme-2761.htm
References	Regulatory Impact Assessment http://www.hmrc.gov.uk/ria/9-zero-carbon-homes.pdf Legislative text http://www.hmrc.gov.uk/si/2007-3437.pdf

Title	Warm Front Scheme
Country	UK
Sector	Existing residential
Objectives	Energy efficiency Fuel poverty
Type of financial instrument	Grants
Products/Activities covered	Insulation and/or heating measures, assessed by a trained technical surveyor/assessor. Products could include loft insulation, draught-proofing, cavity-wall insulation, hot water tank insulation, gas/electric/oil central heating (install a combination boiler, up to five radiators including all valves and pipe work; may also repair your existing heating system), convert solid-fuel open fire into a glass fronted fire.
Level of policy	England only. Separate schemes run in Wales/Scotland/NI.
Responsible organisation	It is a Government-funded initiative (DECC) and the scheme is managed by Eaga
Start/End year	June 2000 - present
Budget	€874m from 2008-11
Project overview, and targeted barriers	Warm Front is the Government's largest scheme designed to combat fuel poverty in the private owner occupied and rented sector in England. It is a key component of the Government's UK Fuel Poverty Strategy which was published in November 2001. The Warm Front Scheme provides a package of insulation and heating improvements up to the value of £3,500 (or £6,000 where oil, low carbon or renewable technologies are recommended).
Programme operation	Householder applications, followed by a technical surveyor/assessor visit. Improvement works are carried out by registered installers (householders pick from a list of local registered installers sent through by the scheme). Only privately owned homes or homes rented from private landlords qualify. Householders qualify if they are (a) over 60 in receipt of certain state benefits (b) have a child under 16 and are in receipt of certain state benefits or (c) in receipt of certain state benefits. If the property has previously received Warm Front improvements, the grant now available will be the balance of £3,500 (or £6,000 where oil, low carbon or renewable technologies are recommended) less the value of all works previously completed Since 2005, householders aged over 60 who would not qualify under the existing criteria may be eligible to a £300 rebate, to put towards repairing or replacing an inoperable system or installing a new central heating system where there is none existing at the property.

Results achieved, lessons learnt and evaluation of the programme	Since the start of the scheme 1,950,437 households have been assisted through the Warm Front scheme. In the year 2008-09, 233,594 households received assistance. (From 2009 annual report). Breakdown of measures:

	2008/09 breakdown of measures	Scheme to date
Assisted households	233,594	1,950,437
Cavity wall insulation	27,100	460,572
Draught-proofing	25,991	544,121
Electric central heating	8,197	59,945
Foam insulation dual immersion hot water tank	595	7,644
Gas wall heaters	303	24,499
New gas central heating	14,698	162,995
Hot water tank jackets	6,145	153,605
Loft insulation	57,104	660,836
Boiler replacements	80,458	298,911
Heating repairs	9,252	82,038
Oil central heating	571	1,988

Headline impacts:
- An average household SAP (Standard Assessment Procedure) improvement from 38 to 62 points
- A reduction in carbon dioxide emissions in the average household from 6.6 tonnes per year to 5.2 tonnes per year, equalling total annual savings of 1.4 tonnes of CO_2 per year for those homes
- improved, each and every year for the next 20 years
- On average in 2008/9, each household receiving Warm Front assistance has the potential to save £362.23 in energy running costs every year – some households have shown illustrative savings of £700+ p.a.

Based on the number of homes receiving Warm Front measures and the average reduction in running costs per property, the potential saving in energy consumption is almost 13 Giga Joules (GJ) per household, each and every year for the next 20 years

Lessons learnt: From National Audit Office report 2009:
- Customer satisfaction with the Warm Front Scheme is high, with 86 per cent of households satisfied with the work done.
- There appears to be poor scheme access for some; and the scheme doesn't always effectively identify and aid those in 'fuel poverty':
- The Warm Front Scheme in England has helped to improve the energy efficiency of over 635,000 households between June 2005 and March 2008, but as there were 1.9 million vulnerable households in 2006, this rate of progress will still leave many in fuel poverty in 2010.
- The English House Condition Survey 2006 indicates that 57 per cent of vulnerable households in fuel poverty do not claim the relevant benefits to qualify for the scheme.
- 75 percent of households who qualified under the scheme were not necessarily in fuel poverty. The scheme paid £34million in grants to households whose properties were already comparatively energy efficient.

	• A large number of households who qualified under the scheme may only have fallen into fuel poverty or be 'near' fuel poverty as a result of reported fuel price increases in 2007 and 2008, though prices appear to be easing. • Over 236,000 (37 percent) of grant recipients between June 2005 and March 2008 received only non-means tested benefits. Eaga were not required to check whether these recipients were in fuel poverty. • Many households withdrew from the scheme or had not progressed their applications. Eaga, who administer the scheme, plan to undertake an exercise in early 2009 to identify what proportion of these households were unable to pay.
Other relevant info	NAO makes a number of recommendations including: A. The use of proxy measures, such as benefit entitlement, to determine who is eligible for scheme grants has resulted in inefficient targeting of resources. To **better target grants** to the fuel poor, the Department should: • amend the scheme eligibility rules to exclude those households where the property is already energy efficient; • focus efforts to help those in hard to treat homes through the use of alternative technologies; and • establish whether the £300 Heating Rebate Scheme has helped vulnerable households to avoid falling into fuel poverty. B. **Greater coordination** of the Warm Front Scheme with other Government heating initiatives. Warm Front already co-ordinates with some schemes, e.g. CERT. C. Adoption of measures to help households that cannot afford to pay the difference between the cost of work and the grant available and who are unable to find the funds from elsewhere D. The Department of Energy and Climate Change need to ensure they have **specialist staff** with relevant contract management and procurement expertise.
References	www.warmfront.co.uk 2008-09 Annual report: http://www.warmfront.co.uk/files/wf%20annual%20report%202008%202009.pdf National Audit Office 2009 report: http://www.nao.org.uk/publications/0809/the_warm_front_scheme.aspx

EuroACE

The European Alliance of Companies
for Energy Efficiency in Buildings

MAKING MONEY WORK FOR BUILDINGS

Annex II

AUSTRIA

Facts & stats:

One of the comparatively smaller of the EU countries, Austria has an area of 83,850km^2 and a population of 8 million. The country is divided into nine states *(Bundesl̀nder)*, which have extensive responsibilities in the energy field. Austria benefits from a healthy economic environment and in particular, the opening-up of the central European and Balkan economies since 1990, together with the enlargement of the EU in 2004 and 2007, has contributed significantly to its economic development.

Energy background:

The primary domestic energy resources in Austria are large-scale hydro for electricity generation, biomass for electricity and heat production, as well as domestic resources of oil and gas. Oil is the most important single energy carrier in Austria's total primary energy supply (TPES), contributing 42% in 2005. Austria is producing 40% of its energy needs domestically. Austria is one of only five countries in the EU that already fulfils the 2020 target of covering at least 20% of their primary energy supply from renewables.

Energy Efficiency Policy

Overview:

Austria's energy policy is simultaneously conducted at two levels, the federal and the joint federal/state levels. Energy efficiency is seen as a major element in increasing security of supply, and the Austrian government is supporting efficiency improvements through research and funding programmes in all sectors of the economy. A range of measures is available to the Austrian government in the area of energy efficiency policy, including regulatory measures (such as minimum efficiency standards or energy taxation rules); research, technological development and demonstration, and promotion of market penetration; dissemination of information to energy consumers; and subsidies for the implementation of energy-saving measures.

EE Policy and Buildings:

Requirements concerning the energy performance of buildings are handled through the building codes and complementary regulations of the states, to which the Austrian Constitution allocated responsibility. Under its programme, the federal government is committed to promote low energy and passive house standards in co-operation with the states. Building related targets from the programme are: 50% of new buildings should meet the *Klima:Aktiv* standard; increase the energetic refurbishment rate to achieve upgrading of all 1950-1980 residential buildings by 2020; from 2015, only those residential buildings meeting *Klima:Aktiv* passive house standards should receive government financial support for their construction.

Financial tools and Buildings:

The residential building subsidy is a well established policy instrument, particularly in the private housing sector. Financial support for residential building currently totals about €2.5 billion per annum. About 70% of this aid is financed by the national government. As well as subsidies and low-interest loans for the construction of residential buildings, additional aid is also being granted for: measures for improving thermal, flue-gas and humidity insulation, as well as soundproofing, on the shell of buildings (e.g. thermal insulation of windows, roofs, outer walls and ceilings, as well as flue renovation); measures relating to heating and hot-water systems (connection to district heating, central heating, solar installation, heat pump, biomass heating, etc.). As a proportion of the total national budget, aid allocated to residential housing represents between 2.8 % and 2.9 %. In March 2001, the Federal Ministry of Economic Affairs and Labour launched an initiative on third-party financing (TPF) of energy efficiency measures in public buildings..

Key institutions in energy policy development and implementation:

The Federal Ministry of Economics and Labour, the Federal Ministry of Agriculture, Forestry, Environment and Water Management, the Federal Ministry of Transport, Innovation and Technology, the Federal Ministry of Finance, the Austrian Energy Agency and the nine regional governments.

BELGIUM

Facts & stats:

Belgium is a constitutional monarchy that has become a federalist State composed of three communities (the Flemish Community, the Wallonia-Brussels Community and the German-speaking Community) and three regions (the Flemish region, the Walloon region and the Brussels-Capital region). With a population of over ten million people and a land area of less than 31 000 km^2, Belgium is the third most densely populated country in the OECD.

Energy background:

Belgium imports nearly all of its energy supply as the country has very limited indigenous energy resources. Over 97% of its energy supply comes from four main sources – coal, oil, gas and nuclear. Over 20% of total primary energy supply (TPES) comes from nuclear power. In 2007, total final consumption of energy was 40 Mtoe, and electricity consumption was 91.5TWh.

Energy Efficiency Policy

Overview:

Policies and measures focused on improving energy efficiency are derived primarily from implementation of EU directives into regional legislation, as well as other regional legislation. One exception is transportation energy efficiency policy, which is heavily influenced by federal policy in addition to regional policies.

EE Policy and Buildings:

Historically, Belgium's buildings have had relatively poor energy performance.. Two key sources of this inefficiency are poor compliance with existing building standards and a heavy reliance on electricity for residential heating. Efforts to improve the efficiency of buildings focus primarily on implementing the EU Directive on the Energy Performance of Buildings, which will both strengthen building code standards and increase monitoring and enforcement. The three regional governments have plans in place to ensure compliance with EPBD.

Financial tools and Buildings:

The Federal Public Service (FPS) of Belgium offers tax reductions for individuals undertaking energy efficiency and certain renewable energy investments in their homes. Tax reduction maximum amounts have progressively increased, and for the 2008 fiscal year (for expenses incurred in 2007) the tax reduction amounts to 40% of the expense for all measures, up to a maximum amount of 2600€ per household, whether for new construction or renovation. For the years 2009 and 2010, wall and floor insulation investments have been added to the list of measures benefiting from a tax reduction. Since 2009, an interest rate reduction is also provided for energy efficiency investments in homes, for loan contracts till end-2011. The interest fees related to loan contracts for these investments are also included in the tax reduction measure. Various financial incentives have also been introduced by the three regions for improving the energy efficiency of existing buildings.

Key institutions in energy policy development and implementation:

The regional governments of Flanders, Wallonia and Brussels-Capital, Directorate-General for Energy (part of the Federal Public Service), Cellule CONCERE/ENOVER (a formal body for discussions between the central government and the regions on all energy matters transferred to the regions) and the federal Gas and Electricity Regulatory Commission (CREG).

CZECH REPUBLIC

Facts & stats:

The Czech Republic is a landlocked country situated in Eastern Europe, sharing borders with Germany, Poland, Slovakia and Austria. It has a land mass of 78,900km^2 and a population of 10.2 million people. It joined the EU in 2004. The small, open, export-driven Czech economy grew by over 6% annually from 2005-2007 and by 2.3% in 2008. the real economy contracted by 4.1% in 2009, mainly due to a significant drop in external demand as the Czech Republic's main export markets fell into recession. GDP in 2009 was $25,100 and unemployment reached 9%.

Energy background:

Coal is both one of the country's most significant natural resources, and the most important energy supply for the Czech Republic accounting in 2003 for 47% of total primary energy supply. The Czech Republic has two nuclear power plants which in 2003 provided 15% of TPES and 31% of total electricity generation. The country relies on imports for approximately 95% of its oil supplies. Domestic reserves of natural gas are also depleting.

Energy Efficiency Policy

Overview:

The 2004 State Energy Policy's primary aims are increasing energy efficiency and ensuring security of energy supply. Building on this, the country's National Energy Efficiency Action Plan (NEEAP) set a target to save 19,800 GWh by 2016, in line with wider EU targets.

EE Policy and Buildings:

In the Czech Republic, the Ministry of Industry and Trade is responsible for implementation of EPBD requirements. Certification is mandatory for new buildings and renovated existing buildings (with a floor space exceeding 1000m^2). In addition, a number of additional financial policies are in place including the Green Saving Programme, the National Environment Fund (via OPE) and the PANEL programme.

Financial tools and Buildings:

The Green Saving Programme, the National Environment Fund (via OPE) and the PANEL programme all provide financial support to improve energy efficiency in existing and new buildings. They combine a number of instruments including subsidies, grants, preferential loans and third party financing.

Key institutions in energy policy development and implementation:

Ministry of Industry and Trade, Czech Energy Agency, State Energy Inspection Board, Ministry of Environment, Energy Regulatory Office.

ESTONIA

Facts & stats:

A 2004 EU entrant, Estonia is located at the heart of the Baltic Sea Region. The country has an area of 45,228 km^2 and is home to 1.2 million people. Its GDP in 2009 stood at $18,700 per capita, which was a fall from previous levels due to the global financial crisis. Unemployment in 2009 was estimated at 14%. The country is set to adopt the Euro in 2011.

Energy background:

During the period 2001-2005, the final consumption of fuel and energy in Estonia increased by 8.7%; this rise was largely driven by transport energy consumption. Estonia has one of the world's highest energy consumption levels. The market that consumes the most fuel is the household sector, accounting for 41.7% of the total fuel for final consumption. It produces some oil domestically from oil shale, but imports 100% of its gas consumption. It has some surplus power generation capacity and is a net electricity exporter.

Energy Efficiency Policy

Overview:

Estonia's Energy Efficiency Plan (2000) was used to develop the "Energy Efficiency Plan Implementation Plan 2001-2005" which was approved by in 2001. Further to this, Estonia's National Energy Efficiency Action Plan (NEEAP) 2007-2013 sets forth policy measures and implementation strategies to meet EU energy consumption reduction targets through increasing the availability of relevant information, ensuring the training and access to skills and experts, and increasing the efficiency in the use of fuels and energy.

EE Policy and Buildings:

The strategic national instrument to improve the situation in the Estonian residential building stock is "The Estonian National Housing Development Plan for 2008-2013", which covers increasing energy efficiency as one of its main aims, and is intended to be complementary to the aims and measures stated in the NEEAP. It is the aim of Estonia to have 10% of apartment buildings fall into the highest energy efficiency category by 2013. Renovation works related to the modification and replacement of electricity and heating systems and gas installations are to be supported. The target groups to be supported within the framework of these activities include apartment associations, building associations and owners of restituted apartment buildings. The amount of state support shall be established annually in the implementation plan. The Government has also instituted State guarantees to renovation loans, and made grants for technical inspections available. Since 2005 energy audits of buildings have also been part of the technical inspection for which grants are issued. In the period 2003-06, the 10 per cent reconstruction assistance has been granted for improving the condition of 1 411 residential buildings; technical inspection was conducted in 2 495 apartment buildings; 99 loan guarantees have been granted for the reconstruction and renovation of apartment buildings in the total amount of 45.7 million EEK. The volume of guarantees was 32.5 million EEK..

Financial tools and Buildings:

The Credit and Export Guarantee Fund (KredEx) was founded in 2001 by the Ministry of Economic Affairs and Communications with the aim to improve the financing of enterprises in Estonia, decrease export-related credit risks, enable people to build or renovate their homes and promote energy efficiency in Estonia. The EU Structural Funds are combined with the funds from CEB to form a fund for housing refurbishment and offer a long time low interest loan for apartment buildings to achieve energy efficiency. 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.

Key institutions in energy policy development and implementation:

The Ministry of Environment (containing the Energy Department sits an Energy Efficiency and Renewable Unit) and the Ministry of Economic Affairs and Communications.

FRANCE

Facts & stats:

France has a population of 64m, and an area of over 643,00 km^2. France has weathered the global economic crisis better than most other big EU economies because of more resilient consumer and government spending, and lower exposure to the downturn in global demand. Nonetheless, France's real GDP contracted 2.1% in 2009, while the unemployment rate increased from 7.4% in 2008 to nearly 10%. France's tax burden is one of the highest in Europe. GDP per capita stood at approximately $32,800 in 2009.

Energy background:

Total electricity consumption was 480 TWh in 2007. Energy intensity has been steadily improving; final energy intensity decreased on average by 1.06% annually between 1990-2007.

Energy Efficiency Policy

Overview:

Energy efficiency currently forms a key part of France's climate change mitigation, energy security and environmental policies. The government aims to reduce energy intensity by 2% per year by 2015, and 2.5% per year by 2030. In 2008 the government published a National Energy Action Plan (NEEAP) which describes policy mechanisms in place to achieve the four major aims of French energy policy: managing energy demand, diversifying the energy mix, developing research and innovation in the energy sector and providing means of transport and storage suitable for requirements.

EE Policy and Buildings:

The national government's 2007 Grenelle de l'environnement includes elements for a very active policy for efficient buildings at a national level. This includes a programme to encourage new technologies, with the aim that the majority of new buildings are low, or positive energy by 2020, with an interim target of at least of one third by 2013. These objectives are now implemented in the Plan Bâtiment, whose core incentive, the Eco-Prêt à Taux Zéro (Zero-interest loan), will help spur investments to improve energy efficiency in existing private homes. Further, Frances' building codes are supported by mandatory building energy labelling and whole building energy performance requirements. Within the construction sector, the new renovated house ("Maison Rénovée") certification, which makes use of the Energy Efficiency Diagnosis (DPE) building efficiency grading scheme.

Financial tools and Buildings:

France has had innovative financing products for the residential sector since 2007, when in partnership with banks low-interest loans for residential energy conservation projects were offered, financed through a special tax-free savings account. Funding for the zero-interest loan for energy efficiency improvements was doubled as part of France's economic stimulus plan. The 2009 Finance Law also provides a zero-interest loan for the purchase of a new or existing home which is significantly increased if the home is a exceeds building standards. Further, tax credits for interest paid on home acquisition or construction loans are awarded when construction meets latest thermal efficiency standards, and are increasingly preferential when current standards are exceeded.

Key institutions in energy policy development and implementation: :

French Environment and Energy Management Agency (ADEME)[1], Ministry of Ecology, Energy, Sustainable Development and Planning, French Agency for Improvement of Existing Dwellings (ANAH), Ministry of Economy, Finance and Employment.

GERMANY

Facts & stats:

Germany is the EU's largest country in terms of population, 82 million, and economy – GDP is the third highest in the world. After China, Germany is the world's leading exporter. 2008 saw a fall in GDP of 5% - the biggest fall since World War two. The German government has undertaken a number of measures to stabilize the country's financial sector. In February 2010, unemployment stood at 8.7%.

Energy background:

Germany's total primary energy supply (TPES) was 345 million tonnes of oil equivalent (Mtoe) in 2005. Oil makes up the largest share of TPES at more than one-third, followed by coal (24%), natural gas (23%) and nuclear (12%). Combined, renewables make up about 5% of TPES, with nearly three-quarters coming from combustible renewables and waste. The consumption of end-use energy has an amount of 9.127 PJ (2008). With a primary energy consumption of less than 7 gigajoules per €1 000 of Gross Domestic Product (GDP), Germany is among the most productive industrialised countries in terms of energy consumption.

Energy Efficiency Policy

Overview:

*I*n 2007, the German government published the first National Energy Efficiency Action Plan (NEEAP) "Integrated Energy and Climate Programme" (IECP). The documents presented a series of planned policies in order to achieve energy saving targets set by the EU. The German Cabinet has adopted most of the measures contained in the programmes. The measures planned in the industrial and tertiary sector include: smart metering of electricity consumption, the introduction of modern energy management systems, and a financial support programme for energy efficiency. In addition, the energy-efficient modernisation of social infrastructure and a programme for the energy-efficient modernisation of federal buildings is only directed at the tertiary sector. In the household sector, most of the measures are directed at new or existing buildings: An amendment of the Energy Saving Ordinance shall tighten the energy standards for new buildings by 30 percent from 2009. Plans have also been put in place for the transport sector.

EE Policy and Buildings:

Germany's building stock is already relatively efficient, primarily because it is comparatively new. Germany also has strong building codes, which are revised every five years – current codes exceed the EU directive's requirements for buildings larger than 1 000 m^2, and will continue to significantly exceed them in future years. Nonetheless, an intensified effort to save energy in this sector is a central element of Germany's *National Climate Protection Programme*. Including the planned tax relief for home modernisation and maintenance and the provision of EUR 120 million a year for energy rehabilitation of government buildings, a total of EUR 1.4 billion a year is now available for energy rehabilitation in buildings. To supplement the consulting services mostly provided by industry, architects and engineers, the German government plans to step up public relations activities on energy saving construction via the German Energy Agency.

Financial tools and Buildings:

The KfW CO_2 Reduction Programme (KfW-Programm zur CO_2-Minderung) supports those responsible for investment measures in buildings by granting investors long-term. Low-interest loans with fixed interest rates and a repayment-free starting-up time of up to years for rehabilitation or refurbishment measures aimed at reducing energy consumption. Since 2009 the energy efficient construction programme, has provided financing for construction, production and first acquisition of *KfW Efficiency Houses*; the required energy standard must be confirmed by an energy expert.

Key institutions in energy policy development and implementation:

Federal Ministry of Economics and Technology, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Federal Ministry for Transport, Building and Urban Affairs, the Federal Ministry of Finance, the German Energy Agency and the KfW Bank Group.

HUNGARY

Facts & stats:

An EU member since 2004, Hungary has a population of approximately 10 million people and an area of 93,000 km^2. Nearly 70% of the country's population live in urban areas. Its geographical location makes Hungary an important transit country. Hungary has made the transition from a centrally planned to a market economy, with a per capita income nearly two-thirds that of the EU-25 average. The private sector accounts for more than 80% of GDP. The global economic downturn resulted in an economic contraction of 6.7% in 2009. In 2009 unemployment reached nearly 11%. .

Energy background:

Electricity consumption in 2007 was 40 TWh. With declining indigenous fuel sources, Hungary imports 80% of its gas and oil requirements. 33% of the country's electricity is generated by Hungary's sole nuclear power plant.

Energy Efficiency Policy:

Overview:

Hungary has a long-term Efficiency and Renewable Energy Programme and Action Plan, which was approved by the government in 1999, and covers the period to 2010. No plan has been published relating to the transposition and implementation of the EU Energy Services Directive (2006/32/EC). The 1999 Energy Saving and Energy Efficiency Improvement Action Programme defines the following targets for energy efficiency by 2010: reduction of energy intensity by 3.5% per year, assuming an annual gross domestic product (GDP) growth of 5% and a growth rate of energy consumption of 1.5% per year; saving of 75 petajoule (PJ) per year (1.8 Mtoe per year) of primary energy sources; reduction of 50 kilotonnes (kt) per year of SO_2 and 5 million tonnes (Mt) per year of CO_2 emissions; increase of renewable energy production from the present 28 PJ per year to 50 PJ per year (1.2 Mtoe per year).

EE Policy and Buildings:

In accordance with the EPBD (2002/91/EC) the Hungarian government has transposed a Directive on the establishment of energy characteristics in buildings. The decree elaborated a national methodology for calculating the integrated energy efficiency of buildings; established minimum requirements for the energy efficiency of new buildings; established minimum requirements for large existing buildings (with a surface area of more than 1000m^2) regarding their energy performance in case they are subject to major renovation.

Financial tools and Buildings:

A number of financial schemes have been established to improve energy efficiency in buildings. The Energy-Saving Credit Fund (EHA), is a revolving credit fund applying special interest rates to, energy-efficiency increasing investments, and the utilisation of renewable energy resources since 1991. The fund totalled HUF 2.39 billion by the end of 2006. Undertakings and local governments are entitled to submit applications for the soft loans. The second scheme is the Energy-Efficiency Credit Construction co-financed by PHARE. In 2007 the fund exceeded EUR 7.5 million. The form of support is through credit construction which provides interest-free credits up to 25% of the investment costs, in addition to which a bank credit with favourable market interest rates, equal to the amount of the interest-free credit and amounting to a maximum of 65% of the investment costs, must also be drawn. "For a Successful Hungary" has a residential sector focused scheme, which provides soft loans and non-repayable aid for applicants applying with energy-saving investments and investments increasing the use of renewable energy sources. Further, the "Panel Plus" credit programme makes State aid of up to one-third of the investment amount (maximum amount of HUF 400,000) available to applicants increasing the energy efficiency of residential buildings.

Key institutions in energy policy development and implementation:

The Ministry of Economy and Transport , the Ministry of Environmental Protection and Water Management , and The Energy Centre.

ITALY

Facts & stats:

Italy is a southern European country, with an area of 301,338 km^2 and a population of 58m. Italy has a diversified industrial and service driven economy, which in 2009 faced an unemployment rate of 7.5%. GDP stands at $1.7 trillion (2009 US$). It is the 4th largest economy in Europe. However following the 2008 financial crisis, the country fell into its fourth recession in less than a decade. Public debt is around 115% of GDP, and its fiscal deficit - just 1.5% of GDP in 2007 - exceeded 5% in 2009 as the costs of servicing the country's debt rose.

Energy background:

Italy is the only member of the Group of Eight (G8) nations without nuclear power. The government has plans to recommence the country's nuclear power programme and to start building a new nuclear power plant by 2013. In 2007, electricity consumption was 339 TWh. Italy's energy intensity was at or below that of all other G8 countries from 1990 to 2007, but has remained relatively stable since then as other countries make faster improvements.

Energy Efficiency Policy:

Overview:.

Even if Italy rapidly prepares and implements a comprehensive strategy of domestic measures, complemented by an increased use of Kyoto flexible mechanisms, there remains a strong possibility that it will be unable to meet its 2012 obligations. In its 2007 National Energy Efficiency Action Plan, Italy's Ministry for Economic Development sets out energy efficiency targets, within the context of wider European Directives, and discusses a number of policy vehicles with which to reach these targets.. The most significant instrument adopted for energy efficiency promotion is the White Certificate system, which aims to incentivise energy saving in a cost effective manner and conforms to the liberalisation of the internal electricity and gas measure brought about by the Community Directives. Other policy vehicles established in the 2007 National Energy Efficiency Action Plan include information programmes, agreements with the appliance industry, energy certification of buildings and promotion of heating energy services provided by ESCOs in centralised installations.

EE Policy and Buildings:

There is significant potential to substantially strengthen the energy efficiency of Italy's building stock. Italy urgently needs to transpose the Energy Performance of Buildings Directive (EPBD), ensure this is fully implemented in all regions and substantially strengthen energy efficiency requirements for both new and existing buildings. Italy also needs to establish policies to support the construction of passive, zero or other ultra low energy consuming buildings..

Financial tools and Buildings:

Italy has been particularly proactive in providing financial support for energy efficiency. The 2008-2011 Economic and Financial Programming Document recently approved by the Italian Government provides for the pursuit and extension of fiscal measures to encourage energy efficiency of buildings and energy use equipment. The 2007 Finance Act was also introduced to help meet energy efficiency targets. This Act allows for the application for tax deductions or contributions to costs in the residential, industrial and tertiary sectors when specified energy efficiency measures are put in buildings (e.g. efficient white good/lighting/solar power installations). The act also uses financial incentives to encourage the innovation projects in energy efficiency and the use of cogeneration and renewable technologies. In additional regional governments (e.g. Sardinia, Marches, Vale d'Aosta) have put grant and preferential loan schemes in place to encourage energy efficiency in commercial buildings. There is concern that federal and regional fiscal incentives could be overlapping in the building sector, and some improved co-ordination may be required.

Key institutions in energy policy development and implementation:

The Ministry of Economic Development, The Ministry of the Environment and Territory and Sea, the National Network of Local Agencies (ReNAEL), the Institute for Environmental Protection and Research (ISPRA), The Electricity and Gas Authority (AEEG).

THE NETHERLANDS

Facts & stats:

Situated in north-west Europe, The Netherlands is the most densely populated country in the world, with an area of 41,5238 km^2 and a population of 16.3million. GDP per capita stands at $27,200 per head. The Netherlands is the world's third largest agricultural exporter. The country's economic situation was relatively stable, with 26 years of uninterrupted growth until the financial crisis in 2009. The Government responded with a stimulus programme which has resulted in a public deficit of 4.6% of GDP

Energy background:

The country's strategic location makes it an important transit and trade hub for natural gas, oil and electricity. The country also has significant natural gas production and a large oil-refining industry. Total electricity consumption in 2007 was 116 TWh, and total final consumption of energy was 60 Mtoe.

Energy Efficiency Policy:

Overview:

The government has recently laid out an ambitious energy and climate agenda under its Clean & Efficient programme and its Energy Report 2008 strategy. This agenda calls for a 30% reduction in greenhouse gas (GHG) emissions from 1990 levels, 20% renewables in the energy mix, annual energy efficiency improvements of 2% (double the current rate) and completing a big step in the transition towards a more sustainable energy system by 2020. These targets are closely linked to, but more ambitious than, the proposed 20-20-20 targets for the EU. To meet these targets the Government has proposed strong policies and measures, and increased the budget, particularly for energy research and development.

EE Policy and Buildings:

With respect to the domestic buildings, the main energy efficiency policies and measures in place are the Building Decree and the Energy Performance standard; Kompas; Energy label and certificate for houses; expansion of green investment arrangements (due 2009), the More with Less plan. In the Tertiary and Industrial sectors the main energy efficiency policies and measures in place are the Energy Performance Standard (EPC) for public utility buildings and Energy Certificate; Kompas and the Long-Term Agreements and Benchmarking measure. In addition, 2 cross-sector financial instruments are used across all sectors

Financial tools and Buildings:

In 2007, there were 2 main cross-sectoral financial instruments in place: the Energy Tax – a levy on consumption of energy, which targets the residential, industrial and agricultural sectors; and the Energy Investment Deduction (EID -see case study) – the tax break can be requested for acquisition or production costs of energy efficient equipment and sustainable energy, and operates in 5 areas of application (buildings, equipment and processes, CHP, transport and sustainable energy)

Key institutions in energy policy development and implementation: The Ministry of Economic Affairs, The Ministry of Housing, Spatial Planning and the Environment, The Ministry of Finance, The Ministry of Transport, Public Works and Water, the Dutch Tax Authorities and the NL Agency.

NORWAY

Facts & stats:

Norway covers an area of 385 155 km^2, and has the longest coastline in the world. The population of Norway is increasing, currently standing at 4.7 million. The population density is very low, at 12 inhabitants per square kilometre. Almost 17%, or 811 000 of Norway's inhabitants, live in the greater Oslo area, while up to 75% live in major towns and cities. GDP per capita is $59,000. The country is highly dependent on the petroleum sector, which accounts for nearly half of exports and over 30% of state revenue. Following relatively low growth in 2002-03, GDP growth picked up to 2.5-6.2% in 2004-07, partly due to higher oil prices. Growth fell to 2.5% in 2008, and the economy contracted by 1.1% in 2009 as a result of the slowing world economy and the drop in oil prices.

Energy background:

Norway is the world's third-largest gas exporter; its position as an oil exporter has slipped to seventh-largest as production has begun to decline. Most of the electricity production is based on hydropower, and this has historically made it possible to have low electricity prices and a large energy intensive industry as well as use electricity for heating purposes in private homes. Norway's electricity consumption in 2007 was 117.6 TWh.

Energy Efficiency Policy:

Overview:

In the residential sector, the main energy efficiency measures are grants for electricity savings in households, energy information helpline and the ***"Regnmakerne" scheme, to engage young people in energy saving. In the industrial sector, the***re are tax incentives in place to encourage industry to meet savings targets and investment support for energy saving investments is available. The move to a more environmental friendly energy production and use in Norway is, since 2002, managed by Enova SF (a state owned enterprise for promoting energy savings, new renewables and environmentally friendly natural gas solutions).

EE Policy and Buildings: In Norway's new building regulations are calculated to reduce the energy demand by 25 % in new buildings. The measure is valid for the whole country without differences between regions. In 2009 the "Grants to energy efficiency measures in public buildings in 2009" programme started. The aim of the programme is to contribute to employment in the construction sector at the same time as increasing energy efficiency in public buildings. In addition to the household grant scheme for electricity savings, grants are available in the Tertiary Sector for investments which generate a minimum of 10% of energy savings in buildings.

Financial tools and Buildings:

ENOVA SF administrates the Energy Fund – a cross sector measure. The income of the energy fund comes from a levy of 1 øre/kWh (0.008 €/kWh) to the distribution tariffs that is mandatory. In order to strengthen the priority area of the Fund, the government established a new fund called "statutory fund of energy conservation and renewable energy". In the state budget of 2007, the government granted 10 000 MNOK (approx. 1200 M€) and in the state budget of 2009 it is suggested to grant another 10 000 MNOK (approx. 1200 M€) in 2009. The energy fund is used to project related measures as purchasing services, payment of grants and other financing of measures in the field of consumption, environmentally friendly heat, wind and natural gas. The fund supports a variety of projects in industry, the tertiary sector, the household sector as well as production of new, renewable energy.

Key institutions in energy policy development and implementation: The Ministry of Petroleum and Energy and subordinate agencies (including Enova S.F), the Ministry of Trade and Industry, The Ministry of Labour and Social Affairs, The Ministry of the Environment , the Pollution Control Authority. The Ministries of Transport and Communications, Fisheries and Coastal Affairs, and Finance also play roles in wider environmental policies.

POLAND

Facts & stats:

Poland has an area of approximately 312, 685 km^2, and a population of 38.4 million people. In 2009 GDP per capita ($17,800) is still much below the EU average, but is similar to that of the three Baltic states. Since 2004, EU membership and access to EU structural funds have provided a major boost to the economy. Following the global downturn, unemployment stood at 11% in 2009

Energy background:

The average annual energy consumption in Poland 2001-05 was 655,850 GWh. Oil represents less than one-quarter of Poland's total primary energy supply (TPES), which remains dominated by indigenous sources of coal. Total oil demand is expected to grow moderately in the coming decade. Capacity expansion and investment in the country's supply infrastructure are already well underway, with an emphasis on strengthening the existing potential for supply diversification via the Baltic Sea.

Energy Efficiency Policy:

Overview:

In its 2007 National Energy Efficiency Action Plan (NEEAP) the country set itself a savings target of 53,450 GWh for 2016 (with an interim savings target of 11,880 GWh for 2010). The savings target matches the target given in the 2006/32/EC Directive of 9% of total consumption (once ETS sector has been exempted from totals). The NEEAP sets out the main energy efficiency policies across the residential, services, industrial and transport sectors as well as detailing a number of horizontal measures.

EE Policy and Buildings:

The main measures set out in the 2007 NEEAP pertaining to building energy efficiency are the introduction of energy evaluation system for buildings (certification system of residential buildings; part of the implementation of EPBD, 2009-2016), the Thermo-modernisation and Renovation Fund (funding modernisation in the residential sector, 1998-2016), Infrastructure and Environmental Operations Programme and Regional Operations Programmes, and Grants from the Global Environment Facility (financial support for energy efficiency modernisation of buildings, district heating systems, and heating networks; 2005-2011)

Financial tools and Buildings:

The main financial instrument in place in the residential sector is the Thermo-Modernisation Fund. Grants and subsidies are also available for energy efficient investment in the Industrial and Tertiary sectors. Complementing the financial tools used in the building sector, Poland also has two key environmental funds: the National Fund for Environmental Protection and Water Management (NFOSiGW) and the EcoFund.

Key institutions in energy policy development and implementation:

The Ministry of Economy, The Ministry of Environment and The Ministry of Regional Development.

ROMANIA

Facts & stats:

Romania is in south-eastern Europe. It has an area of approximately 238,400 km^2 and a population of just over 22 million people. It is the 9th largest country in the EU, and has the 7th largest population. Romania began its transition from Communism in 1989. Presently GDP per capita stands at $11,500 (2009)., As a result of the global recession GDP fell nearly 7% in 2009, and unemployment doubled to 7.6%.

Energy background:

The country's electricity consumption in 2007 was 53 TWh. Romania is a net importer of energy. The highest share of primary energy consumption is held by natural gas, but this share is declining. Non-carbon energy (nuclear, hydro, wind, solar, etc) is visibly increasing. In 2007 industry consumed 40% of final energy in the country, followed by households at 31%.

Energy Efficiency Policy:

Overview:

Romania's National Energy Efficiency Action Plan 2007-2010 (NEEAP) set a long term target to achieve energy savings of 2,800,000 toe by 2016 (13.5% of 2001-05 average consumption), which exceeds the minimum energy saving requirements of 9% set by Directive 2006/32/EC. In its 2007 NEEAP, the Romanian government categorised policy vehicles to achieve energy savings targets as follows: regulations, information & legislative measures, voluntary agreements and instruments for co-operation, services to encourage energy savings, financial instruments and mechanisms to encourage energy efficiency and other combinations of the above mentioned sub-categories.

EE Policy and Buildings:

In residential buildings, the 2007 NEEAP stated priorities were for programmes for the heat insulation of multi-storey residential buildings to. Furthermore, starting from 2007, an energy efficiency certificate was planned for all newly built buildings and, beginning in 2010, an energy efficiency certificate will be issued for single-family dwellings and for apartments in existing residential structures that are sold or rented. Once heat loss is reduced in buildings and energy efficiency is thus improved, a legislative initiative designed to encourage energy efficiency through the use of renewable fuels will be pursued. This will promote the generation of electricity and heat using locally available sources of renewable energy for end users.

Financial tools and Buildings:

Until 2007, financial and fiscal measures supporting energy efficiency projects were limited to the promotion of biofuels, the use of renewable resources for the production of electricity and audits of buildings. Over the period covered by the NEEAP (2007-10), these have been extended to cover the replacement of refrigerators, washing machines and air conditioners in domestic use, the co-financing of energy balance books for operators in the industrial sector, the financing of programmes to increase energy efficiency in the industrial sector, and the promotion of investment programmes for the use of renewable energy in the generation of electricity and heat, this being with a view to increasing energy efficiency. The European Bank for Reconstruction and Development recently signed an agreement with the European Commission for EUR 24 million of non-reimbursable funds destined for the creation of credit lines for energy efficiency projects in Romania and Bulgaria. The bank intends to use the majority of these funds in order to initiate energy efficiency projects in Romania, given the significant potential for energy savings in this country.

Key institutions in energy policy development and implementation:

The Romanian Agency for Energy Conservation (ARCE), The Ministry of Finance, The Ministry of Development, Public Works and Housing, The Ministry of the Environment and Sustainable Development, The Ministry of the Interior and Administrative Reform, the Ministry of Transport, The National Energy Observer (OEN) and the Romanian Fund for Energy Efficiency.

SLOVENIA

Facts & stats:

Slovenia is a Central European country, with an area of around 20,270 km^2. The country has a population of 2million people, and is currently experiencing negative population growth. With the highest per capita GDP in Central Europe, Slovenia has excellent infrastructure, a well-educated work force, and a strategic location between the Balkans and Western Europe. In 2009 the world recession caused the economy to contract - through falling exports and industrial production - more than 6% and unemployment to rise above 9%.

Energy background:

In a relatively short period, Slovenia has made substantial gains in restructuring its energy industries and eradicating the legacy of a centrally-planned economy. The country's electricity consumption was 14.4 TWh in 2007, and the country is a net importer of energy – mainly oil and gas. Slovenia produces nuclear energy, solid fuels and renewable energy, all of which are also used in electricity generation in almost equal shares. Slovenia's energy intensity is much higher than the EU-25's average.

Energy Efficiency Policy:

Overview:

The targets of Slovenian policy are to improve the energy efficiency for 10% by 2010 as for 2004 in industry, building, transport and service sectors, and for 15% in the public sector. Longer term, on the basis of its National Energy Efficiency Action Plan Slovenia is to achieve cumulative savings of at least 9% in relation to the starting point for final energy consumption in the 2008–2016 period (4,261 GWh).

In recent years, the Slovenian Government has undertaken a series of direct and indirect actions in the residential sector to improve energy efficiency. Energy efficiency measures in industry focused on improvement of efficient use of energy in industrial companies by stimulation of investments in energy efficiency and efficient electricity use. Recent energy efficiency measures in transport are more oriented to energy efficiency and include the promotion and competitiveness of public transport. In addition, there are a number of cross-cutting policies in place, as part of energy use management programmes for end customers (DSM). Instruments include obligations on energy companies to provide public services.

EE Policy and Buildings: The more effective recent energy efficiency measures in residential sector are mainly focused on the improvement of building performance: overall heat (thermal) insulation of building shells and more efficient heating systems. The indirect energy efficiency measures are the measures about the energy labelling of household appliances, energy efficiency requirements for domestic appliances. Energy efficiency measures in the industrial and tertiary sectors are focused on stimulating energy sanitation of old buildings and for building of new low energy and solar passive residential buildings.

Financial tools and Buildings:

Energy efficiency programmes are supported through the Ecological fund (Eco-fund), a public financial institution that promotes environmental investments in Slovenia. Its primary activity is providing soft loans for investments in energy efficiency measures and other ecological projects. Current energy efficiency measures in the residential sector are financial stimulation for energy efficiency of heating systems, energy sanitation of old buildings and sustainable building of new buildings. The financial stimulation measures for buildings include thermal insulation of shells and lofts, replacement of windows, replacement of low efficiency heating systems, building new low energy and passive solar buildings. Measures include also financial stimulation (subsidy) for investment in utilization of renewable energy sources in households like photovoltaic. Within the industrial and Tertiary sectors financial stimulation exists for energy efficiency renovation and sustainable building of new buildings, and energy sanitation of old buildings. Eligible measures include thermal insulation of buildings and replacement of un-energy efficient windows.

Key institutions in energy policy development and implementation:

The Ministry of the Environment and Spatial Planning, The Agency for Efficient Use of Energy (AURE), the Department of Efficient Energy Use and Use of Renewable Energy Sources and The Energy Agency of the Republic of Slovenia

SPAIN

Facts & stats:

Spain is a south western European country, with an area of approximately 499,000 km^2. The population of Spain is 40.5m. Spain's mixed capitalist economy is the 12th largest in the world, and its per capita income roughly matches that of Germany and France. However, after almost 15 years of above average GDP growth, the Spanish economy began to slow in late 2007 and entered into a recession in the second quarter of 2008. Spain's unemployment rate rose from a low of about 8% in 2007 to more than 19% in December 2009, making it the highest level in the EU.

Energy background:

Driven by strong economic growth, Spain's CO_2 emissions are substantially higher than its target under the Kyoto Protocol.. Spain aims to progressively reduce the share of nuclear power in the energy mix, while ensuring security of supply and reducing GHG emissions. All domestic coal is used for power generation, where it contributed some 8% to total power supply in 2007. Electricity consumption in 2007 was 282.5 TWh.

Energy Efficiency Policy:

Overview:

In its National Energy Efficiency Plan 2004-2012, the Spanish Government set out measures to increase efficiency in the following sectors: agriculture, buildings, domestic and office equipment, industry, public services, transport and energy transformation.

EE Policy and Buildings:

In recent years, there has been a series of improvements in the specific legislation as regards the efficiency of the building sector, including the approval of the Technical Building Code (TBC), the revision of the Regulation on Building Heating Installations (RITE), and the approval of a Building Energy Certification procedure for new buildings. An Energy saving and Efficiency Action Plan for the buildings of the State's General Administration (SGA) has been agreed. Further, Spain's Energy Efficiency Action Plan 2008-2012, sets out 4 main measures relating to building efficiency: rehabilitation of the thermal envelope of existing buildings; improvement in the energy efficiency of existing thermal installations; improvement in the energy efficiency of existing internal lighting plants; and the promotion of construction of new buildings and rehabilitation of existing buildings with high energy rating.

Financial tools and Buildings:

With respect to energy efficiency measures for buildings, lines of economic support are created annually for each of the 4 measures and managed by each autonomous community; public administrations are encouraged to play exemplary roles in pursuing the objectives of each measure. A budget of €804m has been made available for the period 2008-2012 to undertake these measures.

Key institutions in energy policy development and implementation:

The Institute for Energy Diversification and Saving (IDEA), The Ministry of Industry, Trade and Tourism, The Ministry of Housing, The Ministry of the Economy and Ministry of Agriculture, Fisheries and Food. Provincial Governments and Spain's Autonomous Communities (CCAAs) play a role in implementing policies.

SWEDEN

Facts & stats:

Sweden's surface area is about 450,000 km^2, most of which is covered by forests. With nine million inhabitants, it is sparsely populated. Most Swedes live in the south of the country, including roughly one-third in the metropolitan areas of Stockholm, Göteborg and Malmö. It has combined an open market economy with a generous welfare state. Per-capita GDP ($34,100 in 2006) is some 10% higher than the OECD average, and the overall tax rate, 50% of GDP, is the highest within the OECD.

Energy background:

Sweden's total primary energy supply (TPES) was 51.3 million tonnes of oil equivalent (Mtoe) in 2006. From 1990 to 2006, TPES increased by 7.9%, while the economy grew by 42%. The country has abundant renewable energy sources and a strong nuclear programme. In 2006, Sweden's total final consumption of energy (TFC) was 35.0 Mtoe, up 7.7% from 1990. Industry was the largest user, accounting for 42% of the total. Transport's share was 24% and the other sectors (residential, services, and the primary sector) used 33% of the total. Sweden emits little CO_2 both per capita and per GDP. Energy intensity, however, is one of the highest in the IEA. This is explained by the large energy requirements of the heavy industry, mostly pulp and paper and iron and steel.

Energy Efficiency Policy:

Overview:

In Sweden's 2008 National Energy Efficiency Action Plan (NEEAP), it set out a 30 potential policy instruments which it estimated would, in total, save 46TWh in 2016 – a 10% efficiency improvement compared to 2001-2005. One of the most significant policy instruments in the housing and services sector, as described in the NEEAP, concerns more efficient electricity use through conversion of heating systems from electro-heating to district heating, heat pumps and individual biofuel burning and also more efficient use of electricity consumed by households, businesses and operations. In the industrial sector, the NEEAP describes an extension of ongoing programmes for improving energy efficiency in energy-intensive industry is planned together with broader scope so that forms of energy other than electricity are covered by energy efficiency improvement actions under the programmes.

EE Policy and Buildings:

Other important policy instruments in the housing and services sector entail requirements governing energy conservation in connection with conversion and more rigorous application of the system of energy certificates for buildings. In addition, a number of future potential policies for the sector were identified in the NEEAP including energy classifications for buildings, programmes for more efficient electricity use and increased local authority energy advice.

Financial tools and Buildings:

Sweden has a long tradition of using taxes to steer energy policy. Energy taxation is aimed at improving the efficiency of energy use, promoting renewable energy production and use, and encouraging companies to reduce their environmental impact. Examples include the Energy Buildings Declaration Act, which provides financial support for investment in energy efficiency measures and conversion to renewable energy in public premises, and 'The Act on Tax Reduction for Certain Environmentally Enhancing Installations in Single-Family Houses'.

Key institutions in energy policy development and implementation:

The Ministry of Enterprise, Energy and Communications and its Division for Energy, The Ministry of the Environment, The Swedish Energy Agency , The Ministry of Enterprise, Energy and Communications, the Energy Markets, Svenska Kraftnät, Swedish Competition Authority and the Swedish Environmental Protection Agency.

THE UNITED KINGDOM

Facts & stats:

The population of the UK stands at 61 million inhabitants, making the UK the fourth most densely populated country in the EU. The UK is a leading European and global trading partner and financial centre. Over the last two decades, the government has greatly reduced public ownership and contained the growth of social welfare programmes. . Services, especially banking and insurance, account for by far the largest share of economic activity while industry's share of GDP continues to decline. Public finances, weak before the 2008 economic slowdown, deteriorated markedly during 2009, as did employment.

Energy background:

The UK has substantial energy reserves, and production of oil, gas and coal accounts for around 10% of GDP, being among the highest share in industrialised nations. In 2004, the UK total primary energy supply was 234 Mtoe.. Natural gas and oil are the UK's dominant primary fuels (accounting for over 70%), followed by coal, nuclear, biomass, hydropower, wind and solar, and imported electricity. The UK Government has committed that 15% of power will come from renewable sources by 2020. In 2004, UK total final consumption of energy was 163.7 Mtoe.

Energy Efficiency Policy:

Overview:

In the UK's 2007 Energy Efficiency Action Plan, the Government set out the following key levers to deliver lower energy consumption in the household, business, public and transport sectors via increased technical efficiency and reduction in service demand. Building on this, The Low Carbon Transition Plan (LCTP 2009) set out further plans to deliver the UK's target of delivering emission cuts of 18% on 2008 levels by 2020 (equating to an over one third reduction on 1990 levels). This plan allocated all major UK departments their own carbon budgets, and obliged them to develop emission cut plans.

EE Policy and Buildings:

The main policies affecting domestic buildings in the UK are the Carbon Emissions Reduction Target (CERT), Community energy Saving Programme (Programme to deliver energy saving treatments to over 90,000 low income households), rolling out of smart meters, the pledge that by 2016 all new homes built will be zero-carbon, and measures to increase the efficiency of newly built and renovated domestic and non-domestic properties through increased ambition levels in Building Regulations. In the "Workplaces and Jobs" sector, the main policies affecting buildings are the Energy Performance in Buildings Directive (Includes Energy Performance Certificates, Display Energy Certificates for public buildings, inspections for air conditioning systems, and advice and guidance for boiler users and Smart Metering. Emissions savings associated with the main policies listed above are given in the LCTP 2009 (Annex A)

Financial tools and Buildings:

In the residential and commercial/public sectors, a number of financial and fiscal instruments have been employed by the UK Government, including: CERT, the Climate Change Levy, reduced VAT)for energy savings materials and Stamp Duty Relief for Zero Carbon Homes. Although energy efficiency and climate change mitigation is a consequence of many of these policies, many have other aims at their core, such as modernisation and improving social equality.

Key institutions in energy policy development and implementation:

Department for Energy & Climate Change (DECC), the Department of Environment, Food and Rural Affairs (Defra), The Department for Business Innovation and Skills (BIS), the Department for Communities and Local Government (DCLG), Department for Transport (DfT) and Her Majesty's Treasury (HMT), The Office of Gas and Electricity Markets (Ofgem), the Energy Saving Trust and the Carbon Trust.

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ABOUT EuroACE

EuroACE represents Europe's leading companies involved with the manufacture, distribution and installation of energy saving goods and services for buildings. EuroACE members have a total turnover of 140 billion Euros and employ 328,000 people in Europe. The mission of EuroACE is to work together with the institutions to help Europe move towards a more sustainable pattern of energy use in buildings, thereby contributing to Europe's commitments on climate change, energy security and economic growth.

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