G E O D E

Strategies in favour of the reduction of CO2 emissions in the housing sector

Géographie et Développement

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G E O D E

INSTEAD CEPS

Report for
the EU expert meeting
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9-10 June 2005

Présidence luxembourgeoise
du Conseil de l'Union européenne

Strategies in favour of the reduction of CO_2 emissions in the housing sector

RESULTS OF SURVEY

Commissioned by:

Ministère des Classes moyennes, du Tourisme et du Logement
Département du Logement
Luxembourg

To :

CEPS / Instead
Centre d'Etudes de Populations, de Pauvreté et de Politiques Socio-Economiques
Luxembourg

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INTRODUCTION

Objectives

List of European countries included in this report

OBJECTIVES

Background

In the context of the Luxembourg Presidency of the Council of the European Union and the Kyoto Protocol coming into force, the Ministry of Housing in Luxembourg is organizing an expert meeting on the strategies of the European Union member States for the reduction of carbon dioxide (CO_2) emissions in the housing sector.

The national allocation plans of the different member States will become legally binding in the year 2008. The responsible ministries and administrations are now looking for strategies and actions in order to achieve the objectives set. If some member States are already some steps ahead and have gained experience from their current programmes, others are only beginning to elaborate their action plans and are caught in a crossfire of implementation problems.

For a closer comparative analysis of the actions taken, a comprehensive questionnaire has been sent to the 25 current member States of the European Union and the 4 accession States (see list below).

Aims of the report

This report is based on the response from each country's housing ministry to the questionnaire. Its main purpose is to describe the measures taken by the current and future member States aiming at reducing their consumption of energy and CO_2 emissions in the housing sector. The present document sets the main results from the above-mentionned questionnaire and is used as a statistical basis for the expert meeting.

For each topic, the information collected has been synthesized in tables. The main results are presented in maps and charts that show the distribution of the phenomenon studied and highlight the similarities and the disparities between the different countries. When relevant, factual information has been compiled in order to give an insight into the actions taken.

Notes on technical limitations of this report

When interpreting the results, the following limitations and shortcomings should be considered:

- Reliability of information linked to the quality of the response given by each country
  - For some questions, the quality of the response is difficult to evaluate because it is not, or not easily, verifiable (language problems, accessibility of the data)

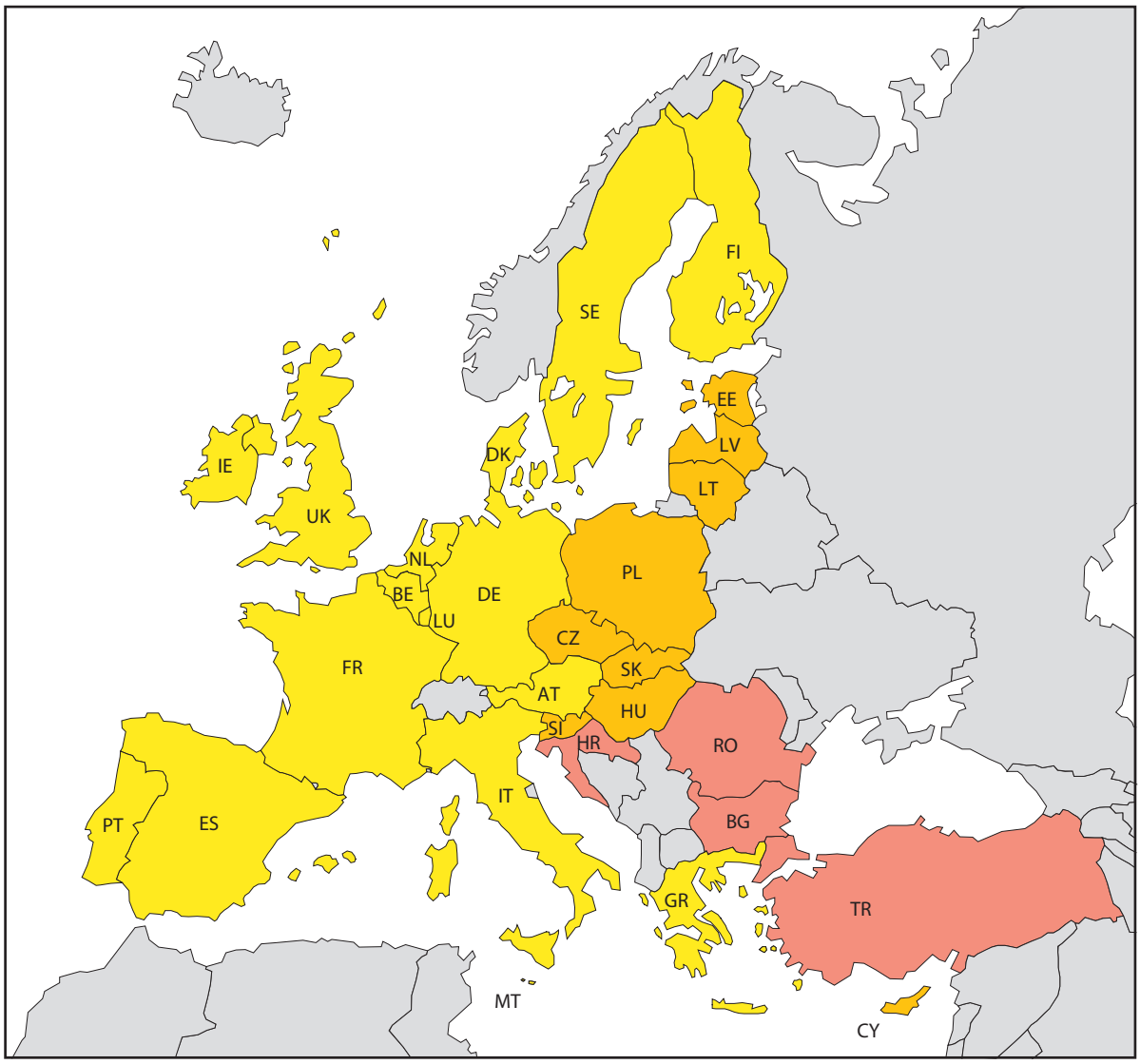
- Not available and incomplete information (for details, see annex 2)
  - Among the 29 countries included in this survey, 3 did not respond to the questionnaire (Portugal, Hungary, Romania)
  - No country provided answers to all questions, with strong disparities between the less and the more complete questionnaire
  - For some questions, the information collected is scarce and often incomplete

- Incompatibility of information between countries
  - Different specifications, definitions and dates of reference for some data
  - Different or unrecognized units of value e.g. characteristic energy value

LIST OF EUROPEAN COUNTRIES INCLUDED IN THIS REPORT

Country name	Acronym	Response to questionnaire
Old EU member states (EU15)		
Austria	AT	Available
Belgium	BE	Available
Denmark	DK	Available
Finland	FI	Available
France	FR	Available
Germany	DE	Available
Greece	GR	Available
Ireland	IE	Available
Italy	IT	Available
Luxembourg	LU	Available
Netherlands	NL	Available
Portugal	PT	Not received so far
Spain	ES	Available
Sweden	SE	Available
United Kingdom	UK	Available
New EU member states (EU10)		
Cyprus	CY	Available
Czech Republic	CZ	Available
Estonia	EE	Available
Hungary	HU	Not received so far
Latvia	LV	Available
Lithuania	LT	Available
Malta	MT	Available
Poland	PL	Available
Slovakia	SK	Available
Slovenia	SI	Available
EU accession states (AS4)		
Bulgaria	BG	Available
Croatia	HR	Available
Romania	RO	Not received so far
Turkey	TR	Available

Figure 1 **European countries included in this report**



Old EU member states (EU15)

New EU member states (EU10)

EU accession states (AS4)

0 1000 km

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I. ORIENTATION OF PUBLIC POLICIES

I.1. Objectives in relation to energy consumption

I.2. National programmes of action

I.1. Objectives in relation to energy consumption and CO_2 emissions

Table 1 – Energy consumption and decrease expected

		Quantity (in Mtoe)	% in relation to nat. consumption	Year of reference	Evolution (in Mtoe)	Timeframe	Data specific to housing sector
Old EU member states							
Austria	AT	7,32	30,3	2001	-	-	1
Belgium	BE	Data not exploitable					1
Denmark	DK	-	22,1	2003	-	-	-
Finland	FI	-	-	-	-1	2010	0
France	FR	34,8	22	2001	-4,1	2010	1
Germany	DE	-	-	-	-	-	-
Greece	GR	7	37	2000	-	-	0
Ireland	IE	-	30	1990	-	-	1
Italy	IT	-	-	-	-1,5 / -2,9	2008-2012	0
Luxembourg	LU	-	-	-	-	-	-
Netherlands	NL	9,4	-	2000	13,7	2020	1
Portugal*	PT						
Spain	ES	11,9	9,8	2000	-1	-	1
Sweden	SE	-	-	-	-	-	-
United Kingdom	UK	47,7	30	2003	-3,4	2010	1
New EU member states							
Cyprus	CY	0,2	11	2003	-	-	-
Czech Republic	CZ	-	23,6	2000	-20	2005	0
Estonia	EE	-	-	-	-	-	-
Hungary*	HU						
Latvia	LV	1,46	40	1995	-0,8	2016	1
Lithuania	LT	-	-	-	-	-	-
Malta	MT	-	-	-	-	-	-
Poland	PL	26,1	29	-	-	-	1
Slovakia	SK	-	-	2002	-	-	1
Slovenia	SI	1	22	2000	-	-	0
EU accession states							
Bulgaria	BG	1,85	-	2005	-0,17	2020	1
Croatia	HR	-	-	-	-	-	-
Romania*	RO						
Turkey	TR	17,3	27	2003	-3,7	2013	1

* Questionnaire not received

Note: 1 = Yes, O = No

Table 2 – CO_2 emissions and decrease expected

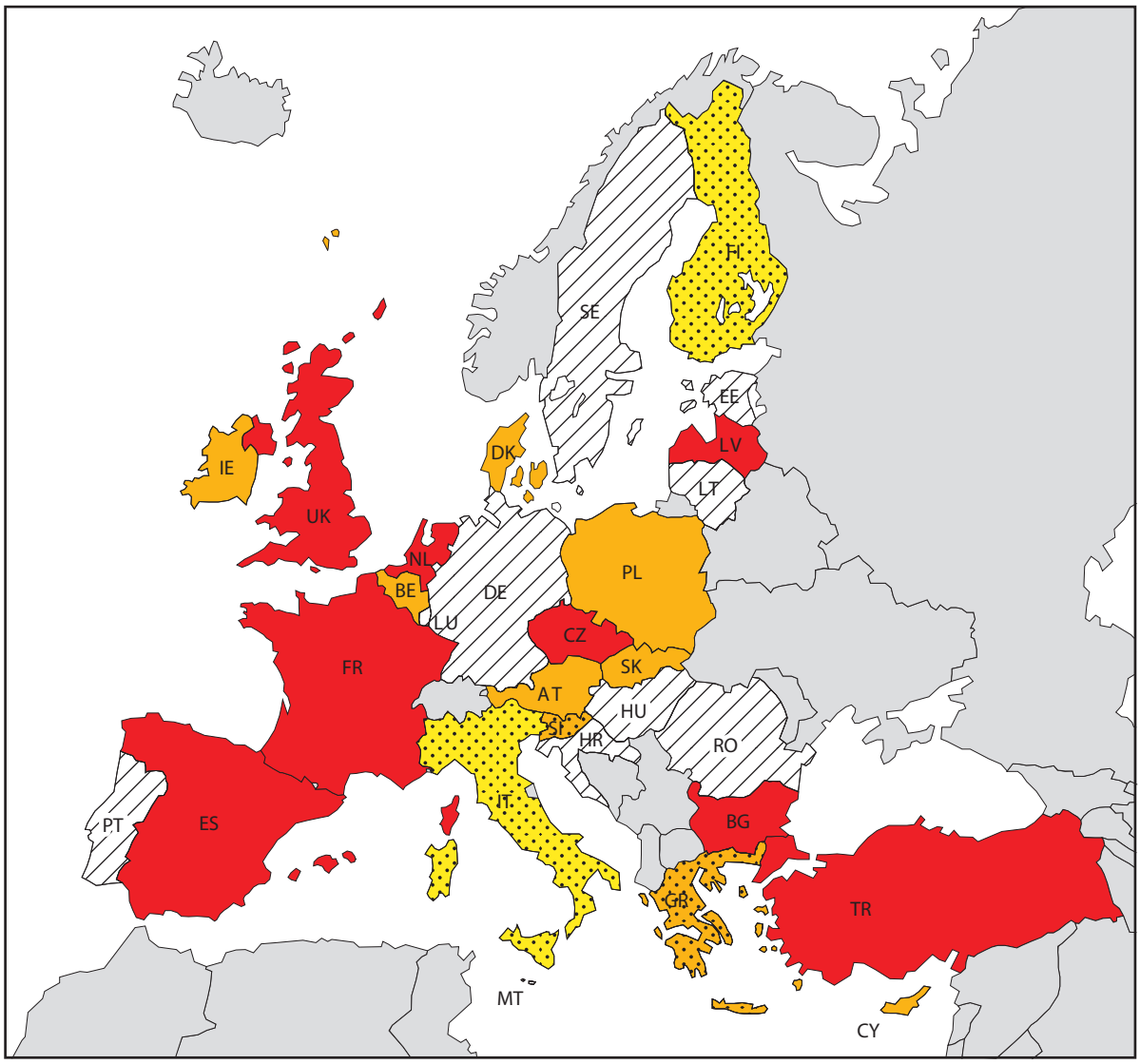
		Quantity (in Mtoe)	% in relation to national Emissions	Year of reference	Quantity targeted (in Mtoe)	% in relation to national Emissions	Evolution of quantity (in Mtoe)	Timeframe	Data specific to housing sector
Old EU member states									
Austria	AT	14,17	18	2000	10,5	15	-	-	0
Belgium	BE	-	-	-	-	-	-	-	-
Denmark	DK	12,4	24	2003	-	-	-	-	-
Finland	FI	17,5	23	1990	-	-	-1,1	2010	0
France	FR	88,2	15,7	2001	75,3	12,3	-12,9	2010	1
Germany	DE	122	12,3	2000-2002	120	12,5	-2	2008-2012	1
Greece	GR	-	6,12	1990	-	6,81	-	2020	1
Ireland	IE	-	34	1990	-	-	-	-	-
Italy	IT	72,1	15,9	2000	62 / 59,3	13,6 / 17,3	10,1 / 12,8	2008-2012	0
Luxembourg	LU	-	-	-	-	-	-	-	-
Netherlands	NL	31	18	2002	29	16	-2	2010	0
Portugal*	PT								
Spain	ES	-	-	-	-	-	-	-	-
Sweden	SE	-	-	-	-	-	-	-	-
United Kingdom	UK	136,7	24,5	-	126,9	-	-9,8	2010	1
New EU member states									
Cyprus	CY	-	-	-	-	-	-	-	-
Czech Republic	CZ	-	-	-	-	-	-2,8	2005	-
Estonia	EE	-	-	-	-	-	-	-	-
Hungary*	HU								
Latvia	LV	-	-	-	-	-	-	-	-
Lithuania	LT	-	-	-	-	-	-	-	-
Malta	MT	-	-	-	-	-	-	-	-
Poland	PL	-	-	-	-	-	-	-	-
Slovakia	SK	4,59	9,8	2003	-	-	-	-	1
Slovenia	SI	1,81	8,9	2002	-	-	-	2010	1
EU accession states									
Bulgaria	BG	-	-	-	-	-	-	-	-
Croatia	HR	-	-	-	-	-	-	-	-
Romania*	RO								
Turkey	TR	-	-	-	-	-	-	-	-

* Questionnaire not received

Note: 1 = Yes, O = No

Figure 2 **Orientation of public policies**

Objectives in relation to energy consumption reduction



Energy consumption and reduction objective (specific to the housing sector)

Energy consumption without reduction objective (specific to the housing sector)

Energy consumption without reduction objective (not specific to the housing sector)

Reduction objective without ernergy consumption (not specific to the housing sector)

Not responding

N

0 1000 km

Number of countries per category

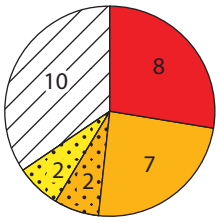


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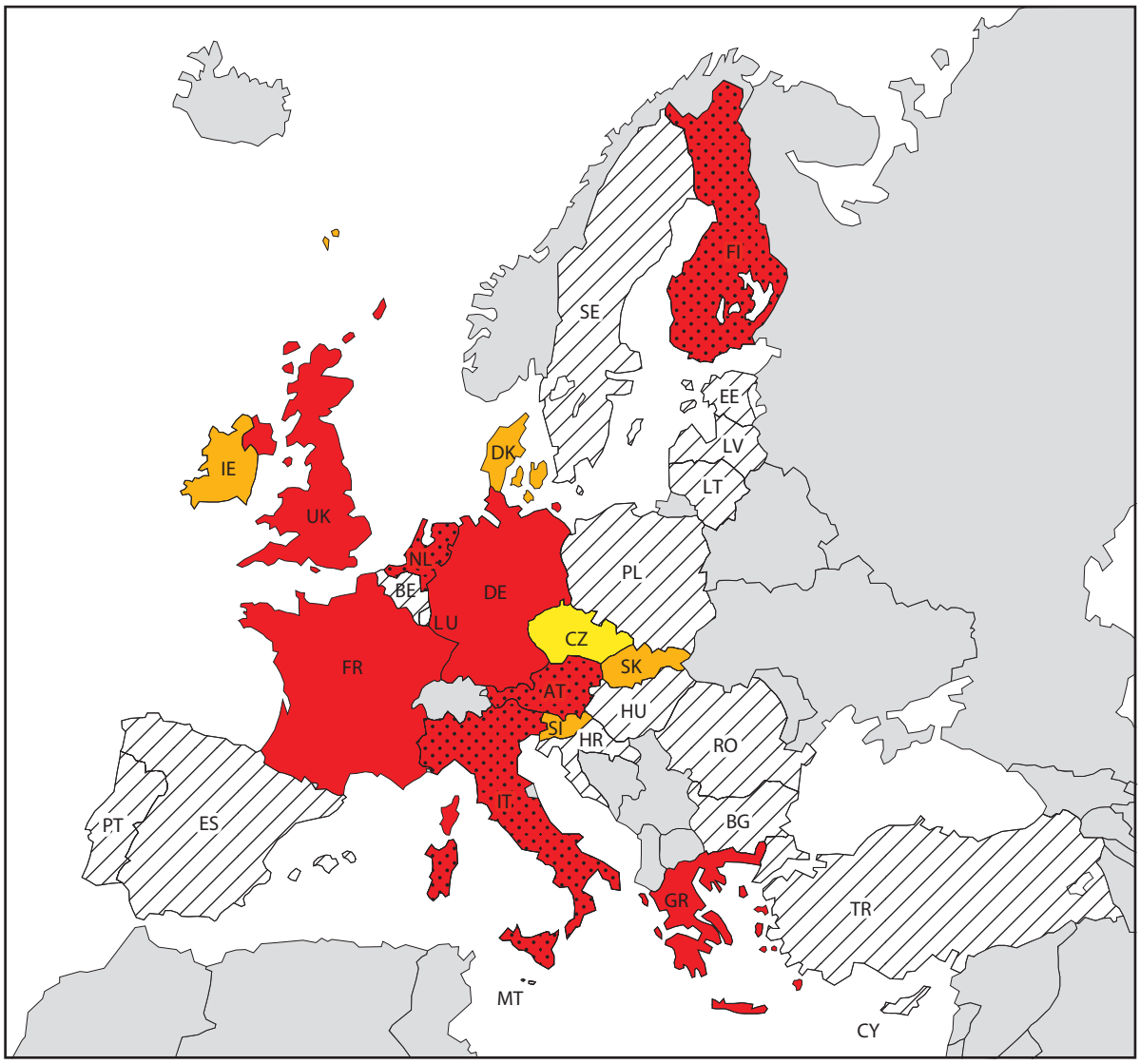
Figure 3 **Orientation of public policies**

Objectives in relation to CO_2 emissions reduction



CO_2 emissions and reduction objective (specific to the housing sector)

CO_2 emissions and reduction objective (not specific to the housing sector)

CO_2 emissions without reduction objective (specific to the housing sector)

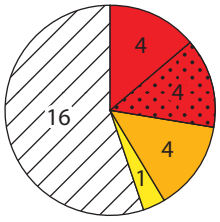
Reduction objective without CO_2 emissions (specific to the housing sector)

Not responding

N

0 1000 km

Number of countries per category



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I.2. National programmes of action

Table 3 – Existence of national programme of action in the housing sector

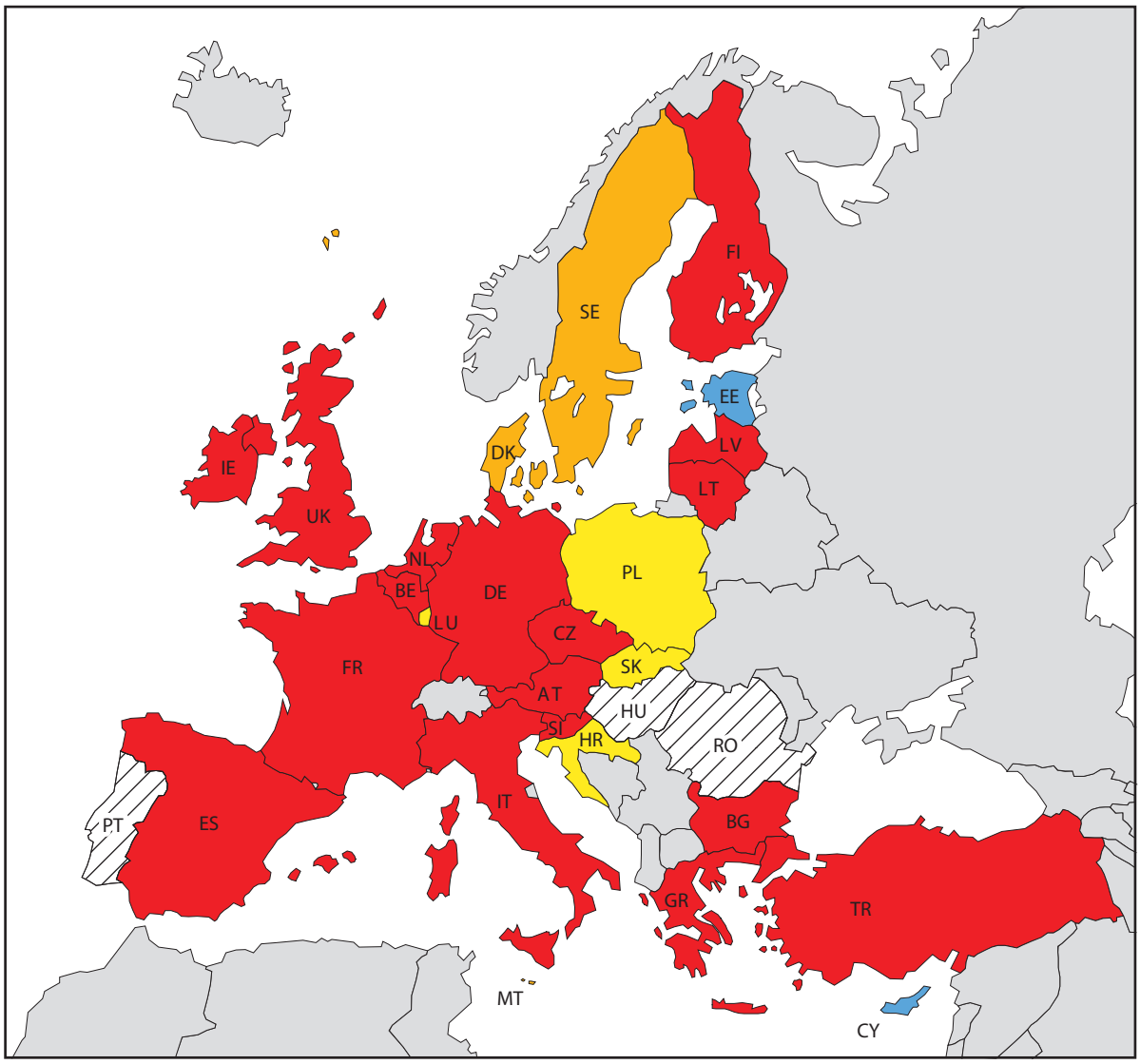
		National Programme of Action	Date of start	Integration of housing sector	Specific initiatives
Old EU member states					
Austria	AT	1	2002	1	-
Belgium	BE	1	2002	1	-
Denmark	DK	1	-	0	1
Finland	FI	1	1992	1	1
France	FR	1	1994	1	-
Germany	DE	1	1990	1	-
Greece	GR	1	1995	1	-
Ireland	IE	1	2000	1	1
Italy	IT	1	-	1	-
Luxembourg	LU	0	-	-	1
Netherlands	NL	1	1999	1	-
Portugal*	PT				
Spain	ES	1	2005	1	-
Sweden	SE	1	2001	0	1
United Kingdom	UK	1	2000	1	-
New EU member states					
Cyprus	CY	0	2008	-	0
Czech Republic	CZ	1	2000	1	-
Estonia	EE	0	-	-	0
Hungary*	HU				
Latvia	LV	1	2005	1	-
Lithuania	LT	1	1996	1	-
Malta	MT	1	2004	0	1
Poland	PL	0	-	-	1
Slovakia	SK	0	-	-	1
Slovenia	SI	1	2004	1	-
EU accession states					
Bulgaria	BG	1	2005	1	-
Croatia	HR	0	-	-	1
Romania*	RO				
Turkey	TR	1	2000	1	-

* Questionnaire not received

Note: 1 = Yes, O = No

Figure 4 **Orientation of public policies**

Type of initiatives taken in order to reduce the greenhouse effect



National programme of action including the housing sector

National programme of action not specifically including the housing sector

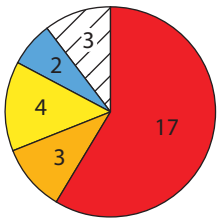
No programme of action but specific actions

No initiatives

Not responding

0 1000 km

Number of countries per category



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Programmes in favour of energy consumption reduction

Austria	Klima:aktiv has the following relevant sub-programs: • Solar heat (use of solar technology, also in residential buildings), since 2004 • Modernity of dwelling (redevelopment of high volume dwelling stock), since 2005 • Active redevelopment (redevelopment of one-family houses), planned in 2005 • Wood heat (use of bio mass heating), planned since 2005 • Warmth pump (use of warmth pumps in residential buildings), planned in 2005 • Ecofacility (redevelopment of service buildings), since 2004 The programmes of Klima:aktiv focus especially on information, motivation and consulting of building contractors, house superintendents, home owners and on training of planners and professionals (executives). The grant of constructions subsidies is linked for new construction, partially also for redevelopment to comply with energy indicators. Moreover, concerning construction subsidies, a switch is aimed at from new constructions to redevelopment. Objectives regarding the reduction of energy consumption: • Austrian climate strategy • Thermic-energetic redevelopment of residential buildings: 1,6 Mtoe
Belgium	***Flemish region*** • Introduction of minimum energy performance requirements for buildings from 01/01/2006 on. • Introduction of energy performance certificates for buildings that are sold (2007/2008) or rented out (2008/2009). • RUE public service obligations imposed on the operators of the electricity distribution grids: the grid operators are obliged to achieve a primary energy saving for their end users every year. Since 2003, they give financial support for RUE-investments in dwellings. ***Brussels-Capital city*** • Inventory: to know more accurately the situation of the housing stock in terms of energy used (boiler + casing) • Information: to organise public campaigns and to get a true information centre for consumers • Support: to develop the number of financial measures in favour of householders • Information: to make energy bills more readable and informative • Regulation: to implement the thermic regulations [K55], to reinforce the thermic regulations, to incitate owners, tenants and backers to get the energy certificate, to spread the energy certificate • Control: to make systematic controls of boilers ***Walloon region*** • Communication: public awareness campaigns «Let's reinvent energy», energy centres, actions in terms of price fixing • Energy performance of buildings: to increase awareness, to convince people, to develop volontary actions and to secure a regulations framework • Financial support: grants to facilitate investments and to stimulate emerging markets

Bulgaria	National program for innovation of the residential buildings • Priority innovation of the residential buildings with more than 3 stories, according to the building systems: Large Panel Residential Buildings (LPRB), Large Panel Shuttering (LPSH), Sliding Formwork (SF), Packet Lift Slabs (PLS) and Traditional Monolithic (TM) in the towns • Inquiry and registration of the actual condition of the bearing structure, the cladding structure, the systems of the installations, the hydroinsulations and other • Increase of the thermal insulation of the cladding structure, in this number replacing of the external carpentry with PVC or Al parallelly with program for replacement of the subscriber stations • Replacement of the internal installations, repair of the hydroinsulation One of the purposes of the cited above program for innovation of the residential buildings is creation of conditions for economy of energy for heating, by means of improvement of the thermal insulating properties of the cladding structure in this number of the external carpentry.
Croatia	The organized care about energy efficiency in housing sector in Croatia is carried out through the National Energy Program of improving energy efficiency in buildings called KUENbuilding. The basic goal of energy efficiency within the program KUENzgrada is the reduction of energy needs during design, construction and utilization of buildings and settlements, and during the restoration of the existing buildings as well as the creation of suitable microclimatic parameters in areas around the buildings with the decrease of environmental impact. Improvement of centralised thermal systems is a main task of National Energy Program called KUENcts. New “rulebook on energy saving and thermal protection of building” predicts energy saving about 20% (in preparation).
Cyprus	• Improvement of the thermal behaviour of buildings in the residential sector (Measure OT1). This measure implies : (a) formulation and mandatory – after 2005 – implementation of a space heating regulation for all new buildings constructed before 2005, so that 50% of those buildings in 2010 and 100% of those buildings in 2020 end-up in having such an insulation. Implementation of such a measure can lead (in 2020) to a thermal profit up to 62 ktoe and an electric profit up to 2,3 ktoe, while emissions reduction mounts up to 216 ktn CO2–equiv. • Maintenance of central heating boilers (Measure OT3). The maintenance of central heating boilers on an annual basis could lead to an improvement of their performance up to 10%, depending on the boiler´s condition before its maintenance. The penetration rate of the measure is 60% (in 2010) and 100 (in 2020) of the existing (i.e. in 1997) boilers of the residential and tertiary sector. It is estimated that the implementation of the measure can lead (in 2020) to a thermal profit up to 3,2 ktoe, while emissions reduction mounts up to 10 ktn CO2–equiv. • Replacement of central heating boilers (Measure OT4). Replacement of old boilers with new ones with a high-energy performance. The penetration rate of the measure is 25% for 2010 and to 50% for 2020 of the existing (i.e. in 1997) central heating boilers in the residential sector, while the penetration rate in the public sector is 50% and 75% respectively. It is estimated that the implementation of the measure can lead (in 2020) to a thermal profit up to 5,3 ktoe, while emissions reduction mounts up to 16 ktn CO2–equiv. • Use of high efficiency air conditioning systems (Measure OT5). The energy conservation by unit is estimated approximately to 20%. The penetration rate of new, energy-efficient units, is 75% for 2010 and to 100% for 2020 of the total installed units in the residential sector. It is estimated that the implementation of the measure can lead (in 2020) to an electricity profit up to 38 ktoe, while emissions reduction mounts up to 437 ktn CO2–equiv. • Use of high efficiency electric appliances (Measure OT6). The penetration of

	energy-efficient electric appliances (note: this measure applies to the residential sector only) is 75% in 2010 and 100% in 2020 of the total appliances. It is estimated that the implementation of the measure can lead (in 2020) to an electricity profit up to 6,5 ktoe, while emissions reduction mounts up to 74 ktn CO2–equiv. Use of energy-efficient buildings bulbs (Measure OT7). The penetration rate is 80% (in 2010) and 100% (in 2020) of the conventional lightings bulbs in the residential and tertiary sector. It is estimated that the implementation of the measure can lead (in 2020) to an electricity profit up to 35 ktoe, while emissions reduction mounts up to 394 ktn CO2–equiv.
Czech Republic	• Supporting energetically efficient objects and their preferential treatment by subsidies (State Fund for Housing Development) • Thermal insulation of objects • Control of space heating systems • Additional incentives in support of measures aimed at energetic efficiency
Denmark	-
Estonia	-
Finland	The energy conservation measures included in the National Climate Strategy have been implemented in all policy areas and in every sector. The energy conservation programme that was revised in connection with drafting the Strategy has been implemented since the year 2000. The implementation of energy conservation agreements started in 1999 in the real estate and construction sectors. The energy conservation programme on furthering energy conservation in oil-heated properties (Höylä I) was renewed in June 2000 (Höylä II). In 2002 the Ministry of the Environment, the Ministry of Trade and Industry and the Federation of Housing Property Owners and Developers (ASRA) signed a voluntary energy conservation agreement for the housing sector.
France	• Information for consumers and prescribers. Public campaign on energy control and actions against the greenhouse effect organised by the National Agency for Environment and Energy Control (ADEME) • Regulation for new buildings and existing ones • The use of efficient equipments when buildings are contructed or renovated • Reinforcement of the existing regulations • Regulations on energy for existing buildings when important rehabilitations are carried out or when some materials or equipements are replaced. • Certificate on energy saving (also called “white certificate”) • Diagnosis on the energy efficiency of buildings according to the European directive 2002/91/CE • Fiscal exemption for built up properties if improvements are made concerning energy • Tax credit for efficient energy equipements • A moderate use of air conditioning systems • Research and Development programme on energy in buildings • Implementations of actions at a local level

Germany	• Reduction of the consumption by energy saving, more use of efficient heating and warm water supply facilities and the realization of energetic redevelopment measures in the building stock • Legal disciplinary measures • Improvement of the constructional heating protection as well as the heating and warmth supply facilites by adaptation of the decree of energy saving • Financial promotion • Influencing of investment processes in the buildings stock in order to improve the efficiency of redevelopment by incentives to the realization of redevelopment measures as well as public relations • Economical user behavior • Sensitization of users, owers and professionals for the importance of the energetic quality of buildings
Greece	• Obligatory thermal insulation • Energy efficiency standards for boilers • Energy efficiency standards and labelling of household equipment • Introduction of the energy performance regulation in buildings (energy requirements, labelling of buildings, audits in buildings) • Promotion of natural gas consumption in the residential sector • Energy conservation in the building sector • Tax exception of 20 % of the purchase and installation cost of natural gas systems. • National funding of energy conservation installations in big residential complexes
Hungary	-
Ireland	• Strengthened national building regulations for new housing • Expanded natural gas infrastructure, supporting fuel switching to more efficient systems • Sustainable Energy Ireland Low Income Housing programme • Sustainable Energy Ireland House of Tomorrow Research & Development programme • Sustainable Energy Ireland Consumer Information Programme • Implementation of the Energy Performance of Buildings Directive in Ireland (Further information can be found at www.epbd.ie and www.sei.ie)
Italy	The most innovative policy instrument affecting energy efficiency in the building sector is the system of Energy Efficiency Title (or "White Certificates"). This is a market-oriented system of tradable certificates, requiring from the distributors of electricity and gas a mandatory increase in the efficiency of the final use of energy, expressed in tonnes of oil equivalent of primary energy saved through efficiency interventions with respect to the business-as-usual trend and additional to the spontaneous evolution of the market and to the effects of other norms, regulations or incentives. The system was first introduced by two Ministerial decrees (one for gas and the other for electricity distributors) of April 2001, then implemented (starting from January 2005) by two more decrees of July 2004. Electricity and gas distributors are obliged to undertake the promotion of energy efficiency in final uses, and to show that they realize each year interventions leading to save an amount of energy which is a given percentage of the energy they supply or distribute. This amount is certified through certificates (the "White Certificates") that are generated when the obligated parties themselves, or other actors, introduce energy saving measures. Such certificates can be exchanged and traded on the market. Obligated parties unable to submit their share of certificates are subject to pecuniary sanctions exceeding the market value of the missing certificates. Electricity and gas distributors are not limited to introducing energy savings involving

	their clients; they can produce certificates demonstrating efficiency improvements obtained for any final user, provided that at least 50% of saving concerns electricity for the electricity distributors and gas for the gas distributors. The instrument of Energy Efficiency Titles is not limited to households: it concerns the tertiary sector, industry (excluding the energy-intensive industries that are subjected to the Emission Trading Directive) and in some cases even transport. However, it is expected that it will be applied mostly for the building sector, and within this sector perhaps half to the residential and half to the commercial sectors.
Latvia	All activities in the scope of implementation of Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance on buildings.
Lithuania	National energy efficiency programme (Adopted in 1992).
Luxembourg	-
Malta	New policies undertaken by Housing Authority include the installation of energy saving features in all new housing projects undertaken by the Housing Authority. As from January 2005, the housing projects are to include the following energy saving features: double glazing in apertures, window and door louvers, roof insulation, well and solar water heaters. Enemalta is giving a rebate to New Domestic Single-Phase Customers equal to the application fee of 16 Euro, when they install a solar water heater on the premises. (Note this fee is not reimbursed to existing households already with a network connection and who install a solar water heater). With effect from 1st of January 2005, the Ministry of Finance is also giving a grant of 15.25 % on the purchase price or 115.5 Euro maximum. This is independent from the above Enemalta rebate – Government Gazette 1/3/05 No. 203.
Netherlands	The Implementaion Note for Climate Policy contains a reduction target for the built-up environment. In a separate governmental policy letter policy and policy instruments that are necessary to achieve the reduction target are detailed. This encompasses a mix of regulatory, financial instruments, and information and communication activities. Concrete projects are: Energy Premium Regulation of 2003 aimed at the use of energy efficient apparatus, implementation of insulation and sustainable energy.
Poland	-
Portugal	-
Romania	-

Slovakia	The Conception of renewal of buildings, with the emphasis to the housing stock, approved by the resolution of government SR No. 1088 of December 1999, has determined gradual steps for the renewal, and there were prepared the supportive economic instruments. The Program of complete renewal was changed in year 2003 to the support for renewal of residential buildings, within the framework of which the thermal protection of buildings is supported, which leads to the savings of energy for heating of buildings and thus also to the reductions of CO2. In Slovakia, there is also applied the scheme for support of energy saving and utilisation of renewable energy sources (assistance scheme de minimis). Even though the scheme is not directly directed towards the decrease of energy demands of buildings, but it contributes to it indirectly by the decrease of heat consumption for heating through the supported projects: • Joining of several small heat sources (block or house boiler rooms) into a bigger source with the combined production of electricity and heat. The required primary fuel saving must be at least in the amount of 30 % from the fuel consumption at the separated production of heat and electricity, produced in the condensation mode on the base of the same fuel. • Reconstruction and modernization of heat source to the source with combined production of electricity and heat. The demonstrable saving of primary fuel must reach at least 30 % from the fuel consumption at the separated production of heat and electricity, produced in the condensation mode on the base of the same fuel. • Reconstruction and modernization of heat source by the change of fuel or the way of combustion, at which there shall occur a decrease of burden for environment under the limits determined by a legislative regulation and the fuel saving shall be achieved in the amount at least 15 % recalculated to average yearly quantity of supplied heat. Technical measures for distributing systems with the purpose of: • Modernization of heat distribution systems • Replacement of steam distribution systems with hot-water or warm-water distribution systems • Reconstructions and modernizations of heat-exchange stations • Modernization of measurement and control system • With the saving of heat supplied to distribution systems
Slovenia	• Financial incentives (grants, soft loans) for reconstruction of buildings • Financial incentives for low-energy houses (planed) • Subsidies for energy audits and feasibility studies • Advisory network for households (advise free of charge) • Information, awareness building and promotion programmes • Regulation on thermal insulation and energy efficiency of buildings • Regulation on ventilation and air-conditioning • Regulation on energy labelling of domestic appliances • Regulation on minimum efficiency standards: boilers, refrigerators and freezers • Regulation on heat billing in residential buildings
Spain	Spanish Energy Savings and Efficiency Strategy so called E4, 2004-2012. for which an Action Plan is under preparation.
Sweden	-

Turkey	The "TS 825 Regulations of Heat Insulation", dated 2000, is a legal regulation for the reduction of energy consumption in the buildings. According to this regulation, it is compulsory for the new housing buildings to obey the regulations of this regulation. The regulation was issued by Ministry of Public Works and Settlement. Moreover, recently a broad conversion to natural gas (through natural gas pipework) is being applied to the housing units in every cities (where and when possible)
United Kingdom	Our April 2004 Energy Efficiency Action Plan sets out a comprehensive package of measures to improve energy efficiency in the household sector. Key measures in the Action Plan for the household sector include: • Energy Efficiency Commitment, which requires energy suppliers to meet targets for helping households improve their energy efficiency. • Revision to the Building Regulations – carry out a review of the energy efficiency provisions in Part L of the Building Regulations, with the aim of bringing the next major revision into effect in 2005. Aim is to achieve an improvement in energy efficiency of around 25% for new housing and set substantially higher standards for work carried out on existing housing. • Decent Homes Programme – all social housing must be decent by 2010 and in the private sector the aim is to increase the proportion of vulnerable households living in decent homes. To be classified as decent a home must pass the thermal comfort criterion. This means it must have both efficient heating and effective insulation. However, this is a minimum trigger standard and we advise landlords to carry out work to a higher standard in our guidance. • Provision of information, advice and grant through the Defra-funded Energy Saving Trust. The Government also operates the Warm Front Programme in England, with devolved equivalents in other countries. This provides free heating and insulation measures to eligible households in the private sector. Whilst this programme will provide carbon savings, the main policy objective is to contribute to the Government's target of eradicating fuel poverty in vulnerable households in England as far as reasonably practicable by 2010.

Programmes in favour of the use of renewable energy sources

Austria	-
Belgium	***Flemish region*** • Financial support for the use of PV. • The RUE-action plans of the grid operators include also financial support for the solar boiler and the heat pump. ***Brussels-Capital city*** • Information: to organise public campaigns and to get a true information centre for consumers • Support: to increase the number of financial measures in favour of householders ***Walloon region*** To develop sources of renewable energy to reach a level of consumption for this type of energy representing 8% of the whole and final electric consumption, 10 % of the final consumption for the heating system, 15% of the electricity produced through cogeneration by 2010 Tools: green certificate, managers to facilitate renewal, actions for passive solar energy sources ("Helios competition") and also for active ones (Soltherm…) minor hydroelectricity sources of energy, biomass, windmill, biofuel…
Bulgaria	-
Croatia	New rulebook promotes renewable energy sources.
Cyprus	GRANT SCHEME for Energy Conservation and the Promotion of the Renewable Energy Sources (RES) Utilization.
Czech Republic	Incentives in support of utilisation of renewable energy sources (Ministry of Industry and Trade/Czech Energy Agency, State Environmental Fund)
Denmark	-
Estonia	-
Finland	The measures included in the National Climate Strategy for promoting renewable energy sources have been implemented in all of the action areas of the Strategy. Renewable energy technology is also one of the priorities of the National Technology Agency (Tekes). In recent years, the Climtech–Technology and Climate Change Programme 1999–2002 and a new programme, ClimBus (business opportunities in mitigating climate change) 2004-2008, have been among the central technology programmes in terms of renewable energy. Moreover, renewable energy technology is included, for example, in the programme CUBE-The Building Services Technology Programme 2002-2006. The Ministry of Agriculture and Forestry provides financing (along with co-financing from the EU's ERDF) for development projects promoting the use of wood energy within its Regional Rural Development Programme (ALMA), within the Objective 1 programmes, and, to some extent, within the LEADER+ programme.
France	• Information for consumers and prescribers

	• Regulation for new buildings and existing ones • Incentive measures (certificate on energy saving, tax credit, energy stick-on label…) France is, with 18 Mtep, the first producer and consumer of RES in Europe. Half of this production is made of firewood. To maintain and develop the use of modernised firewood energy for building (and especially for housing) is considered to be a big issue. The use of solar energy is also considered important. The orientation in favour of thermic RES has been mentioned in the bill on energy which is discussed in parliament at the moment. The objective is to increase by 50% the production of thermic RES by 2010. The main implemented measures of this policy are the strenghtened tax incitations (a 40 % tax credit for householders, accelerated paying off for businesses) and the continuation of ADEME's grants for businesses (social housing, heating network…)
Germany	• More use of renewable energies as well as substitution of existing supply systems by energy sources low on CO2. • On the basis of directives to the promotion of measures for the use of renewable energies (Bundesanzeiger 234 of 13.12.2003) subsidies are granted for investment measures concerning the constuction of solar collector installations as well as heating installation (heating systems) for the use of solid bio mass (wood pellets or other wood).
Greece	• Promotion of RES applications in buildings • Tax exception of 20 % of the purchase and installation cost of solar systems. • National funding of RES installations use in big residential complexes
Hungary	-
Ireland	• National targets for renewable energy and combined heat & power • Alternative Energy Requirement programme • National Grid Upgrade Development Programme • Sustainable Energy Ireland Combined Head and Power Programme • Sustainable Energy Ireland Renewable Energy Information Office
Italy	In addition to the general reference to the EET scheme, mention is made of solar thermal applications, with a potential reduction of 0.2 Mt CO2 eq/y, and of small PV applications, with a potential reduction of 0.1 Mt CO2 eq/y
Latvia	• Promotion of biomass, biogas and solar power use. • In 2005 a strategy for the use of renewable energy sources will be developed by Ministry of Environment.
Lithuania	National energy efficiency programme (Adopted in 1992).
Luxembourg	-

Malta	Enemalta is accepting grid connections of small photovoltaics and paying for the energy exported into the grid at 0.046 Euro per kWh. The Malta Resources Authority is currently undertaking a study on the development of a strategy for the exploitation of renewable energy sources in Malta. The strategy will incorporate the legal and regulatory aspects, economic and fiscal aspects and administrative issues and procedures for the introduction of renewable energy and is expected to be completed within the 2nd part of 2005.
Netherlands	The Implementaion Note for Climate Policy contains a reduction target for the built-up environment. In a separate governmental policy letter policy and policy instruments that are necessary to achieve the reduction target are detailed. This encompasses a mix of regulatory, financial instruments, and information and communication activities. Concrete projects are: Energy Premium Regulation of 2003 aimed at the use of energy efficient apparatus, implementation of insulation and sustainable energy.
Poland	-
Portugal	-
Romania	-
Slovakia	The scheme was introduced in Slovakia for the support of energy savings and utilisation of renewable energy sources (assistance scheme de minimis) and within the framework of departmental operating program Industry and Services under the Measure 1.4 there are being realised projects for support of energy savings and utilisation of renewable energy sources.
Slovenia	• Financial incentives (grants, soft loans) for investments in renewable energy sources • Feed-in tariffs for green electricity • Subsidies for energy audits and feasibility studies • Advisory network for households (advise free of charge) • Information, awareness building and promotion programmes
Spain	Plan for the Promotion of Renewable Energy in Spain, 2000-2010
Sweden	-
Turkey	For the use of renewable energy sources, a draft Law has recently been prepared by the Ministry of Energy and Natural Resources and this law is now on the Agenda of Turkish Grand National Assembly. The draft law is labelled as “Renewable Energy Law”. It is estimated that this law can be put into action in the second half of 2005 or 2006.
United Kingdom	-

Specific initiatives in order to reduce the greenhouse gazes in the housing sector

	Energy consumption reduction	Use of renewable energy sources
Denmark	• Building regulation concerning insulation of new buildings (since 1995)	
Luxembourg	• Grand Ducal regulation concerning thermic insulation of new buildings	
Sweden	• Examination, labeling and certification of energy demanding equipments • Information and education, procurement of energy efficient products • Tax reduction for energy efficient windows in existing houses • Climate Investment Program (grant system)	• Tax reduction for biomass heating in new houses • Incentives for solarpanels
Malta	• Installation of energy saving features in all new housing projects undertaken by Housing Authority (january 2005)	• Financial incentives for customers who install solar water heater • Grid connection of small photovoltaics and payment for the energy exported to the grid
Poland	• Thermomodernisation Act (regulation) : since 1998 for existing buildings • Ordinance about technical criteria to be met by buildings (regulation) : since 1997 for new buildings or renovation • National Fund of Environmental Protection (NFOSiGW) (investment support) : since 1991 for all types of buildings • Voivodships Funds for Environmental Protection (investment support) : since 1991 for all types of buildings • EkoFund (investment support)	
Slovakia	• Renewal of buildings and thermal protection • Modernization of heat production and distribution systems	• Utilization of renewable energy sources (assistance scheme de minimis)
Croatia	• Improving energy efficiency in buildings • Reduction of energy needs during design, construction and utilization of buildings (also during restoration of existing buildings)	• Promotion of renewable energy sources

II. DETAILS OF THE MEASURES TAKEN

II.1. Awareness campaigns

II.2. Training actions

II.3. Financial incentives

II.4. Regulations

II.5. Assistance to research and development

II.1. Awareness campaigns

Table 4 – Existence of specific organisms for the diffusion of information and awareness campaigns

		Existence of specific organisms	Existence of campaigns
Old EU member states			
Austria	AT	1	1
Belgium	BE	1	1
Denmark	DK	1	1
Finland	FI	1	1
France	FR	1	1
Germany	DE	1	1
Greece	GR	1	1
Ireland	IE	1	1
Italy	IT	1	1
Luxembourg	LU	1	1
Netherlands	NL	1	1
Portugal*	PT		
Spain	ES	1	1
Sweden	SE	1	1
United Kingdom	UK	-	-
New EU member states			
Cyprus	CY	1	1
Czech Republic	CZ	1	1
Estonia	EE	-	-
Hungary*	HU		
Latvia	LV	1	1
Lithuania	LT	1	1
Malta	MT	1	1
Poland	PL	1	1
Slovakia	SK	1	1
Slovenia	SI	1	1
EU accession states			
Bulgaria	BG	0	-
Croatia	HR	1	-
Romania*	RO		
Turkey	TR	1	1

Note: 1 = Yes, O = No

Table 5 – Public targeted by the campaigns on the reduction of energy consumption

		Private individual	Public rental body	Private rental body	Housing associations	Profes-sionals	Others (schools)
Old EU member states							
Austria	AT	X	X	X	X	X	x
Belgium	BE	X	X	X	X	X	X
Denmark	DK	X	X	X	X	X	X
Finland	FI	X	-	-	-	-	-
France	FR	-	X	X	X	X	X
Germany	DE	No exploitable data					
Greece	GR	X	-	-	-	X	X
Ireland	IE	X	-	-	-	X	X
Italy	IT	No exploitable data					
Luxembourg	LU	X	X	X	X	X	-
Netherlands	NL	X	X	X	X	X	-
Portugal*	PT						
Spain	ES	X	-	-	-	X	-
Sweden	SE	X	-	-	-	-	-
United Kingdom	UK	-	-	-	-	-	-
New EU member states							
Cyprus	CY	X	-	-	-	X	X
Czech Republic	CZ	No exploitable data					
Estonia	EE	-	-	-	-	-	-
Hungary*	HU						
Latvia	LV	X	-	X	X	X	X
Lithuania	LT	X	X	X	X	X	X
Malta	MT	No exploitable data					
Poland	PL	X	X	X	X	X	X
Slovakia	SK	No exploitable data					
Slovenia	SI	No exploitable data					
EU accession states							
Bulgaria	BG	-	-	-	-	-	-
Croatia	HR	-	-	-	-	-	-
Romania*	RO						
Turkey	TR	X	X	-	-	-	X

* Questionnaire not received

Table 6 - Public targeted by the campaigns on the use of renewable energy sources

		Private individual	Public rental body	Private rental body	Housing associations	Professionals	Others (schools)
Old EU member states							
Austria	AT	X	X	X	X	X	X
Belgium	BE	X	-	-	-	-	X
Denmark	DK	X	X	X	X	X	X
Finland	FI	-	-	-	-	-	-
France	FR	X	-	-	-	-	-
Germany	DE			No exploitable data			
Greece	GR	X	-	-	-	X	X
Ireland	IE	X	-	-	-	X	X
Italy	IT			No exploitable data			
Luxembourg	LU	X	X	X	X	X	-
Netherlands	NL	X	-	-	-	-	-
Portugal*	PT						
Spain	ES	X	-	-	-	X	-
Sweden	SE	X	-	-	-	-	-
United Kingdom	UK	-	-	-	-	-	-
New EU member states							
Cyprus	CY	X	-	-	-	X	X
Czech Republic	CZ			No exploitable data			
Estonia	EE	-	-	-	-	-	-
Hungary*	HU						
Latvia	LV	-	-	-	-	-	-
Lithuania	LT	-	-	-	-	-	-
Malta	MT			No exploitable data			
Poland	PL	-	-	-	-	-	-
Slovakia	SK			No exploitable data			
Slovenia	SI			No exploitable data			
EU accession states							
Bulgaria	BG	-	-	-	-	-	-
Croatia	HR	-	-	-	-	-	-
Romania*	RO						
Turkey	TR	-	-	-	-	-	-

* Questionnaire not received

Examples of awareness campaigns driven by the current and future EU member States

Austria

Example 1: **Program klima:aktiv of the Federation**
www.klimaaktiv.at

Example 2: **Action climate rescue of the Federal state "Oberösterreich"**
www.klimarettung.at

Belgium

Brussels-Capital city

Example 1: **For householders**
Apart from the information policy concerning the existing grants and other communication tools (information centres, leaflets…), the Region carries out concrete actions for householders.

These actions have been implemented as an experimental project in automn/winter 2004/2005 : training and supervision of householders for a rational use of energy, especially for heating. This action was carried out for 2 different type of people : Firstly in 5 social housing areas and for more than 400 less-favoured householders and secondly for socially more priviliged householders (training of 30 « Kyototeam » regrouping 250 people making energy saving up to 21%)

In 2005/2006, more ambitious projects have been started, projects targeting a larger group of people in social housing areas and also for more-favoured householders.

Example 2: **For schools**
Brussels Capital City has made an educational briefcase on energy (content: rational consumption and renewable energy). A first briefcase was sent to all primary schools and experimented more precisely in 5 of them which also had an educational support and an audit on energy use. This experimental phasis was useful to finalise an appropriate educational tool which has been proposed to all primary schools with or without an educational support. All schools are informed with an annual call for projects financed by the Region. For the first time in 2005, energy will be put forward in this call: the objective is to have 20 schools participating in the project. At the same time, the Region support the European project FEEDU managed by the "Centre Urbain" which completes its concrete actions for schools by offering training for teachers.

This action has an impact on housing as children going back home will tell their parents about useful messages and concrete actions which can be implemented at home. At the same time, this training is a way to educate future citizens.

Flemisch region

Example 1: **The communication campaign of the energy department of the Ministry of Flanders**
The central slogan is 'Saving energy: the gains are for you and the environment'. The number of waves of the campaign was extended from two to four per year from 2003. The campaign focuses particularly on the most important building fairs where the energy department is represented with its own stand and on the organisation of the annual Month of energy savings in October. Attention is focused on energy saving throughout the year by means of brochures, press releases, publicity and the development of the website www.energiebesparing.be. Energy savings tips are linked to existing financial contributions of the federal, Flemish and local governments. The campaign also devotes attention to renewable energy.

Walloon region

Example 1: **"Educational" electricty and gaz bills**
The Walloon legislation makes provisions for bills including messages concerning a rational use of energy. A brochure on this theme is sent to householders with the regularization bill and when electric joignings are made.

Example 2: **"What are the energy sources …in my district"**
This campaign aims at increasing the awareness of citizens concerning the energy policy at stakes and at incitating them to put the right questions to their coummune councils. This campaign has various lines :

- Visits of active Walloon communes on energy matters
- Training of citizens on the political stakes of energy
- Training of citizens to enable them to question concretely their commune (energy sticks-on labels, internet site...);
- Opinion poll on energy efficiency of public buildings belonging to the commune council
- Efficiency results of these building put in the public domain and a memorendum sent to local authorities about it.

Bulgaria

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Croatia

-

Cyprus

Example 1: **Exhibition on Energy Conservation and RES**

Czech Republic

Example 1: **Energy Efficiency Business Week**
http://www.eebw.cz/index-a.htm

Example 1: **Fair Aquatherm**
http://www.aquatherm.cz

Denmark

-

Estonia

-

Finland

Example 1: **Energy Awareness Week** (coordinated by Motiva)

France

Example 1: **"Quick ! It's getting hot!"**
Public campaign « Quick ! It's getting hot! » on energy saving and policies against the green-house effect due to human activities; a campaign organised by the National Agency For Environment and Energy Control (ADEME)

Germany

Example 1: **The promotion of living quality of the Government**
By means of the campaign „The promotion of living quality of the Government" the existing CO2-programs for building redevelopment of the „Kreditanstalt für Wiederaufbau" (Credit institute for reconstruction" were promoted, technical information for possible redevelopment measures was edited and the impact on climate protection was brought before the public.

Example 2: **www.initiative-energieeffizienz.de**
Supporter of the initiative are the associations of the power economy (VDEW, VRE and VKU) and dena, financially supported by the German „Deutsche Bundesstiftung Umwelt" and the Ministry for Economy and Employment. By an information campaign through the whole country the initiative EnergieEffizienz is informing about efficient power use in private households in the areas „Stand-by", "Illumination" and "White ware".

Greece

Example 1: **Promotion of energy efficient technologies and energy labelling in the tertiary and domestic sector**
The project "*Promotion of energy efficient technologies and energy labelling in the tertiary and domestic sector*", financed by the Ministry of Development and implemented by the Centre for Renewable Energy Sources. It aims to promote energy savings and RES applications through information dissemination, promotion and studies for the support of these technologies. All actions will take place within 18 months and they include:

- 9000 brochures on energy savings and RES in buildings, addressed to building professionals (architects, builders, artisans, etc),
- 9000 brochures on energy savings, energy consumption behaviour, equipment labelling and energy saving technologies, addressed to merchants/sellers of appliances, business equipment,
- website with information on energy savings technologies, energy consumption, RES, applications, interactive calculation tools of energy and financial savings from the use of energy saving technologies, etc,
- 5 articles concern professionals on the subject of energy conservation and RES,
- participation in 2 exhibitions in the area of energy conservation in buildings and RES,
- Dissemination of the results of Greek projects on energy savings and RES in buildings, via internet or brochures.

A project "*Information and awareness campaign for the promotion of RES and co-generation*" will be financed by the Ministry of Development and implemented within a period of 18 months. It concerns information dissemination, promotion, studies for the support of the above technologies and infrastructure projects for technical support.

Example 2: **Greek Ecological Housing-2000**
The Guidebook "*A Guidebook for Energy Savings in Residences*" is distributed at professionals of the building sector and individuals, through relevant exhibitions, seminars and also directly from the Ministry EPPPW.

In the year 2000, the Ministry EPPPW performed a national architectural competition with the theme '*Greek Ecological Housing-2000'* with awards from the best examples of existing and designs of residences according to ecological principles. The results of the competition (design and existing examples) were published in a book which is distributed by the MEPPPW.

Hungary

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Ireland

Example 1: **Energy Awareness Week**

- Sustainable Energy Ireland is responsible for organising Energy Awareness Week, the single most important platform for promoting energy in Ireland.
- Through a variety of media (TV and radio advertising, PR, events, websites, schools, competitions etc) certain specific aspects of saving energy in the home are promoted.
- In the past this has included a focus on such matters as buying energy efficient kitchen appliances, turning appliances off standby, turning home temperatures down to comfortable levels, buying energy efficient lighting.
- Key to the success of the initiative is the engagement and involvement of trade allies, those organisations and companies who can actually sell the products / services being promoted.
- In the past the Energy Awareness Week has seen a ten-fold (10x) increase in sales of Compact Floursecent Lamps (CFLs).

Example 2: **Schools Programme**

- The Sustainable Energy Ireland schools programme is developed in consultation with the various education sector stakeholders with a view to best integrating our activities with the core syllabi of the education sector.
- The programme has a variety of resources (print and web) for all age groups from 4-18 years and covering all relevant subject areas (science, physics, chemistry, geography, civics, home economics, building construction).
- A range of interactive workshops for a variety of age groups have also been developed in collaboration with a local university. Over 100 of these workshops are hosted around the country every year.
- A recent initiative was an energy related photography competition run in conjunction with the Belfast Energy Agency / Energy Savings Trust Northern Ireland.

Italy

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Latvia

Example 1: **Conference on Energy Efficiency in Housing in the Baltic States**

Took place in Riga, 7 – 8 October 2004. Co-financed by European Commission Directorate General for Energy and Transport. Organized by the Ministry of Regional Development and Local Governments and state agency "Housing Agency". Target audience: housing associations, housing owners, inhabitants, architects, politicians, regional planners, decision makers, building industry, real estate and financial market representatives.

Example 2: **Housing days**
Annual Housing days in Latvia with a theme on energy efficiency in housing. Target audience: municipalities, housing owners associations and housing owners. *Housing days* are held in all regions of Latvia in the form of seminars where specialists from the state and private sector dealing with energy efficiency issues are participating in discussions among the interested parties (see target audience) and answering the questions of inhabitants on the energy efficiency as an innovative aspect in housing development.

Lithuania

Example 1: **Informational awareness campaign on labelling of the effective consumption of electric energy by household appliances**
The campaign intended to inform producers, suppliers, consumers, regulatory institution's specialists about labelling of the effective consumption of electric energy by household appliances according to requirements of EU directives was prepared and conducted in 2003.

Informational awareness campaign included:
- Television and radio broadcasting;
- Articles with colour label's illustrations in daily newspapers edited and published;
- Leaflets with colour labels and advices how to choose household appliances with desired effectiveness, prepared, published and distributed in supermarkets.

When conducting informational awareness campaign the benefit from labelling of the effective consumption of electric energy was emphasized and peculiarities of labelling different household appliances were explained bringing to notice how to choose the desired appliance. Calculations were performed in order to evaluate how much energy is saved using effective electric appliances, thus motivating consumers to buy products of high quality and effectiveness.

Example 2: **Awareness campaign on energy saving**
The Campaign intended to inform residents was prepared and conducted during the 1998-1999. Campaign covered three main topics: electric energy saving, water saving and heat saving. Recommendations for energy saving using certain uncostly measures were given.

Campaign included three main elements:
- Media campaign with advertisements on TV, radio and in press;
- Public relations campaign including leading articles, TV and radio interviews, contests and open days;
- Direct consultations with employees of Energy Efficiency Centre.

Two different kinds of market research were done during the campaign. The first research intended for establishment of informational measures for certain target groups was performed in February 1998. The second research intended for evaluation of people's privacy and attitude towards energy saving took place in February 1999. The researches have shown that people's knowledge about means of saving energy and getting related information had changed due to campaign.

Luxembourg

Example 1:
Brochures for all households regarding rewards in the environment sector

Malta

Example 1: **Better Buildings**
Distribution during Malta Trade Fair of information on energy efficiency in Buildings by the Ministry for Resources & Infrastructure amongst which a leaflet called "Better Buildings" issued by the DG Energy & Transport of the EC.

Example 2: **Building for Comfort**
The Institute for Energy Technology of the University of Malta (IET – UM) has an educational programme for secondary and tertiary students as well as the public on practical measures to reduce energy consumption in buildings. A brochure entitled "Building for Comfort" is also distributed.

Netherlands

Example 1: **Campaign VROM 2003**
It is a campaign undertaken by the Netherlands Ministry of Housing c.a.

Example 2: "**Actie zuinig stoken, zuinig aan"**
This is a campaign of all energy firms together in 1999-2002.

Poland

Example 1: **Wise Pole before the construction - The friendly home**
Ministry of Infrastructure in liaison with industrial associations manages permanent awareness rise and educational campaign in a form of cyclical publications and seminars dedicated to potential investors (public and private), and to managers and building owners.

Portugal

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Romania

-

Slovakia

Example 1: **"We are building with Filip" (Staviame s Filipom)**
This initiative represents the publication and electronic consultancy organized by the Energy Centre Bratislava. Within the framework of this campaign, which has included especially the broadcasting of TV programs in years 2001 – 2004, the establishment of internet portal www.e-filip.sk and the issue of the unique specialised publication Let Us Build and Live with Filip (Stavajme a býv ajme s Filipom). The aim of campaign is to provide for the general public a complete stream of information on the possibilities of decreasing the expenses for energy, on the ways applicable in everyday life of households, on the approach to an environmental, energy-saving and healthy life style.

Example 2: **Racioenergia**
Specialised events organized within the framework of accompanying program of the international fair of energy efficiency and rationalization of fuel utilisation Racioenergia, which is held each year in April under the auspices of the Ministry of Construction and Regional Development SR and the Ministry of Economy SR, in a close cooperation with professional guarantors, at the same time with the international building fair CONECO and international specialised exhibition of air-conditioning and air technology. Already 15th year of the fair Racioenergia is being held in year 2005.

Slovenia

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Spain

-

Sweden

-

Turkey

-

United Kingdom

Example 1: **Climate Change Communications project**
The Government announced on 16 February a new £12 million Climate Change Communications project to help change public attitudes. The details of the project are currently under development and an announcement will made shortly

Example 2: **Energy Efficiency Week**
Defra is providing EST with around £25m funding in 2004-05 to help support its work of promoting energy efficiency through advertising programmes, advice centres and the endorsement of energy efficient products. The EST in 2004 organised the 8th Energy Efficiency Week with events to promoting Energy Efficiency to the public.

II.2. Training actions

Table 7 – Existence of training centres for professionals of the building sector financed by the State

			Training offered by domain	
		Existence of training centres	Energy consumption reduction	Renewable energy sources
Old EU member states				
Austria	AT	1	X	X
Belgium	BE	1	X	X
Denmark	DK	1	-	-
Finland	FI	1	X	-
France	FR	0	-	X
Germany	DE	1	X	-
Greece	GR	1	X	X
Ireland	IE	1	X	X
Italy	IT	1	X	X
Luxembourg	LU	1	X	X
Netherlands	NL	0	-	-
Portugal*	PT			
Spain	ES	1	X	X
Sweden	SE	1	X	-
United Kingdom	UK	0	-	-
New EU member states				
Cyprus	CY	1	X	X
Czech Republic	CZ	1	X	X
Estonia	EE	-	-	-
Hungary*	HU			
Latvia	LV	1	X	-
Lithuania	LT	1	X	X
Malta	MT	1	X	X
Poland	PL	0	-	-
Slovakia	SK	1	-	-
Slovenia	SI	0	-	-
EU accession states				
Bulgaria	BG	1	-	-
Croatia	HR	-	-	-
Romania*	RO			
Turkey	TR	0	-	-

* Questionnaire not received

Note: 1 = Yes, O = No

II. 3. Financial incentives

Table 8 – Public targeted by financial incentives

		Architects	Constructors	Building artisans	Other (housing managers, investors)	All professionals	House-owners
Old EU member states							
Austria	AT	0	0	0	-	0	1
Belgium	BE	0	0	0	-	0	1
Denmark	DK	-	-	-	-	-	-
Finland	FI	1	0	0	1	1	1
France	FR	0	1	0	-	1	1
Germany	DE	0	0	1	-	1	1
Greece	GR	0	0	1	-	1	1
Ireland	IE	0	1	0	0	1	0
Italy	IT	0	0	0	-	0	1
Luxembourg	LU	0	0	0	-	0	1
Netherlands	NL	0	0	0	-	0	0
Portugal*	PT						
Spain	ES	0	0	0	-	0	1
Sweden	SE	-	-	-	-	-	1
United Kingdom	UK	-	-	-	-	-	1
New EU member states							
Cyprus	CY	-	-	-	-	-	1
Czech Republic	CZ	1	0	0	-	1	1
Estonia	EE	0	0	0	-	0	1
Hungary*	HU						
Latvia	LV	0	0	0	-	0	0
Lithuania	LT	0	0	0	-	0	1
Malta	MT	0	0	0	-	0	1
Poland	PL	0	0	0	1	1	1
Slovakia	SK	0	1	0	-	1	1
Slovenia	SI	0	0	0	0	0	1
EU accession states							
Bulgaria	BG	0	0	0	-	0	1
Croatia	HR	0	0	0	-	0	0
Romania*	RO						
Turkey	TR	0	0	0	0	0	0

* Questionnaire not received

Note: 1 = Yes, O = No

II.4. Energy consumption regulations

Table 9 – Regulation framework

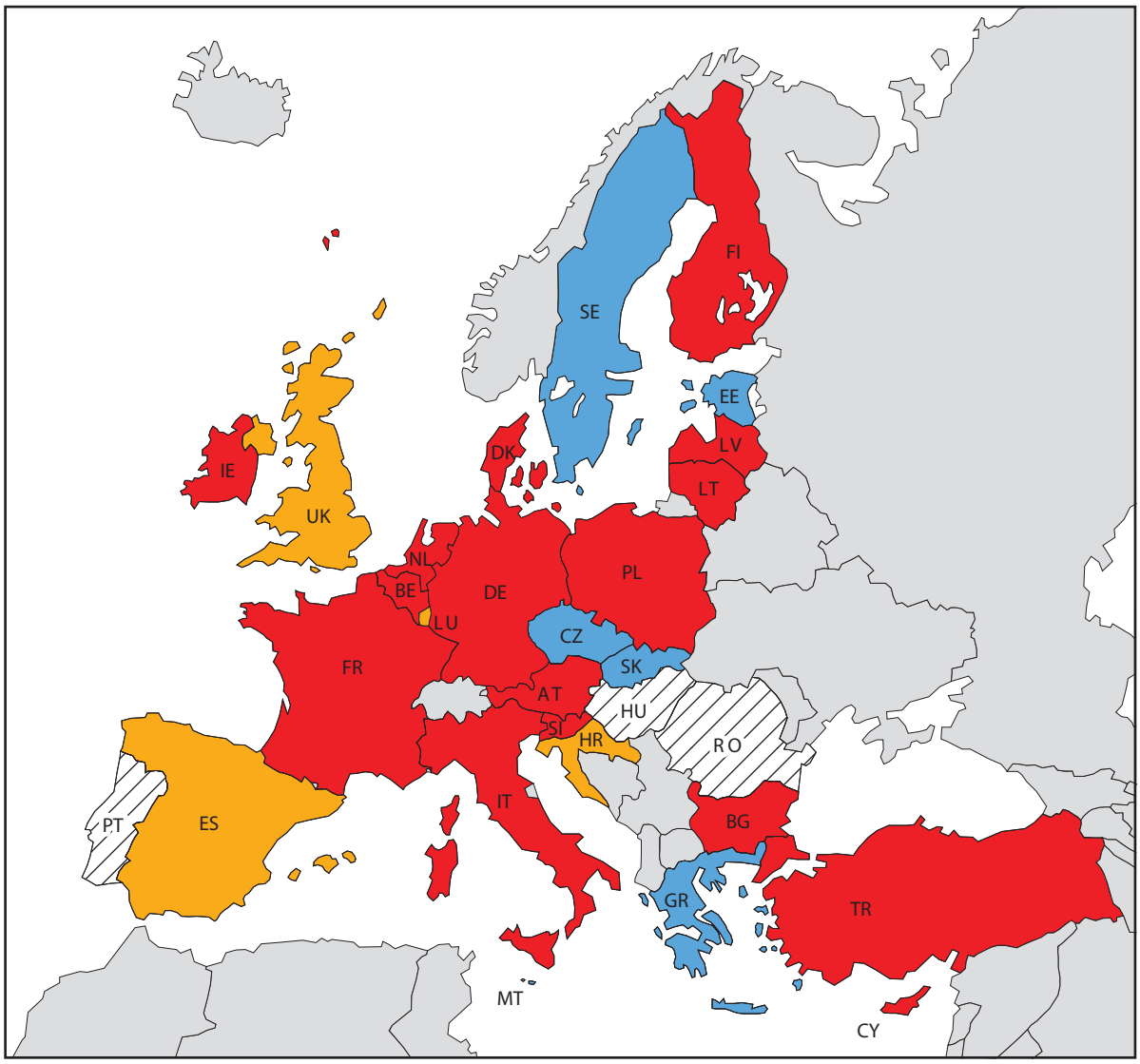
		Energy performance regulations				Minimum standards on energy performance			
		For new buildings	For existing buildings	Date new build.	Date existing build.	For new buildings	For existing buildings	Date new build.	Date existing build.
Old EU member states									
Austria	AT	1	1	-	-	1	1	1980	1980
Belgium	BE	1	1	1984	1996	1	1	1984	1996
Denmark	DK	1	0	-	-	1	0	-	-
Finland	FI	1	1	1979	-	1	0	2003	-
France	FR	1	0	1974	-	1	0	-	-
Germany	DE	1	1	1976	1976	1	1	2002	2002
Greece	GR	0	0	-	-	0	0	-	-
Ireland	IE	1	1	1991	1991	1	0	1997	-
Italy	IT	1	1	1991	1991	1	1	1993	1993
Luxembourg	LU	1	0	1995	-	0	0	-	-
Netherlands	NL	1	1	1995	1995	1	1	1995	1995
Portugal*	PT								
Spain	ES	1	1	-	-	0	0	-	-
Sweden	SE	0	0	-	-	0	0	-	-
United Kingdom	UK	1	1	2002	2002	0	0	-	-
New EU member states									
Cyprus	CY	1	1	-	-	1	1	-	-
Czech Republic	CZ	0	0	-	-	0	0	-	-
Estonia	EE	0	0	-	-	0	0	-	-
Hungary*	HU								
Latvia	LV	1	0	2003	-	1	0	2003	-
Lithuania	LT	1	1	1992	-	1	1	1992	-
Malta	MT	0	0	-	-	0	0	-	-
Poland	PL	1	1	-	-	1	1	1997	1998
Slovakia	SK	0	1	-	-	0	1	-	2002
Slovenia	SI	1	1	2002	2002	1	1	2002	2002
EU accession states									
Bulgaria	BG	1	1	-	-	1	1	-	-
Croatia	HR	1	0	1987	-	0	0	-	-
Romania*	RO								
Turkey	TR	1	1	2000	2000	1	0	2000	-

* Questionnaire not received

Note: 1 = Yes, O = No

Figure 5 **Details of the measures taken**

Energy performance regulations for new buildings



Regulations with minimum standards

Regulations without minimum standards

Absence of regulations

Not responding

N

0 1000 km

Number of countries per category

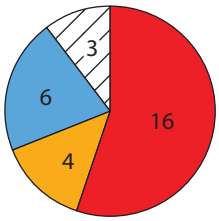


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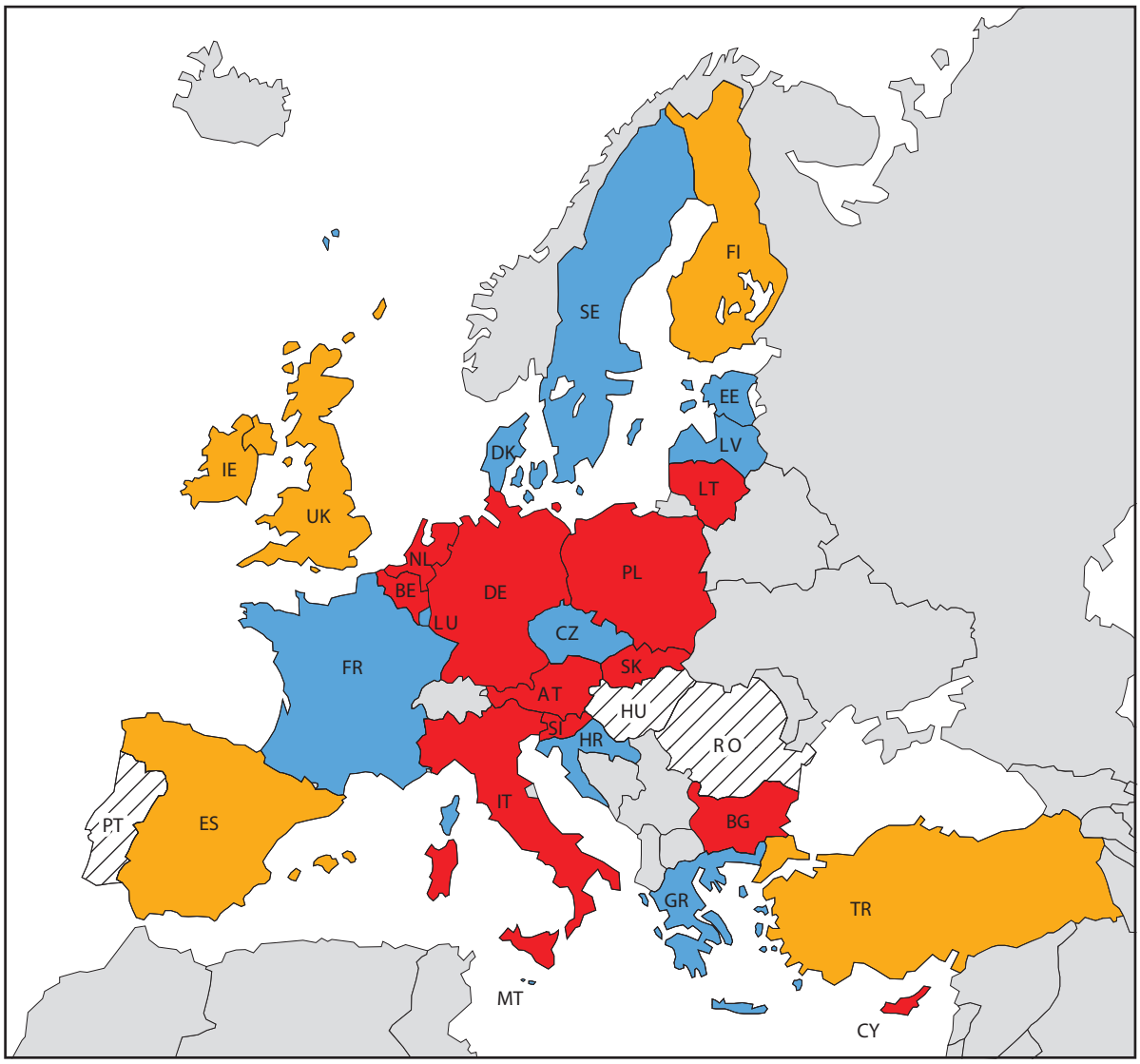
Figure 6 **Details of the measures taken**

Energy performance regulations for existing buildings



Regulations with minimum standards

Regulations without minimum standards

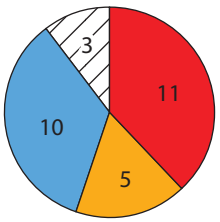
Absence of regulations

Not responding

N

0 1000 km

Number of countries per category



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Energy performance regulations for residential buildings

	For new residential Buildings	For the existing residential building stock
Austria	Construction regulation of the federal states (now correction and harmonization) during the installment of the EU building directive	Construction regulation of the Federal state (now correction and harmonization) during the installment of the EU building directive
Belgium	***Brussels capital-city*** Performance requirements concerning buildings (in case of new buildings or renovation) ***Flemisch region*** Introduction of minimum energy performance requirements from 01/01/2006 on ***Walloon region*** The Walloon regulations are about the heat insulation and the ventilation of buildings. It concerns housing, offices buildings and schools. It is intended for building construction, reconstruction and alterations requiring planning permission (« le permis d'urbanisme »). Concerning the heat insulation of new buildings, the applicant has a choice between accepting the K level (global heat insulation level) or a B emax value giving net energy requirements for the building heating not to be exceeded. In all cases, Kmax values for thermal transmission coefficients of walls or parts of walls of heat loss surfaces have to be respected. In case of alterations without allocation changes , Kmax values concern windows when frames are replaced and others parts causing thermal losses and which have been the purpose of changes or recontructions. The Kmax calculation is based on the NBN B62-002 standard. Concerning ventilation, requirements are also based on oxygene renewal flow (calculated according to the NBN D50-001 standard). Rated flow requirements are applied to the useful floor surface.	***Flemisch region*** Thermal insulation regulations
Bulgaria	ECHRB regulates the technical criteria for energy consumption and heating retention for Residential building - annually energy consumption for heating per square meters.	Every building can be certified in the order of ECB ordinance, but for public buildings \state or municipal property\ with common useful area above 1000 square meters, certification will be mandatory.
Croatia	Existing regulations determines the value of coefficient thermal transmittance	-

Cyprus	Cyprus Standard for Thermal Insulation in Buldings The implementation of the standard is not compulsory.	Cyprus Standard for Thermal Insulation in Buldings The implementation of the standard is not compulsory. Comments: However regulations are under preparation in line with the provisions of the Directive 200/91/EK on the energy performance of buildings.
Czech Republic	Act No. 406/2000 Coll., on Energy Management The Czech State Standard 73 0540 – Thermal Protection of Buildings	Act No. 406/2000 Coll., on energy management. Decree of the Ministry of Industry and Trade No. 213/2001 Coll., on detailed specification of energy audit requirements. Decree of the Ministry of Industry and Trade No. 291/2001 Coll., as amended by Decree No. 425/2004 Coll. on detailed specification of the utilization of energy efficiency at energy consumption in buildings.
Denmark	-	-
Estonia	-	-
Finland	The National Building Code of Finland, Parts: • C3 Thermal insulation in a building (regulations) • D2 Indoor Climate and Ventilation in Buildings (regulations and guidelines)	-
France	Combination between minimum energy performance requirements of components and a maximum rate of energy consumption depending on buildings type and theirs equipments. Requirements for summer comfort	-
Germany	EnEV – The decree for energy saving is limiting the need of primary energies per year as well as the specific lost of transmission warmth. On this occasion, the energy balance takes into account the quality of the constructional covering (the thermodynamic characteristica of the exterior components), the heating- and warm water supply facilities and also the offshore chains of the used energy source. At the construction of buildings an energy document has to be worked out that contains the most important results of the proof calculations. This document has to be presented to authorities, renters and other persons in case of demand.	EnEV – The decree for energy savings sets demands on components which have to be fulfilled in case of constructional measures. Moreover there are obligations of the owners to initiate special measures (so-called updating forces obligations) which have to be realized until a certain time. This concerns for example the putting out of commission of old heating boiler plants and the damming up of warm water water pipes in unheated rooms.

	On the basis of the Federal law on immission protection it has come into effect since 1997 the decree about small and middle heating installations which is limiting the beginning of work as well as the losses of waste gas of heating installation (also in residential buildings).	In case of special changes of the building and of the installation technique an energy document is necessary, as for the new buildings, if the results of the calculations are available. Heating charges V – The decree of heating charges contributes to the economic use with heating energy especially in houses divided into several flats. The rules of the law on immission protection contribute by the controls per year to the substitution of old heating installations through new ones.
Greece	-	-
Hungary	-	-
Ireland	Building Regulations Part L – Conservation of Fuel and Energy	Building Regulations Part L – Conservation of Fuel and Energy (for major renovations and window replacement)
Italy	Efficiency of building insulation Efficiency of heating boilers	In case of major restructuring, the same rules as for new buildings may apply
Latvia	Regulation on Latvia construction normative LBN 002 – 01 "Heat engineering of building delimitating constructions"	-
Lithuania	Regulation STR. 2.05.01.1999 Thermal Technique of Building Enclosures	Regulation STR. 2.05.01.1999 Thermal Technique of Building Enclosures For existing buildings - when reconstructed.
Luxembourg	Decree on warmth protection on the basis of minima U-values	-
Malta	-	-
Netherlands	Requirements contained in the Dutch Building Decree of 2003 with regard to energy performance of buildings and thermal insulation.	Requirements contained in the Dutch Building Decree of 2003 with regard tot thermal insulation.
Poland	Currently the thermal insulation requirements for buildings are regulated by the ordinance of the Minister of Infrastructure on technical criteria to be	All the above is applied but for the buildings undergoing thermo-modernisation and financed trough

	met by built structures and their localisation (2002). In case of a multi-family building or a collective residential building, the energy conservation requirements are fulfilled, if the value of the *E* factor, representing the computational demand for heat consumed by the building during the heating season is smaller than the upper limit value E_0. For a residential single-family house the energy conservation requirements are fulfilled, if: • the *E* factor value is smaller than the upper limit value E_0, or • the external walls meet the requirements of thermal insulation and other energy-saving requirements, specified in the annex to the resolution For a public utility building the energy conservation requirements are fulfilled, if the external walls meet the requirements of thermal insulation and other energy-saving requirements, specified in the annex to the resolution. The required values E_0 of the building seasonal heat demand factor depend on the building shape ratio *A/V*, and for residential and collective residence buildings amount to: • $E_0 = 29$ kW·h/(m^3·a) for $A/V = 0.20$, • $E_0 = 26.6 + 12\,A/V$ kW·h/(m^3·a), for $0.20 < A/V < 0.90$, • $E_0 = 37.4$ kW·h/(m^3·a), for $A/V = 0.90$, where: *A* – is the total surface area of all outer walls (including windows and balcony doors), roofs and floor-roofs, floors on ground, floors above unheated basements, floors above passages, which separate the building's heated section from ambient air, as measured along outer boundaries; *V* – is the cubic capacity of the building's heated section, computed according to the relevant Polish Standard, which sets out the procedures to compute the building's cubic capacity.	the Thermomodernisation Act the minimum additionally U value is more restricted and set to 0,25,
Portugal	-	-
Romania	-	-

Slovakia	-	The regulation, which is not legally binding, in the form of normative values according to the methodology of The Slovak Energy Agency for the verification of buildings operation economy according to the Act on Energy Industry (valid till 31.12.2004) for 55 construction systems, at which there is being prepared the takeover of Directive 2002/91/EC and standards connected with the preparation of said Directive.
Slovenia	Regulation on thermal insulation and efficient energy use in buildings of May 2002 Regulation on the ventilation and air-conditioning of buildings of May 2002	Regulation on thermal insulation and efficient energy use in buildings of May 2002
Spain	National basic Regulation NBE-CT79 still in force, but to be replaced soon by the new Technical Code of Buildings (CTE) which includes more stringent reduction of energy need measures regarding the thermal insulation of the envelope and the inclusion of compulsory use of renewable energy sources for HDW and in some non residential buildings the PV electricity production. Furthermore there is a regulation for Thermal services in buildings RITE in force since 1998 and currently under revision.	NBE CT-79 and RITE are also applicable in some cases in works carried out in exisnting buildings
Sweden	-	-
Turkey	TS 825 Regulations of Heat Insulation issued by Ministry of Public Works and Settlement in 2000.	This regulation partially covers the existing buildings.
United Kingdom	Part L of the Building Regulations and Approved Document L1 Conservation of fuel and power in dwellings	Part L of the Building Regulations and Approved Document L1 Conservation of fuel and power in dwellings

Table 10 – Characteristic energy value and diagnosis

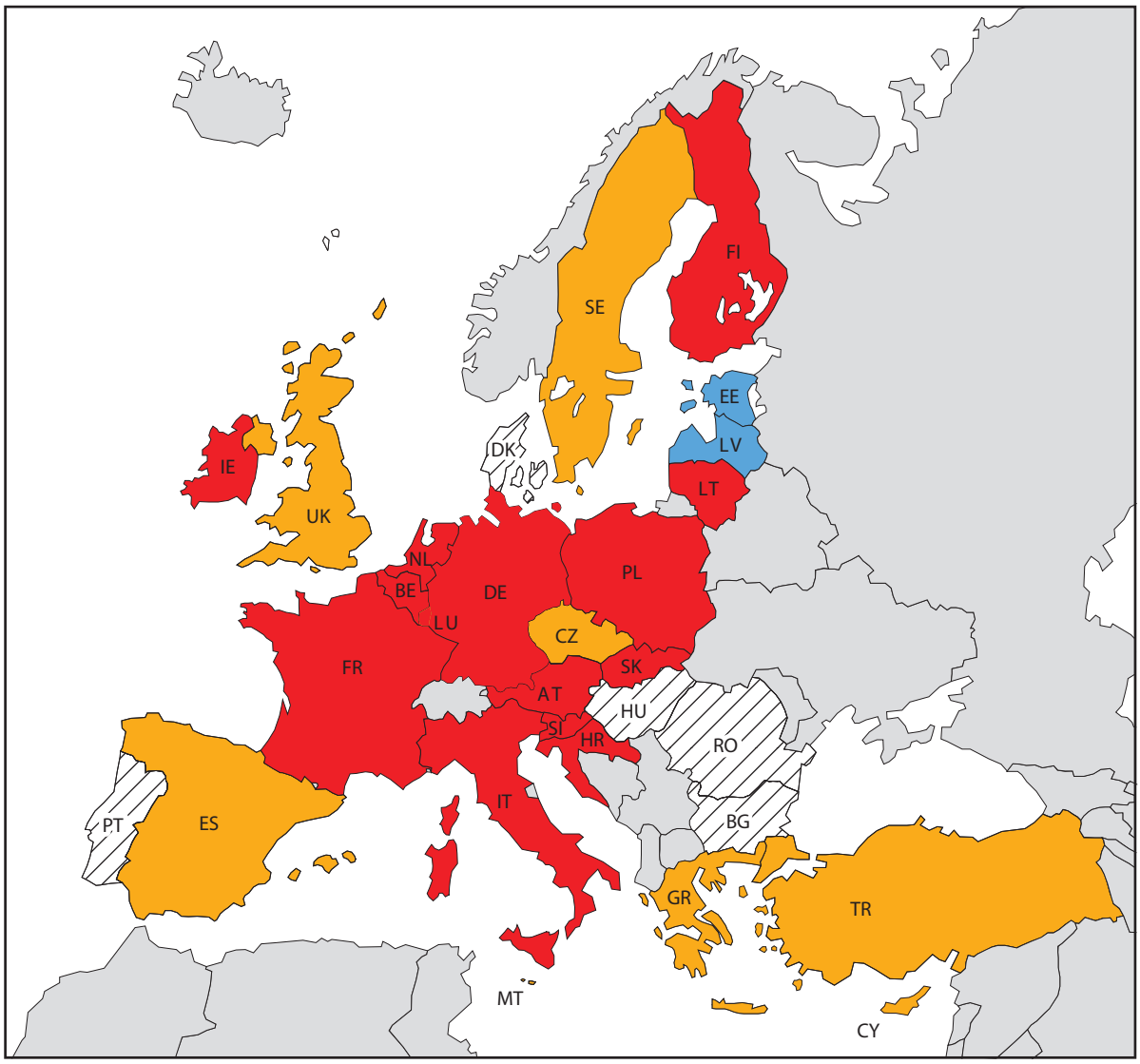
		Characteristic energy value		Energy diagnosis		Conditions of aplication (C/O/N)			
		For new buildings	For existing buildings	Made	Expected	When constructed	When renovated	When sold	When rented out
Old EU member states									
Austria	AT	0	0	1	0	-	-	-	-
Belgium	BE	0	0	1	0	N	O	O	O
Denmark	DK	1	1	0	0	-	-	-	-
Finland	FI	0	1	1	0	-	O	-	-
France	FR	0	0	1	0	N	N	N	N
Germany	DE	1	1	1	0	C	N	N	N
Greece	GR	0	0	0	1	-	-	-	-
Ireland	IE	1	0	1	0	C	C	C	C
Italy	IT	0	0	1	0	N	N	N	N
Luxembourg	LU	0	0	1	0	-	-	-	-
Netherlands	NL	-	-	1	0	C	C	-	-
Portugal*	PT								
Spain	ES	0	0	0	1	-	-	-	-
Sweden	SE	-	-	0	1	-	-	-	-
United Kingdom	UK	-	-	0	1	-	-	-	-
New EU member states									
Cyprus	CY	0	0	0	1	-	-	-	-
Czech Republic	CZ	1	1	0	1	C	C	-	-
Estonia	EE	-	-	0	0	-	-	-	-
Hungary*	HU								
Latvia	LV	-	-	0	0	-	-	-	-
Lithuania	LT	-	-	1	0	C	C	-	-
Malta	MT	-	-	0	1	-	-	-	-
Poland	PL	1	1	1	0	C	C	-	-
Slovakia	SK	1	1	1	0	C	C	-	-
Slovenia	SI	1	1	1	0	C	C	-	-
EU accession states									
Bulgaria	BG	1	0	0	0	-	-	-	-
Croatia	HR	1	1	1	0	C	C	-	-
Romania*	RO								
Turkey	TR	1	0	0	1	C	C	O	O

* Questionnaire not received

Note : C = Compulsory; O = Optional; N = Non-existent; 1 = Yes, 0 = No

Figure 7 **Details of the measures taken**

Energy performance diagnosis for residential buildings



Diagnosis made

Diagnosis expected

Neither made nor expected

Not responding

0 1000 km

Number of countries per category

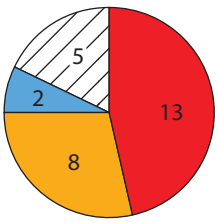


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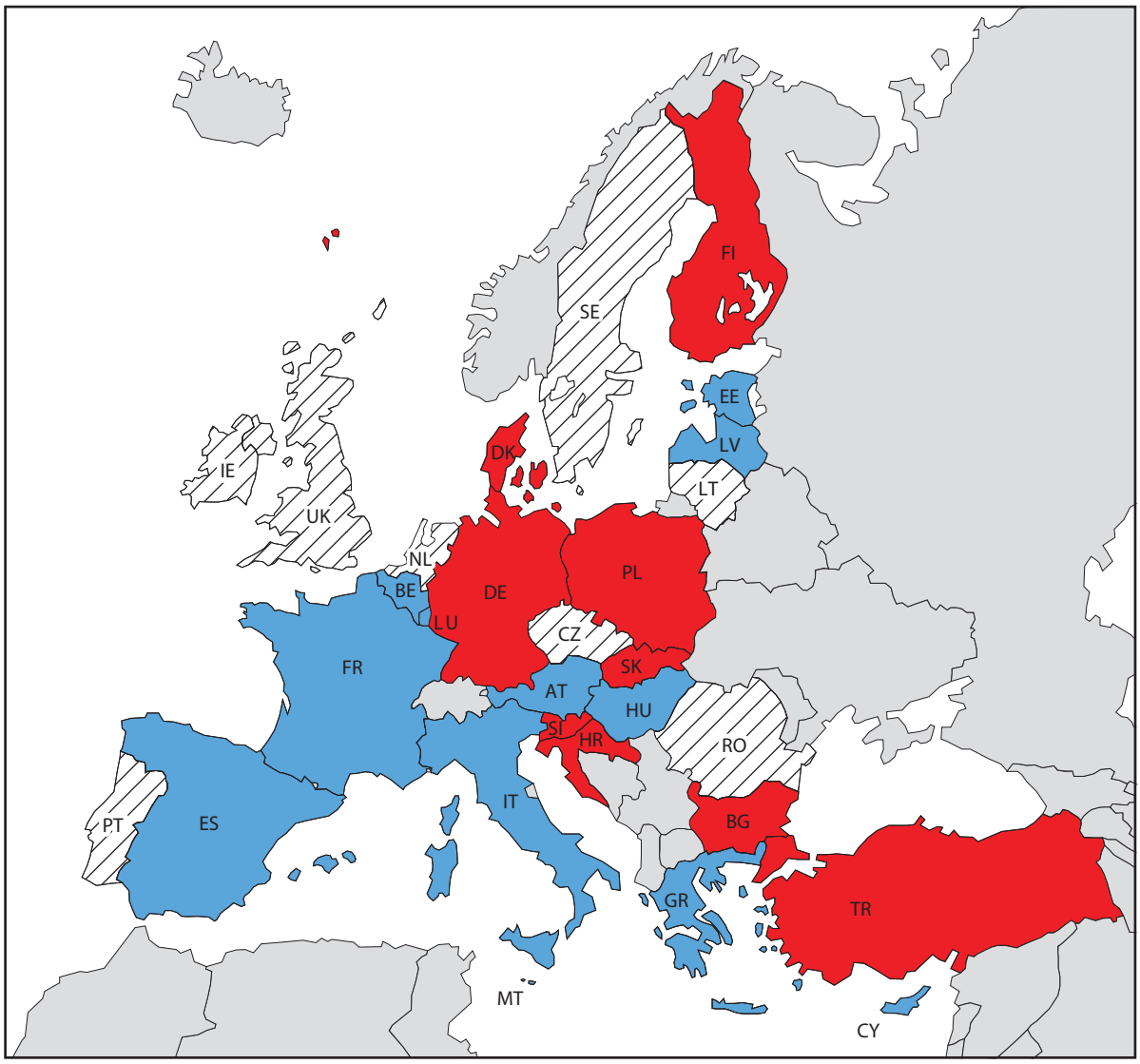
Figure 8 **Details of the measures taken**

Characteristic energy value



Existing

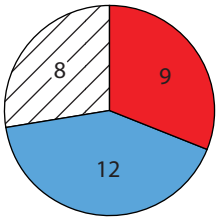
Missing

Not responding

N

0 1000 km

Number of countries per category



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Characteristic energy value

<table>
<tr><th></th><th>For new residential buildings</th><th>For the existing residential building stock</th></tr>
<tr><td>Austria</td><td>-</td><td>-</td></tr>
<tr><td>Belgium</td><td>-</td><td>-</td></tr>
<tr><td>Bulgaria</td><td>Maximum normative value of annually energy consumption for heating per 1m 2 useful housing area ($Q_{h\max} / A_u$) in relation from factor shape \ $f_0 = A/V_e$ \, (DD), and internal temperature above 19 °? are defined in table:
<table>
<tr><td rowspan="2">f_o, m^{-1}</td><td colspan="4">$Q_{h\max} / A_u$, kWh/m^2</td></tr>
<tr><td colspan="4">DD, K.d</td></tr>
<tr><td>2100</td><td>2500</td><td>2900</td><td>3300</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>= 0,2</td><td>50,0</td><td>51,8</td><td>54,0</td><td>56,5</td></tr>
<tr><td>0,3</td><td>55,4</td><td>57,3</td><td>59,4</td><td>61,9</td></tr>
<tr><td>0,4</td><td>60,8</td><td>62,7</td><td>64,8</td><td>67,3</td></tr>
<tr><td>0,5</td><td>66,2</td><td>68,1</td><td>70,2</td><td>72,7</td></tr>
<tr><td>0,6</td><td>71,6</td><td>73,5</td><td>75,6</td><td>78,1</td></tr>
<tr><td>0,7</td><td>77,1</td><td>78,9</td><td>81,1</td><td>83,6</td></tr>
<tr><td>0,8</td><td>82,5</td><td>84,3</td><td>86,5</td><td>89,0</td></tr>
<tr><td>0,9</td><td>87,9</td><td>89,7</td><td>91,9</td><td>94,4</td></tr>
<tr><td>1,0</td><td>93,3</td><td>95,1</td><td>97,3</td><td>99,8</td></tr>
<tr><td>= 1,05</td><td>96,0</td><td>97,84</td><td>100</td><td>102,5</td></tr>
</table></td><td>Technical criteria for energy consumption and heating retention for existing buildings is coefficients of thermal transmittance through a building envelope element.</td></tr>
<tr><td>Croatia</td><td>104</td><td>193</td></tr>
<tr><td>Cyprus</td><td>-</td><td>-</td></tr>
<tr><td>Czech Republic</td><td>90-100 (average)

Comments: Specific heat consumption for space heating e_v (expressed in kWh/m^3) determined relative to the ratio A/V (surface area of cooled structures divided into the heated volume of the building) is used in the Czech Republic to assess building quality; A/V varies between 0.2 and 1.0, e_v between 25.8 kWh/m^3 and 46.7 kWh/m^3.</td><td>190-230 (average)</td></tr>
</table>

Denmark	90	160
Estonia	-	-
Finland	-	145 Comments : The figure describes the energy consumption in existing buildings heated by district heating (without electricity)
France	It is not possible to define a single typical energy value for the calculation of energy performance. If we talk about the average energy consumption of all buildings, it is difficult to give a single value for two reasons: Firstly, there is a lack of precise and complete data series in France, secondly, there is a large diversity of buildings. Concerning, regulations thresholds, it is difficult to give a single value because thresholds are not necessarely the same for all type of buildings having to respect regulations. Within the framework of the thermal regulation reinforcement for new buildings of 2005, a maximum consumption value will have to be respected.	
Germany	Limitation of primary energy need dependent of the proportion surface-volume of the building, differenciated according 2 categories: • « Residential buildings with electric heating up of warm water » • « other residential buildings » Note: The calculation of the energy indicator is done according to technical rules. The essential rules for the calculation of the primary energy need are: • DIN 4108-6 for the calculation of the need of warmth • DIN V 4701-10 for the evaluation of the installation technique	Alternative demands in case of changes: • Single demands for new components (Limitation of the Warmth passing coefficient of outer components) <u>or</u> • Holistic proof (Overstepping of the demand for new construction of not more than 40%)
Greece	-	-
Hungary	-	-
Ireland	22 $A_t/V + 75$ Comments : Value is a function of building volume (V) and building fabric heat-loss area (A_t).	-

Italy	There is no unique value. For each new building, a technical report is required. This report calculates the Normalised Energy Requirement for heating, using a standardised procedure established by UNI (the Unification Body), which takes into account the climate of the place (in terms of degree-days), the surface-to-volume ratio, the destination of the building etc. The actual projected energy consumption expected for the building is then calculated, taking into account heat insulation, effect of windows, thermal bridges, the efficiency of the heating system, and free (solar) contributions; the projected consumption must not be higher than the Normalised Energy Requirement.	
Latvia	-	-
Lithuania	-	-
Luxembourg	-	-
Malta	-	-
Netherlands	-	-
Poland	E_0 = 80 kW·h/(m^3·a) for A/V = 0.20 E_0 = 75 + 34 A/V kW·h/(m^3·a), for 0.20 < A/V < 0.90 E_0 = 110 kW·h/(m^3·a), for A/V = 0.90 These numbers to be expressed in kWh per sq. m should be multiplied by about 2,8 E_0 = 29 kW·h/(m^3·a) for A/V = 0.20 E_0 = 26.6 + 12 A/V kW·h/(m^3·a), for 0.20 < A/V < 0.90 E_0 = 37.4 kW·h/(m^3·a), for A/V = 0.90 So E_0 = 80 kW·h/(m^2·a) for A/V = 0.20 E_0 = 75 + 34 A/V kW·h/(m^2·a), for 0.20 < A/V < 0.90 E_0 = 110 kW·h/(m^2·a), for A/V = 0.90	
Portugal	-	-
Romania	-	-
Slovakia	50 – 100 kWh/m^2 year	70 - 130 kWh/m^2 year
Slovenia	Approx. 70 Comments: Heat demand for space heating is limited.	Approx. 70

Spain	-	-
Sweden	-	-
Turkey	100-150 (average) Comments: These figures are for heating energy.	-
United Kingdom	-	-

Table 11 a – Existing regulations for equipments

		Heating			A/C			Ventilation		
		Standards	Labels	Inspections	Standards	Labels	Inspections	Standards	Labels	Inspections
Old EU member states										
Austria	AT	C	-	C	O	-	-	O	-	-
Belgium	BE	C/O	O	C	N	N	O	C	N	O/N
Denmark	DK	-	-	-	-	-	-	-	-	-
Finland	FI	C	N	O	N	C	N	C	N	N
France	FR	C	N	O	N	N	O	O	O	O
Germany	DE	C	O	C	N	O	N	C	O	O
Greece	GR	C	N	C	N	C	N	N	N	N
Ireland	IE	-	C	-	-	-	-	-	-	-
Italy	IT	C	N	C	N	C	N	N	O	N
Luxembourg	LU	C	O	C	C	O	C	N	N	N
Netherlands	NL	C	-	C	-	C	-	C	-	-
Portugal*	PT									
Spain	ES	-	C	C	N	-	-	N	-	-
Sweden	SE	-	-	-	-	-	-	-	-	C
United Kingdom	UK	C	-	-	-	-	-	-	-	-
New EU member states										
Cyprus	CY	C	C	N	O	C	N	N	N	N
Czech Republic	CZ	C	-	C	-	-	-	-	-	-
Estonia	EE	N	N	N	N	N	N	N	N	N
Hungary*	HU									
Latvia	LV	-	-	-	-	-	-	-	-	-
Lithuania	LT	C	N	N	N	C	N	N	N	N
Malta	MT	C	C	N	C	C	N	C	C	N
Poland	PL	C	-	C	C	-	C	C	-	C
Slovakia	SK	O	-	C	N	-	-	C	-	-
Slovenia	SI	C	N	C	N	C	N	N	N	C
EU accession states										
Bulgaria	BG	C	O	C	C	O	O	C	O	C
Croatia	HR	-	-	-	-	-	-	-	-	-
Romania*	RO									
Turkey	TR	C	N	C	N	N	N	N	N	N

* Questionnaire not received

Note : C = Compulsory, O = Optional, N = Non-existent

Table 11 b – Regulations for equipments (end)

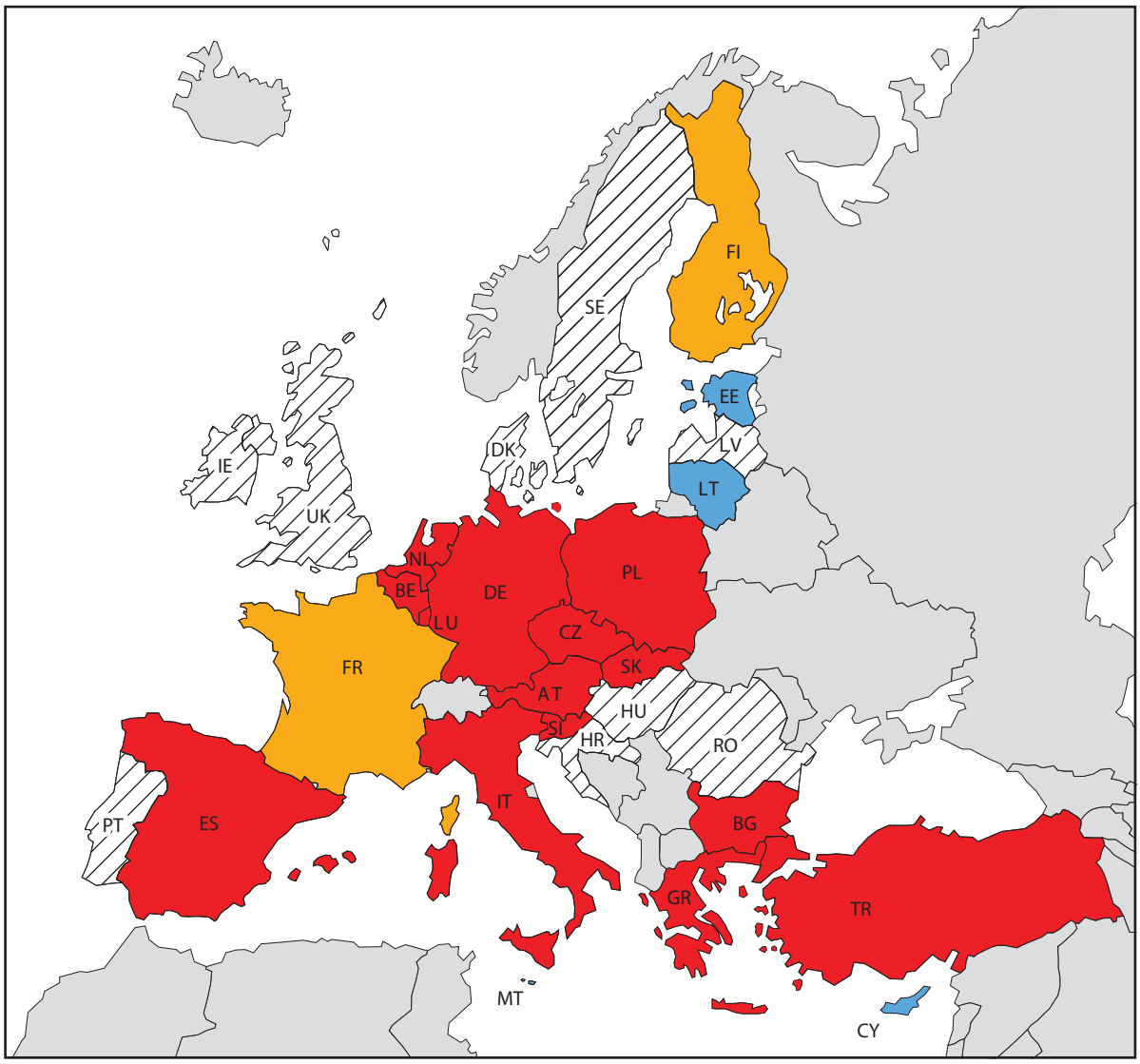
		Insulation			Lighting			Control (1/0)	Penalties (1/0)
		Standards	Labels	Inspections	Standards	Labels	Inspections		
Old EU member states									
Austria	AT	O	-	-	O	-	-	1	1
Belgium	BE	C	O	O	O	O	O/N	1	1
Denmark	DK	-	-	-	-	-	-	-	-
Finland	FI	C	N	N	N	C	N	1	1
France	FR	C	O	N	O	N	N	1	1
Germany	DE	C	O	O	N	O	N	1	1
Greece	GR	O	N	N	C	C	N	1	1
Ireland	IE	-	-	-	-	C	-	1	1
Italy	IT	C	N	N	N	N	N	1	1
Luxembourg	LU	C	N	N	O	N	N	1	1
Netherlands	NL	C	C	-	-	-	-	1	1
Portugal*	PT								
Spain	ES	C	-	-	C	-	-	1	1
Sweden	SE	-	-	-	-	-	-	1	1
United Kingdom	UK	-	-	-	-	-	-	-	-
New EU member states									
Cyprus	CY	N	O	N	C	C	N	1	1
Czech Republic	CZ	C	C	-	-	C	C	1	1
Estonia	EE	N	N	N	N	N	N	0	0
Hungary*	HU								
Latvia	LV	-	-	-	-	-	-	0	0
Lithuania	LT	N	N	N	C	N	N	-	-
Malta	MT	C	C	N	C	C	N	1	1
Poland	PL	C	-	-	N	-	-	1	1
Slovakia	SK	C	-	-	-	-	-	1	0
Slovenia	SI	C	O	C	N	C	N	1	1
EU accession states									
Bulgaria	BG	C	O	N	C	O	N	1	1
Croatia	HR	-	-	-	-	-	-	-	-
Romania*	RO								
Turkey	TR	C	N	C	O	C	N	1	1

* Questionnaire not received

Note : C = Compulsory; O = Optional; N = Non-existent; 1 = Yes, 0 = No

Figure 9 **Details of the measures taken**

Heating inspections



Compulsory

Optional

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Not responding

0 1000 km

Number of countries per category

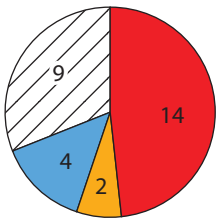

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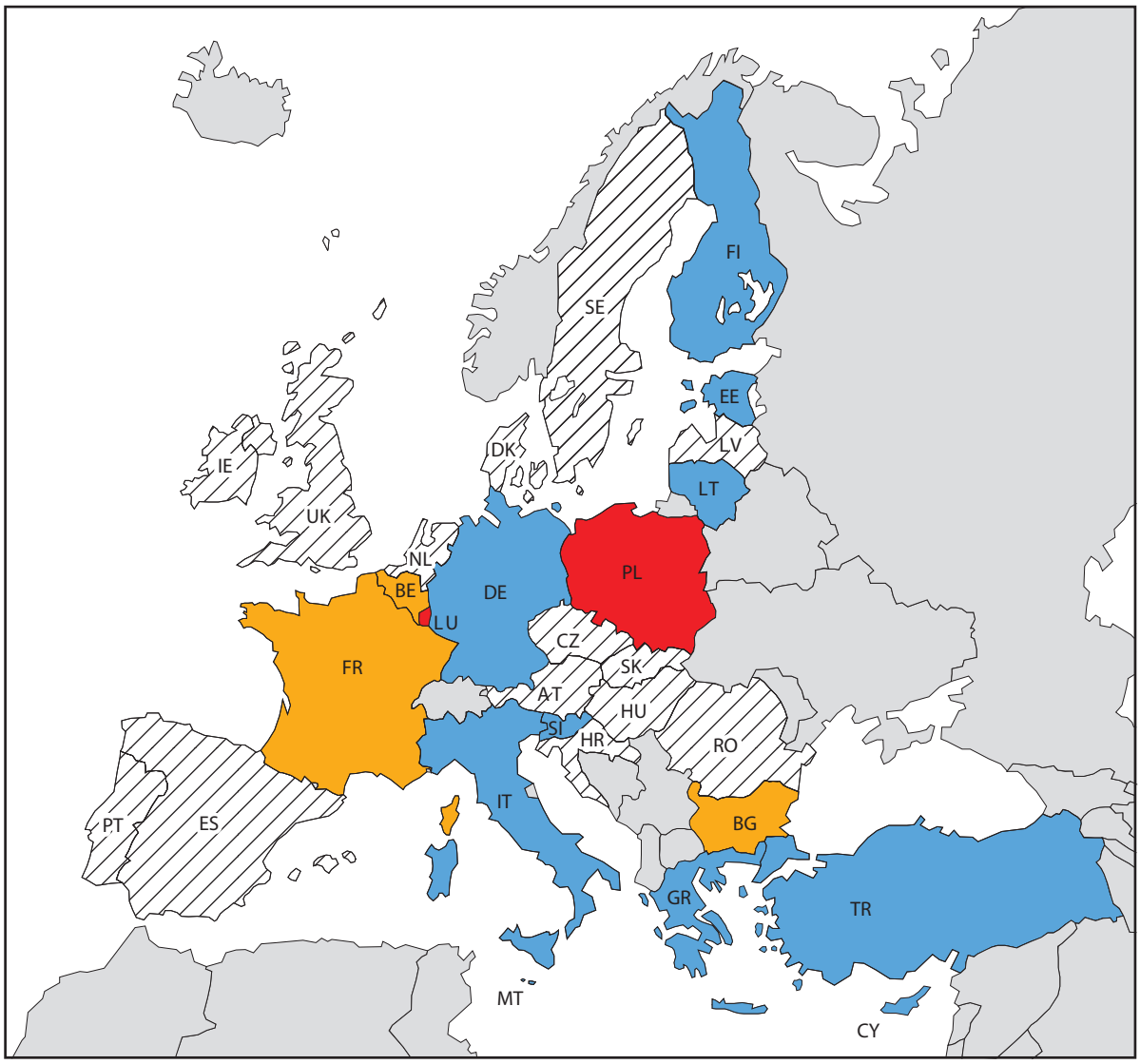
Figure 10 **Details of the measures taken**

Cooling system inspections



Compulsory

Optional

Missing

Not responding

0 1000 km

Number of countries per category

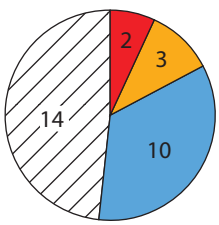


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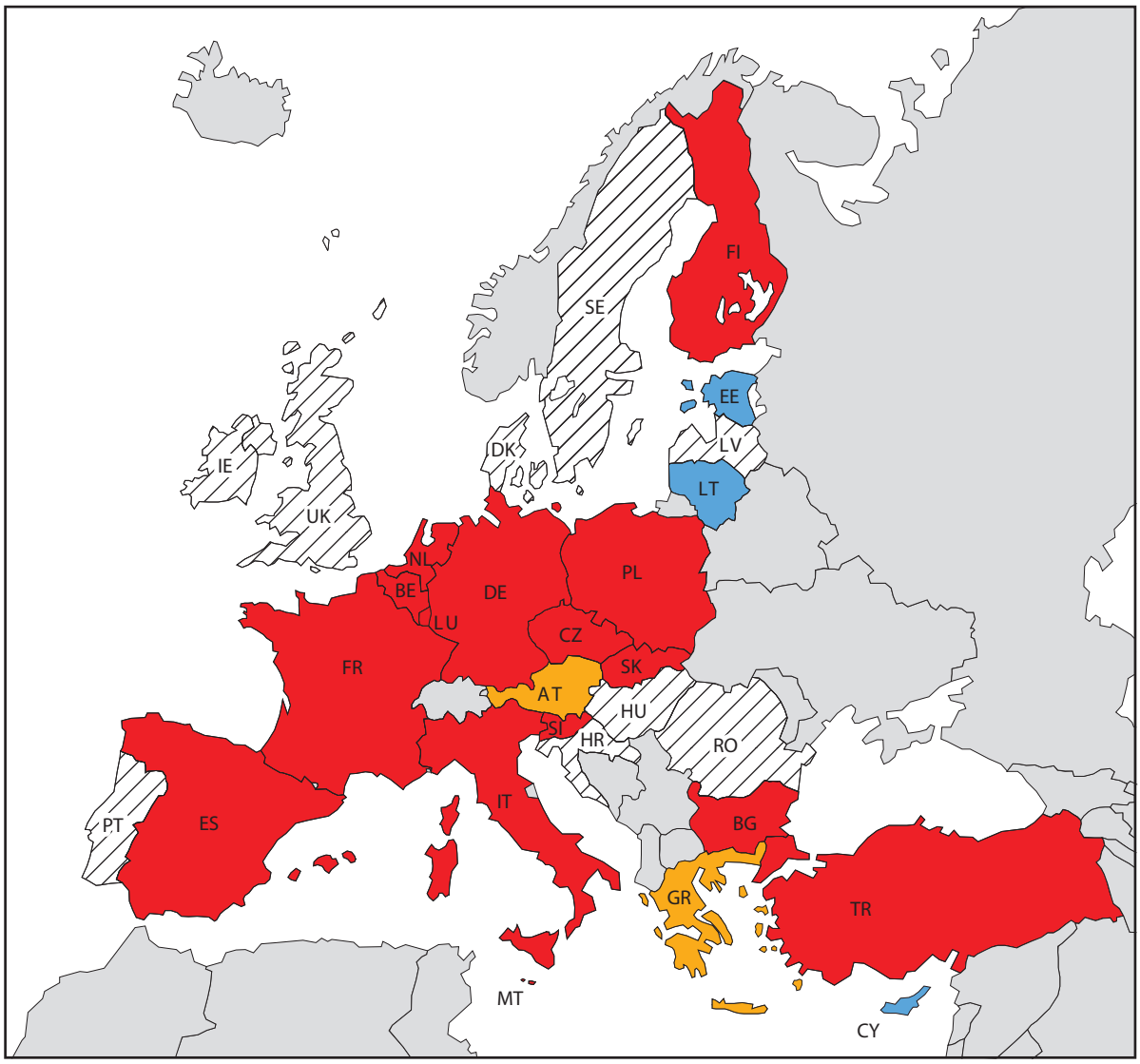
Figure 11 **Details of the measures taken**

Standards of insulation



Compulsory

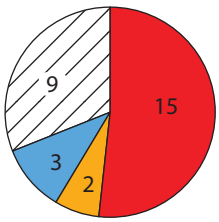
Optional

Missing

Not responding

0 1000 km

Number of countries per category



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II.5. Assistance to research and development

Table 12 – R&D programmes and pilot projects

		R&D programmes		Pilot projects	
		Energy consumption reduction	Renewable energy sources	Energy consumption reduction	Renewable energy sources
Old EU member states					
Austria	AT	1	1	1	1
Belgium	BE	1	1	0	0
Denmark	DK	-	-	-	-
Finland	FI	0	0	1	1
France	FR	1	1	1	1
Germany	DE	1	1	1	1
Greece	GR	1	1	0	0
Ireland	IE	1	1	1	1
Italy	IT	0	0	1	1
Luxembourg	LU	0	1	0	1
Netherlands	NL	0	1	0	0
Portugal*	PT				
Spain	ES	0	0	0	0
Sweden	SE	1	1	1	1
United Kingdom	UK	-	-	-	-
New EU member states					
Cyprus	CY	1	1	1	1
Czech Republic	CZ	1	1	1	1
Estonia	EE	0	0	0	0
Hungary*	HU				
Latvia	LV	1	1	1	0
Lithuania	LT	1	1	1	0
Malta	MT	0	0	1	1
Poland	PL	0	0	0	0
Slovakia	SK	1	1	1	0
Slovenia	SI	0	0	0	0
EU accession states					
Bulgaria	BG	1	0	1	0
Croatia	HR	1	0	1	0
Romania*	RO				
Turkey	TR	1	1	1	1

* Questionnaire not received
Note: 1 = Yes, O = No

R&D programmes in favour of energy consumption reduction

Austria	**Programme „House of the future“** The programme line „House of the future“ is based on important developments in the area of solar and energy-efficient construction and aims at to the emerging of model buildings through research and development projects which fulfil highest demands concerning energy efficiency, use of renewable energies and ecologic building materials and which guarantee high life quality at appropriate costs. The programme line includes projects in living and working constructions. The treated issues are energy efficiency and renewable energy, raw materials which are growing again, aspects of service and use and settling structures (see www.hausderzukunft.at).
Belgium	The **PIMENT II** call, targeting energy efficiency in housing and in building allocated for the service sector (2002-2003) The Walloon Region launched in 2002 a second call for innovative projects on energy control using new technologies (PIMENT) which purpose is the innovation in housing and in buildings allocated for the service sector (2002-2003). This call is for housholders, businesses and also research centres wishing to put in place an unusual concept or project or an innovative achievement to improve the energy efficiency of these types of buildings. Three main types of innovative projects are looked for: • Technology project (special equipements) • Technical projects (specific assembling, building conception…) • Energy management projects linked to behavioral consumptions (energy management, clarity of comsumptions…) There are also three types of supports which are expected depending on the maturity level and the type of projects expected: • Ideas to deepen : the funding of scientific support is secured • Ideas to develop – the funding depends on the project manager (100% for universities, 50% for businesses and even 70% for small and medium sized businesses • Competition with prizes for exemplary projects and achievements
Bulgaria	-
Croatia	-
Cyprus	-
Czech Republic	Under the Act the programme of industrial research and development "**IMPULS**" is devoted to R&D in the field of new materials, industrial products, manufacturing technologies, information and management products and technologies, energy savings, utilisation of non-traditional sources of energy, more effective use of energy sources and renewable energy sources. Research and development devoted to progressive methods, technologies and materials to increase the efficiency of energy utilisation focuses on creation of organisational tools, completion and verification of components and entire systems to raise efficiency of utilisation of energy and its renewable and secondary sources, including recycling of waste materials. Support may be also extended to co-operation in international R&D projects whose output can be made use of in the Czech Republic.

Denmark	-
Estonia	-
Finland	-
France	Since 2002, the « **Batiment 2010** » call From 2005 onwards, the **PREBAT** (research programme on energy and buildings) The details of implementation of the PREBAT programme are decided at the moment by the ADEME and the ministries in charge of research, infrastructures, ecology and energy, in connection with professionals. Technical improvements are required in the following themes: • Insulation with « clever » walls : fixed and mobil solar protection, highly efficient thermal insulator, activ coverings (walls and windows of vaious abilities…, stocking system, high inertia buildings, buildings with double ventilated covering. • Ventilation with low-consumption systems securing a high quality of oxygen inside the buildings without reducing the oxygen quality outside • Innovative heating and air conditioning systems (reversible heat pump with burried captors, radiant emission, cooling ceiling and floor…), passive refreshing systems (Provencal wells…) • Renewable energies : solar energy systems, windmills As the various components of a building interact with one another, only a global approach will enable to make a breakthrough when considering present achievements. This approach will require taking into consideration all the construction steps: • The conception of a « sustainable development architecture » • The producing and the assembling oof the main materials • The behaviour of occupants. It is this global approach which will enable e real breakthrough • The reduction of the processes costs The PREBAT programme will have a multiannual budget (5 M€ in 2005, 10 M€ in 2006 and 15 M€ from 2007 onwards). Two main programmes will be identified: • The sustainable modernization of existing buildings. Beyond technological improvements, actions on building construction imply a specific work concerning the adaptation to typologies of existing buildings. • Towards new buildings using positive energy : the research effort must target the generation of buildings put in place after the 2005 RT. The objective is to reach, in 10 years time, a significant proportion of highly efficient building (using 2 to 3 times less energy than today and producing a part of their energy) and in a more long-term future a significant proportion of buildings using positive energy.
Germany	Promotion concept: • EnSan – Energetic improvement of the construction substance (www.ensan.de) • EnBau – Energetically optimized new buildings (previously: www.solarbau.de)
Greece	-
Hungary	-

Ireland	A number of projects with innovative design and technology (including renewable energy) features aiming for energy and CO_2 reductions of over 50% relative to current Building Regulations practice have been approved. Such projects can help to influence market change and inform future policy options.
Italy	-
Latvia	-
Lithuania	Design of container boiler-room (capacity from 0,25 MW up to 0,6 MW). It is a portable boiler-room intended for heating of residential, industrial constructions and for preparation of hot water. Container boiler-rooms are produced by Joint Stock Company "Kazlu Rudos metalas". Here is a successful example of their use: container boiler-rooms fired by wood waste with capacity of 600 kW together with solar collectors installed in children's sanatorium "Žibute" in Kacergine satisfy all needs of heating, conditioning and hot water preparation. Computer program evaluating influence of solar radiation and internal heat emission for energy performance certificate of a building and calculation of heat loses has been created.
Luxembourg	-
Malta	-
Netherlands	-
Poland	-
Portugal	-
Romania	-
Slovakia	Slovak Hydro-meteorological Institute, within the framework of programme of research “Impact of construction materials and structures to quality of life – Modelling of climatic conditions in yearly cycle”, has worked out according to several requirements: • Territorial and temporal division of sun radiation, • Day-grades, taking into account the course of air temperature in last period with the determination of number of heating days, • Static and dynamic effects of wind. At the processing there were used 50 – 100 year data of the Slovak Hydro-meteorological Institute, and they shall be used in the national appendices of the European Harmonized Standards to the calculation of integrated energy economy of buildings (Directive 2002/91/EC).

Slovenia	Project: “Sustainable multi-apartment buildings”, on-going Content: alternative typologies, selection of building technologies and materials, low energy consumption, proposals for best practice examples. Co-financing: Housing Fund of the Republic of Slovenia
Spain	-
Sween	-
Turkey	-
United Kingdom	-

R&D programmes in favour of the use of renewable energy sources

Austria	**Programme „House of the future“** (mentioned before) and **Programme „Energy systems of the future**“ The Ministry for Traffic, Innovation and Technology has the intention to set essential innovation stimuli for the Austrian economy through lastingness-oriented development by the impulse programme „Nachhaltig Wirtschaften“ (Manage effectively) in order to support a structural change in direction of an eco-efficient management through research, technological development, demonstration and measures for preparation.
Belgium	-
Bulgaria	-
Croatia	-
Cyprus	-
Czech Republic	See R&D programmes in favour of the reduction of energy consumption
Denmark	-
Estonia	-
Finland	-
France	See R&D programmes in favour of the reduction of energy consumption
Germany	**Solarthermics 2000** and **Solarthermics 2000 plus** for pilot- and demonstration installations for the warming up of drinking water and heating support with accompanying measure program as well as research for the thermodynamic use of solar energy in low temperature area especially for residential buildings (see www.solarthermie2000plus.de)
Greece	-
Hungary	-
Ireland	-

Italy	-
Latvia	-
Lithuania	-
Luxembourg	In the North of the country, a chop wood shredding machine which heats an urban settlement by long-distance heating was initiated and subsidized by the Ministry of Agriculture. This experimental machine provides data about the efficiency of such a system (ecologically and economically).
Malta	-
Netherlands	-
Poland	-
Portugal	-
Romania	-
Slovakia	-
Slovenia	-
Spain	-
Sweden	-
Turkey	-
United Kingdom	-

Pilot projects in favour of energy consumption reduction

Austria	-
Belgium	The Walloon Minister Andre ANTOINE is in charge of housing and energy since July 2004. At many occasions, he has announced he was in favour of a greater synergy between these two themes, especially with a view of implementing the "energy performance" directive. The actions program of the energy fund 2005-2007 which has been approved by the Walloon government recently (during its sitting of the 24th of February 2005), tends to promote a new dynamic for the energy policy of the Region. This ambitious program which has received a budget of 100 millions euros, tends to reorganised the financial supports in favour of a better energy use (previously detailed) and a dynamic increasing the awareness of both the public and the operators. Concerning householders, financial supports for the removal of single glazing and the installation of gaz-fired boiler are confirmed, but the support limits have been extended. Legal entities and self-employed workers can have new grants (insulation and management of electrical fittings) New financial helps are available for the social housing sector to replace electrical heating with natural gas heating system or a cogeneration system or another type of renewable energy (eg.: firewood): a support ranking between 50 and 100% of the cost is available for: the initial audit of the building, the total installation and connection to the gas network Studies and experimental actions concerning renewable energy are also planned : - the creation of tools to promote renewable energy sources and high quality cogeneration installations - Support for communication or innovative projects Finally, new actions in terms of communication will be started : - The preparation for the changes of the « Energy perfomance » directive - URE experimental projects in schools This actions program will start the 1st of March 2005. The Walloon householders and self-employed workers concerned will receive an information leaflet in March.
Bulgaria	-
Croatia	-
Cyprus	According to studies of the Town Planning and Housing Department of the Ministry of Interior carried out in cooperation of the committee of Energy of the Ministry of Industry and Commerce on a pilot project comprised of is a small residential area of 15 to 20 houses designed in accordance with the Bioclimate Architecture and using different renewable energy sources. Specific measurements such as the initial cost, the time of depreciation as well as the efficiency are taken in account.

Czech Republic	Low-energy house Sušice; Revitalisation of high-rise buildings - Brno - Nový Lískovec; Build-up of low-energy family houses, as part of co-operation with Netherlands, Svitavy; Winning projects of the contest "Energy Project" organised by the Ministry of Industry and Trade - ABF a.s. web site, Stavební listy bulletin;
Denmark	-
Estonia	-
Finland	ClimBus (business opportunities in mitigating climate change). From 2004 to 2008. Developping new products that help to reduce greenhouse gas emissions.
France	• The development of electrochrome glazing • The development of silica glazing • The developement of insulating panels under vacuum
Germany	More than 20 building construction companies participate with small and big houses divided into several flats at the pilot project „Low energy houses in the stock" which is handled by the „Deutsche Energie-Agentur" (German Energy Agency. • New construction: Factory zero emission of the company Solvis, Braunschweig • Modernization: Old-age home of Sonneberg,, Stuttgart
Greece	-
Hungary	-
Ireland	-
Italy	-
Latvia	-
Lithuania	Housing Agency via regional subdivisions providing technical administration of Energy. Efficiency Housing Pilot Project (EEHPP) since 1997. EEHPP are administrated by Central Project Management Agency. The pilot project aims at supporting private initiative in improving housing maintenance and investing in energy efficiency measures. During the implementation of this project: • Energy efficiency measures were implemented in multi-apartment buildings using technically and economically attractive energy efficiency packages; • Private energy consultants' services on housing renovation issues were developed; • A system of assistance, provided through the regional subdivisions of Housing Agency, to customers – multi-apartment building owners preparing and implementing projects was developed.

	In the project participated more than 1.300 Homeowners Associations. They prepared more than 800 investments proposals. More than 700 Homeowners Associations, with investments exceeding LTL 70 million were completing renovations works of various scope within the framework of EEHPP Housing Agency providing: • Technical, financial and economic appraisal of energy efficiency projects • Energy audits of residential multi-apartment buildings proposed for investment and related investment projects • Assistance to Homeowners' Associations in organising procurement of works • Monitoring and control of implementation of investment projects • Conducting post-implementation monitoring of investment projects Major results of EEHPP: • Average comfort adjusted savings of 25 % • Annual savings in all renovated multifamily buildings are around 23 GWh worth US$ 0.7 - 0.8 million • Annual reduction of CO2 emissions of 8,500 tons • Average simple payback period for 100 monitored buildings amounted to 10.5 years • More than 60 percent out of 250 surveyed households indicated that loan repayment represents an insignificant or negligible burden on their family budgets
Luxembourg	Experimentation buildings which stocks by solar installations in summer energy in water and earth reservoirs in order to cover in winter the need for heating. The need of power is covered by a photo voltaic installation. The building is used as a centre for training in the energy sector.
Malta	The Institute for Energy Technology (IET-UM) is conducting surveys on energy consumption by appliances in residential buildings to educate University students. Energy audits of two hotels have also been carried out A research project on measuring the thermal performance of a building is underway at the IET-UM.
Netherlands	-
Poland	-
Portugal	-
Romania	-
Slovakia	-
Slovenia	-
Spain	-

Sweden	Combined solar heating and electricity devices.
Turkey	The joint work of Turkish Administration of Electricity Affairs (EIE) and GTZ (German Technical Cooperation Agency) in Erzurum (one major city in the East Anatolia) on “Increasing Energy Efficiency in the buildings in Erzurum” which started in November 2002.
United Kingdom	-

Pilot projects in favour of the use of renewable energy sources

Austria	-
Belgium	-
Bulgaria	-
Croatia	-
Cyprus	-
Czech Republic	• High-rise building Stráž pod Ralskem – heat pumps water/water 190 kW, Stráž pod Ralskem • Installation of solar panels for hot water production in reconstructed panel houses, Orlová Lutyne
Denmark	-
Estonia	-
Finland	-
France	-
Germany	• Demonstration project for the solar thermic heating up of used water, residential building (Gagarin Ring Erfurt) • Solar support of near distance heating Badener Hof Heilbronn with 170 MWh/a utility warmth
Greece	-
Hungary	-
Ireland	-
Italy	-

Latvia	-
Lithuania	-
Luxembourg	In the North of the country, a chop wood shredding machine which heats an urban settlement by long-distance heating was initiated and subsidized by the Ministry of Agriculture. This experimental machine provides data about the efficiency of such a system (ecologically and economically
Malta	Technical evaluations of installed solar water heaters in residential buildings are underway to identify common problems of installation and use affecting the performance. Individual advice is given to each participant. The IET-UM has installed three photovoltaic systems – two on residential buildings totalling 3.8 kWp. The systems are continuously monitored.
Netherlands	-
Poland	-
Portugal	-
Romania	-
Slovakia	-
Slovenia	-
Spain	-
Sweden	-
Turkey	A new project intending the use of wind energy In Izmir (a major city in West Anatolia, in the Aegean Region).
United Kingdom	-

III. EVALUATION OF THE POLICIES

III.1. Instruments of evaluation

III.2. Information about the evaluation of the policies

III.1. Instruments of evaluation

Table 13 – Existence of instruments of evaluation

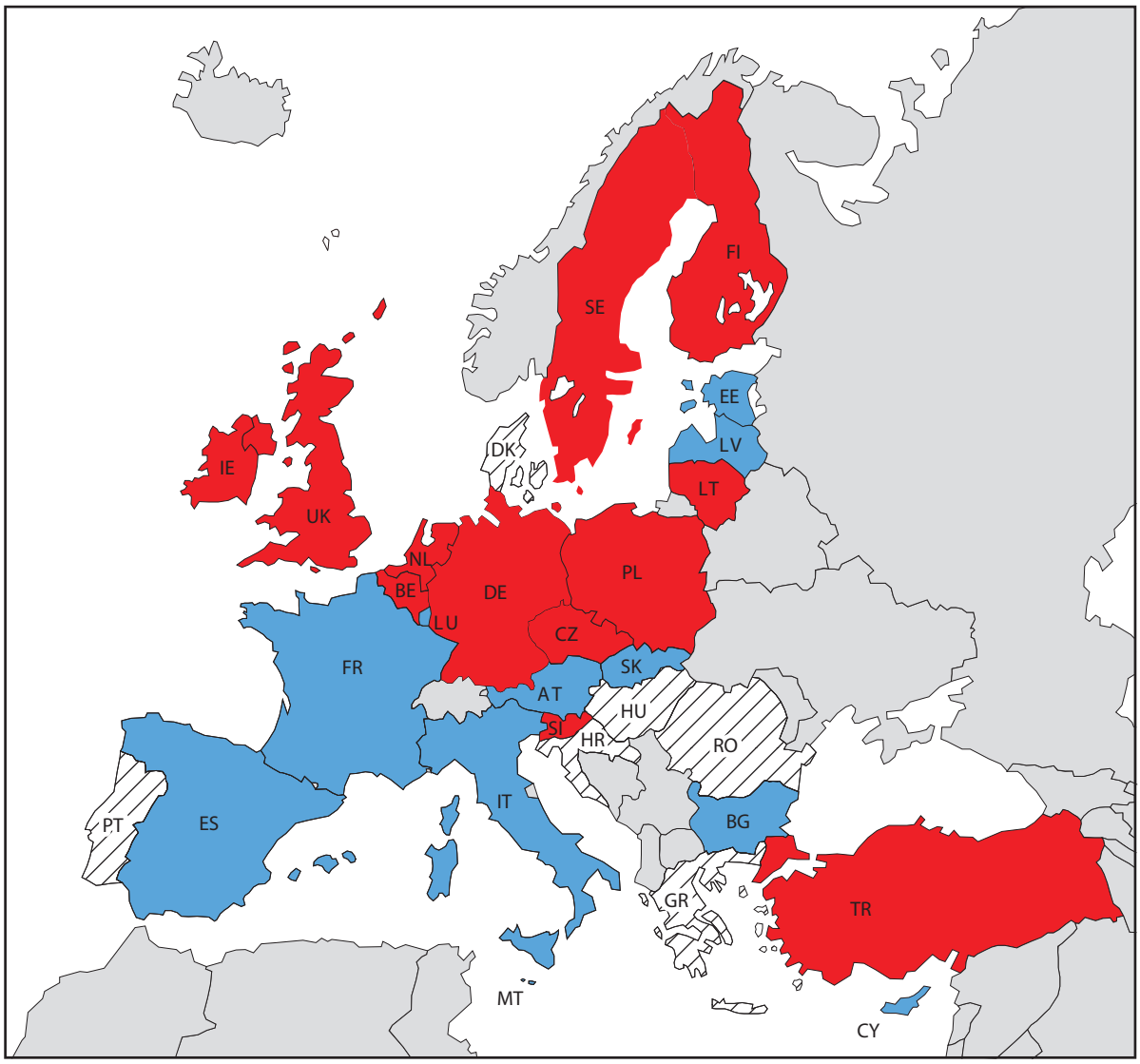
		Existence of instruments	Specifications
Old EU member states			
Austria	AT	0	
Belgium	BE	1	Indicators, energy assessments
Denmark	DK		
Finland	FI	1	Analysis programme for energy consumption of the building stock
France	FR	0	
Germany	DE	1	
Greece	GR		
Ireland	IE	1	Reviews
Italy	IT	0	
Luxembourg	LU	0	
Netherlands	0L	1	Monitoring, evaluations
Portugal*	PT		
Spain	ES	0	
Sweden	SE	1	Budget assessments, specific evaluations
United Kingdom	UK	1	Monitoring, implementation surveys
New EU member states			
Cyprus	CY	0	
Czech Republic	CZ	1	Software modelling tools, catalogue of m easures
Estonia	EE	0	
Hungary*	HU		
Latvia	LV	0	
Lithuania	LT	1	Monitoring
Malta	MT	0	
Poland	PL	1	Expert valuations
Slovakia	SK	0	
Slovenia	SI	1	Evaluation of subsidy scheme
EU accession states			
Bulgaria	BG	0	Certification, passeport registration
Croatia	HR		
Romania*	RO		
Turkey	TR	1	Statistical surveys, evaluations

* Questionnaire not received

Note: 1 = Yes, O = No

Figure 12 **Follow up and evaluation of the policies**

Existence of instruments of evaluation



Yes

No

Not responding

0 1000 km

Number of countries per category

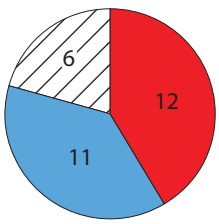


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Table 14 – Calculation of the potential of reduction of CO_2

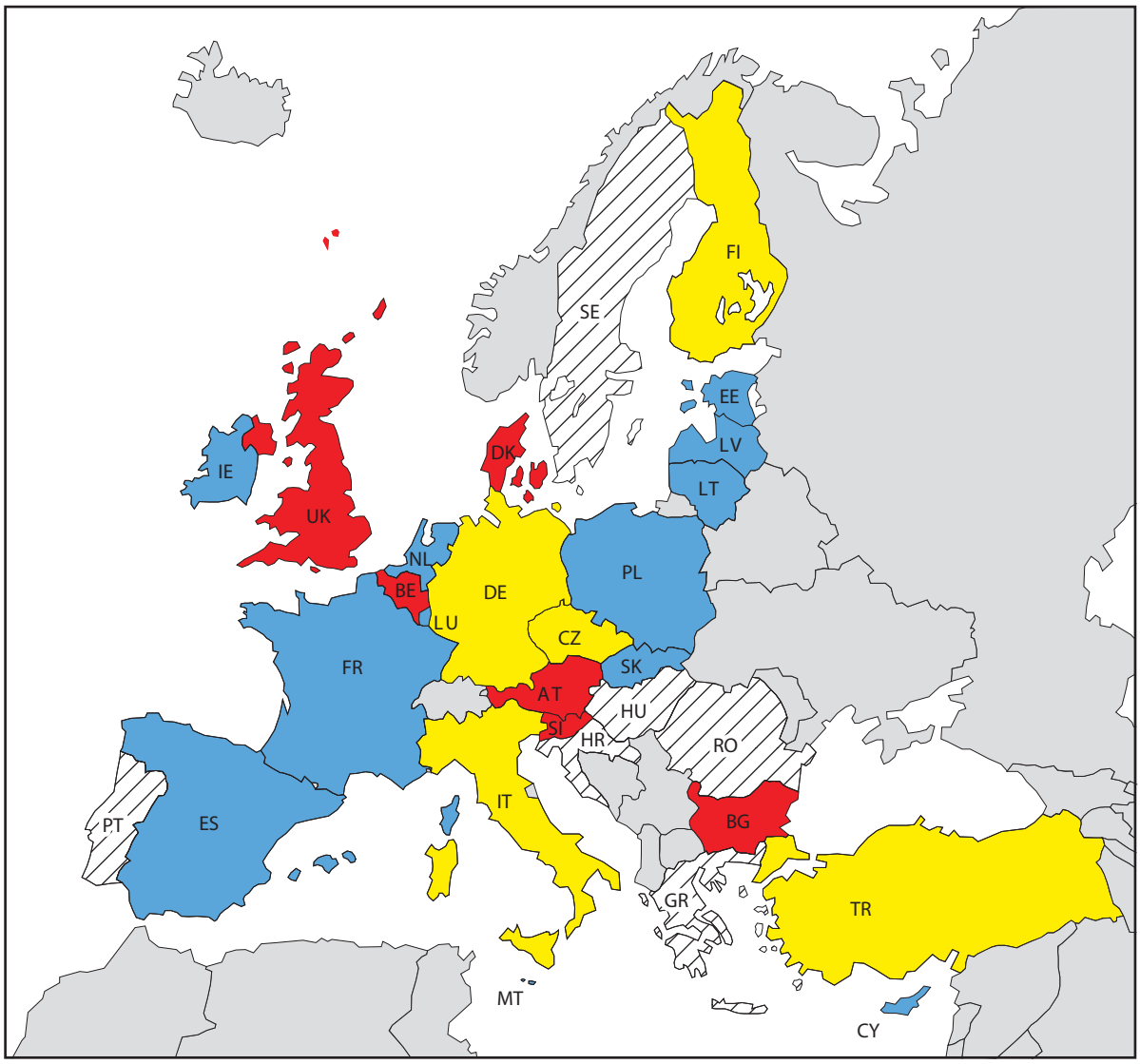
		Existence of an instrument	Integration of a building typology
Old EU member states			
Austria	AT	1	1
Belgium	BE	1	1
Denmark	DK	1	1
Finland	FI	1	0
France	FR	0	0
Germany	DE	1	0
Greece	GR	-	-
Ireland	IE	0	-
Italy	IT	1	-
Luxembourg	LU	0	-
Netherlands	0L	0	-
Portugal*	PT		
Spain	ES	0	-
Sweden	SE	-	-
United Kingdom	UK	1	1
New EU member states			
Cyprus	CY	0	-
Czech Republic	CZ	1	0
Estonia	EE	0	-
Hungary*	HU		
Latvia	LV	0	-
Lithuania	LT	0	-
Malta	MT	0	-
Poland	PL	0	-
Slovakia	SK	0	-
Slovenia	SI	1	1
EU accession states			
Bulgaria	BG	1	1
Croatia	HR	-	-
Romania*	RO		
Turkey	TR	1	-

* Questionnaire not received

Note: 1 = Yes, O = No

Figure 13 **Follow up and evaluation of the policies**

Evaluation of the potential of reduction of CO_2 emissions in the housing sector



Statistical tool integrating a typology of buildings

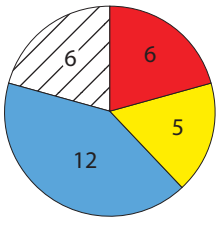
Statistical tool without a typology of buildings

No statistical tool

Not responding

0 1000 km

Number of countries per category



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III.2. Information about the evaluation of the policies

Table 15 – Presence of statistics

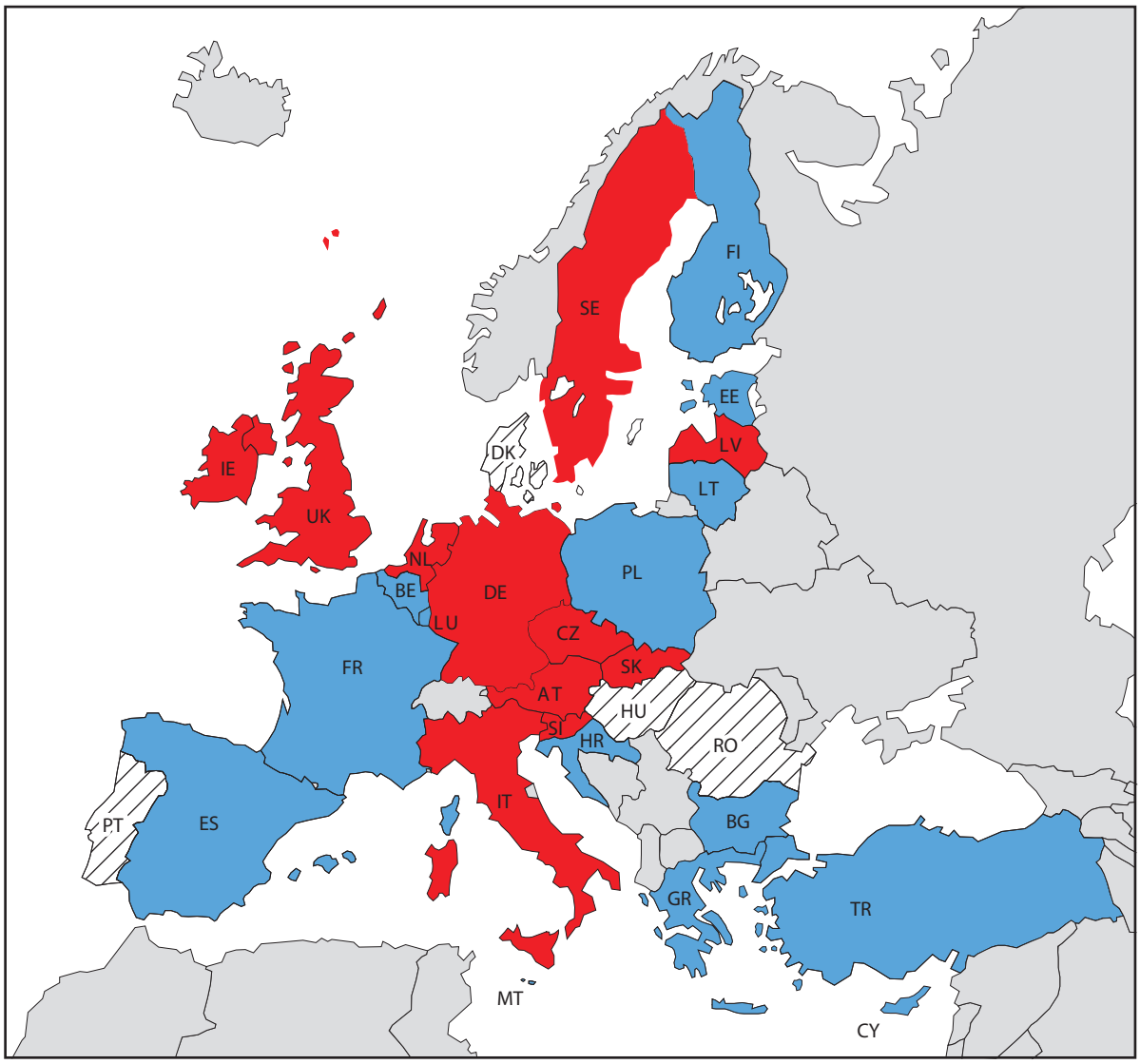
		Statistics on professionals trained	Data on cost efficiency
Old EU member states			
Austria	AT	0	1
Belgium	BE	0	0
Denmark	DK	-	-
Finland	FI	0	0
France	FR	0	0
Germany	DE	1	1
Greece	GR	1	0
Ireland	IE	0	1
Italy	IT	0	1
Luxembourg	LU	0	0
Netherlands	NL	0	1
Portugal*	PT		
Spain	ES	0	0
Sweden	SE	0	1
United Kingdom	UK	0	1
New EU member states			
Cyprus	CY	0	0
Czech Republic	CZ	1	1
Estonia	EE	0	0
Hungary*	HU		
Latvia	LV	0	1
Lithuania	LT	0	0
Malta	MT	0	0
Poland	PL	1	0
Slovakia	SK	0	1
Slovenia	SI	1	1
EU accession states			
Bulgaria	BG	0	0
Croatia	HR	0	0
Romania*	RO		
Turkey	TR	0	0

* Questionnaire not received

Note: 1 = Yes, O = No

Figure 14 **Follow up and evaluation of the policies**

Cost efficiency of the state measures taken to reduce CO_2 emissions



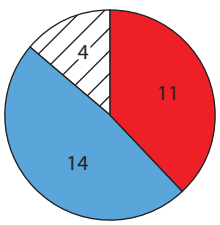
Data avalaible

Data missing

Not responding

0 1000 km

Number of countries per category



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IV. GENERAL DATA ON HOUSING

IV.1. Population and households

IV.2. Type of housing

IV.3. Age of the housing stock

IV.4. Type of heating

IV.5. Energy used for heating

IV.1. Population and households

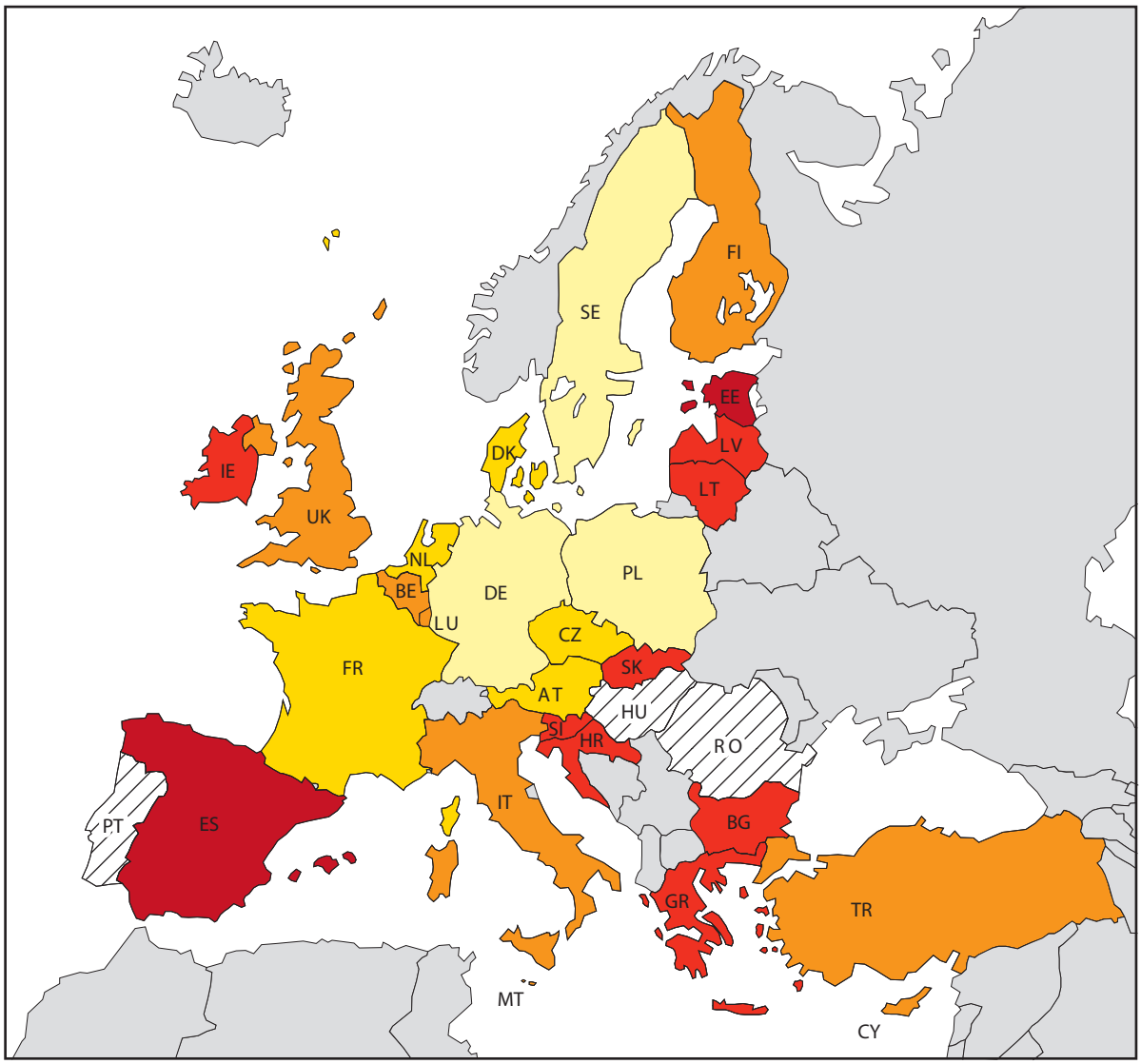
Table 16 – General data on population and tenure (% of households)

		Population	Household	Average size	% owner	% tenant	% other
Old EU member states							
Austria	AT	7 943 705	3 339 663	2,4	49	40,3	10,7
Belgium	BE	10 396 421	4 402 307	2,4	68	30,4	1,6
Denmark	DK	5 397 640	2 475 982	2,2	51	49	0
Finland	FI	5 219 732	2 378 079	2,2	63,1	33,4	3,5
France	FR	59 342 000	24 525 000	2,4	56	37,9	6,1
Germany	DE	82 502 000	38 944 000	2,1	41,3	56,6	2,1
Greece	GR	10 934 097	3 664 392	3	75,7	20,4	3,9
Ireland	IE	3 770 742	1 279 617	2,9	77,4	17,9	4,6
Italy	IT	57 980 000	25 600 000	2,3	68	25	7
Luxembourg	LU	439 539	171 953	2,6	67,2	25,7	7,1
Netherlands	NL	16 258 000	6 996 000	2,3	55	45	0
Portugal*	PT						
Spain	ES	40 964 244	14 270 700	2,9	92,3	7,7	0
Sweden	SE	9 011 392	4 449 000	2	41,5	54	4,5
United Kingdom	UK	59 554 000	25 284 600	2,4	71,8	28,2	0
New EU member states							
Cyprus	CY	730 400	238 800	3	68	13,8	18,2
Czech Republic	CZ	10 230 000	3 827 700	2,6	47	46	7
Estonia	EE	1 347 000	618 500	2,2	95,8	2,6	1,6
Hungary*	HU						
Latvia	LV	2 331 500	915 400	2,6	76,9	23	0,1
Lithuania	LT	3 544 857	1 356 826	2,6	86	14	0
Malta	MT	385 630	127 970	3	74,1	22,4	3,5
Poland	PL	38 230 000	13 337 000	2,9	42,5	31,2	26,3
Slovakia	SK	5 379 455	2 071 743	2,6	76,2	10,5	13,3
Slovenia	SI	1 964 036	684 847	2,8	82,2	8,8	9
EU accession states							
Bulgaria	BG	7 876 210	2 913 193	2,7	89,8	9,2	1
Croatia	HR	4 355 359	1 455 116	3	84,1	7,1	8,8
Romania*	RO						
Turkey	TR	65 195 465	16 744 495	4,1	72	22	5

* Questionnaire not received

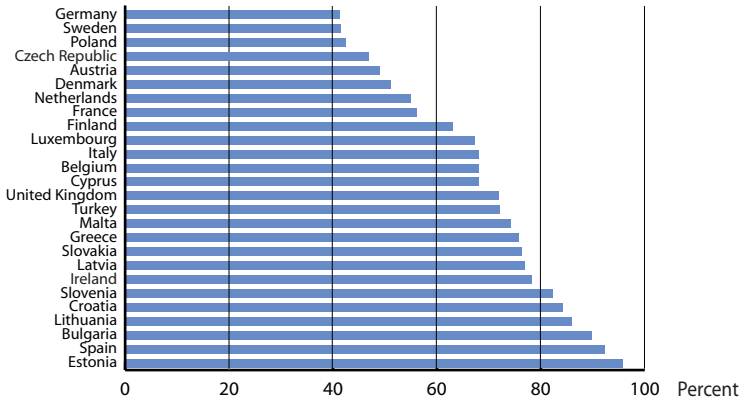
Figure 15 **General data on housing**

Owner occupied dwellings



Owner occupied dwellings (%)

- < 45
- 45 - 59
- 60 - 74
- 75 - 89
- > 90
- Not responding



Not responding : Hungary, Portugal, Romania

0 1000 km

C. Sohn, 2005

IV.2. Type of housing

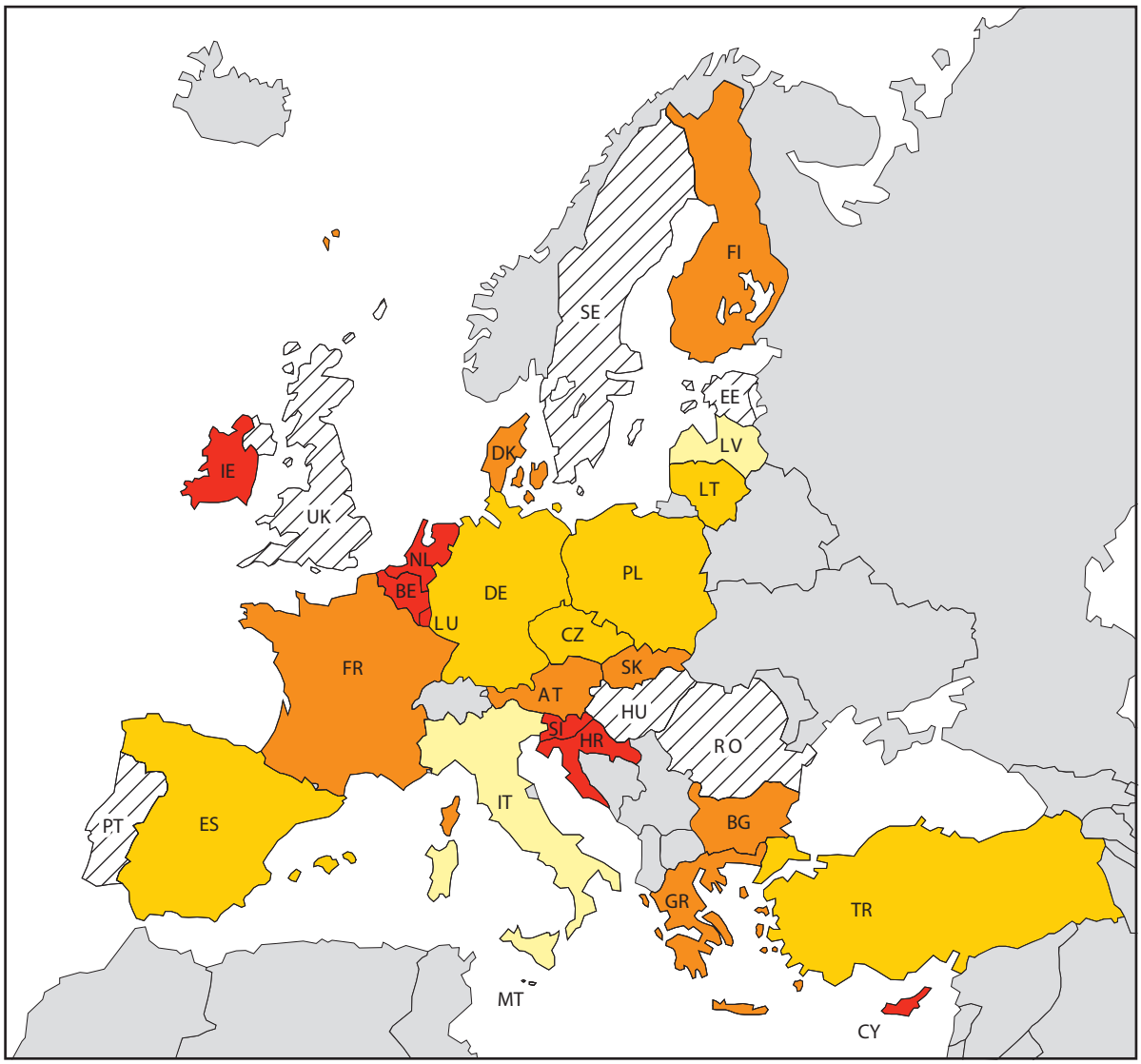
Table 17 – Type of housing (% of dwellings) and size of dwellings

		% single family dwel.	% twinned dwel.	% multi-fam. dwel.	% other	Av. size dwel.
Old EU member states						
Austria	AT	33,8	20,1	42,8	3,3	90,4
Belgium	BE	32,2	42,8	24,3	0,7	86,3
Denmark	DK	59,1		38,7	2,2	109,3
Finland	FI	40	13,6	44,1	2,4	77,3
France	FR	56,8	-	43,2	-	89,3
Germany	DE	31	14	53	2	89,7
Greece	GR	50,2	-	49,8	-	81,3
Ireland	IE	99,6		0,4	-	88,3
Italy	IT	25,3	-	74,7	-	90,3
Luxembourg	LU	29,4	37,5	28,7	4,4	126
Netherlands	NL	71		29	-	104
Portugal*	PT					
Spain	ES	15,6	21,1	63,3	-	95
Sweden	SE	-	-	-	-	-
United Kingdom	UK	-	-	-	-	86,9
New EU member states						
Cyprus	CY	42,5	26,1	27,9	3,5	145
Czech Republic	CZ	34,9	11	52,9	1,2	49,3
Estonia	EE	-	-	-	-	60,2
Hungary*	HU					
Latvia	LV	22,7	4,9	72,1	0,3	57
Lithuania	LT	38,1	-	60,9	1	61
Malta	MT	-	-	-	-	104,1
Poland	PL	33,4	10,5	56,1	-	68,6
Slovakia	SK	49,2	-	49,9	0,9	56,1
Slovenia	SI	46,1	18,3	34,2	1,1	74,6
EU accession states						
Bulgaria	BG	58,7	-	41,3	-	65,5
Croatia	HR	54	11,6	34,3	0,1	74,4
Romania*	RO					
Turkey	TR	44	-	56	-	190

* Questionnaire not received

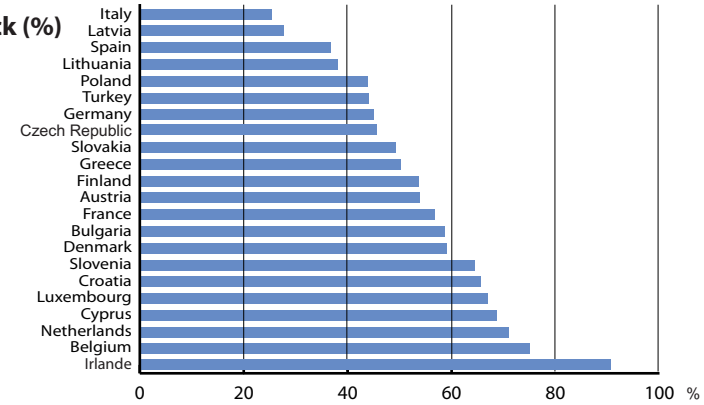
Figure 16 **General data on housing**

Type of dwellings



One family dwellings in total housing stock (%)

- < 30
- 30 - 44
- 45 - 59
- > 60
- Not responding



Not responding : Estonia Hungary Malta Portugal Romania Sweden United Kingdom

0 1000 km

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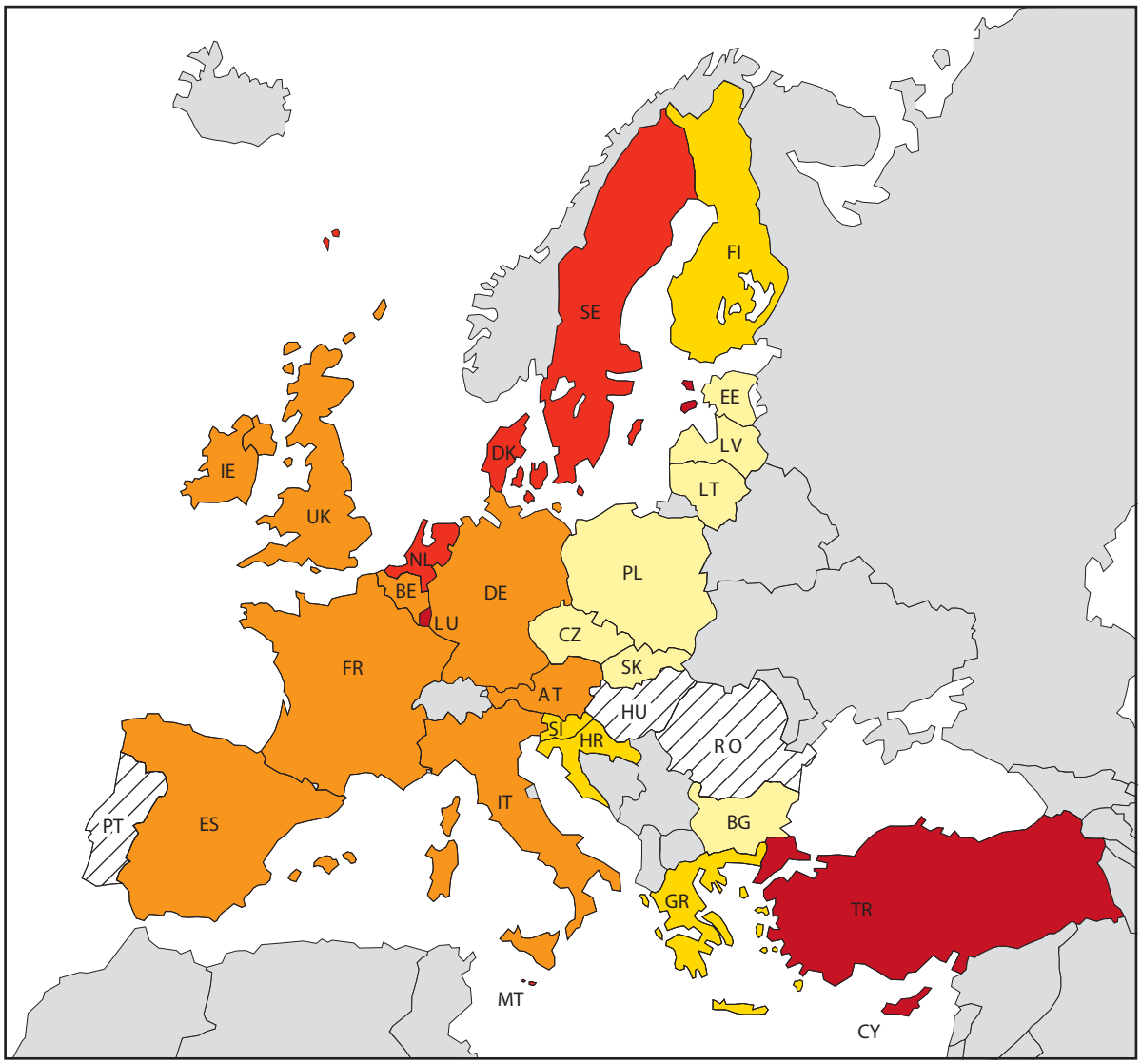
EODE INSTEAD IEPS

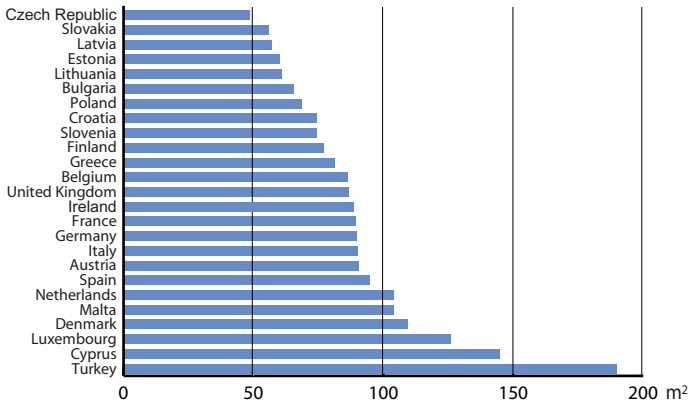
Figure 17 **General data on housing**

Size of dwellings



Average floor area per dwellings (m²)

- < 70
- 70 - 84
- 85 - 99
- 100 - 119
- > 120
- Not responding



Not responding : Hungary Portugal Romania Sweden

0 1000 km

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EODE INSTEAD IEPI

IV.3. Age of the housing stock

Table 18 – Age of dwellings (in %)

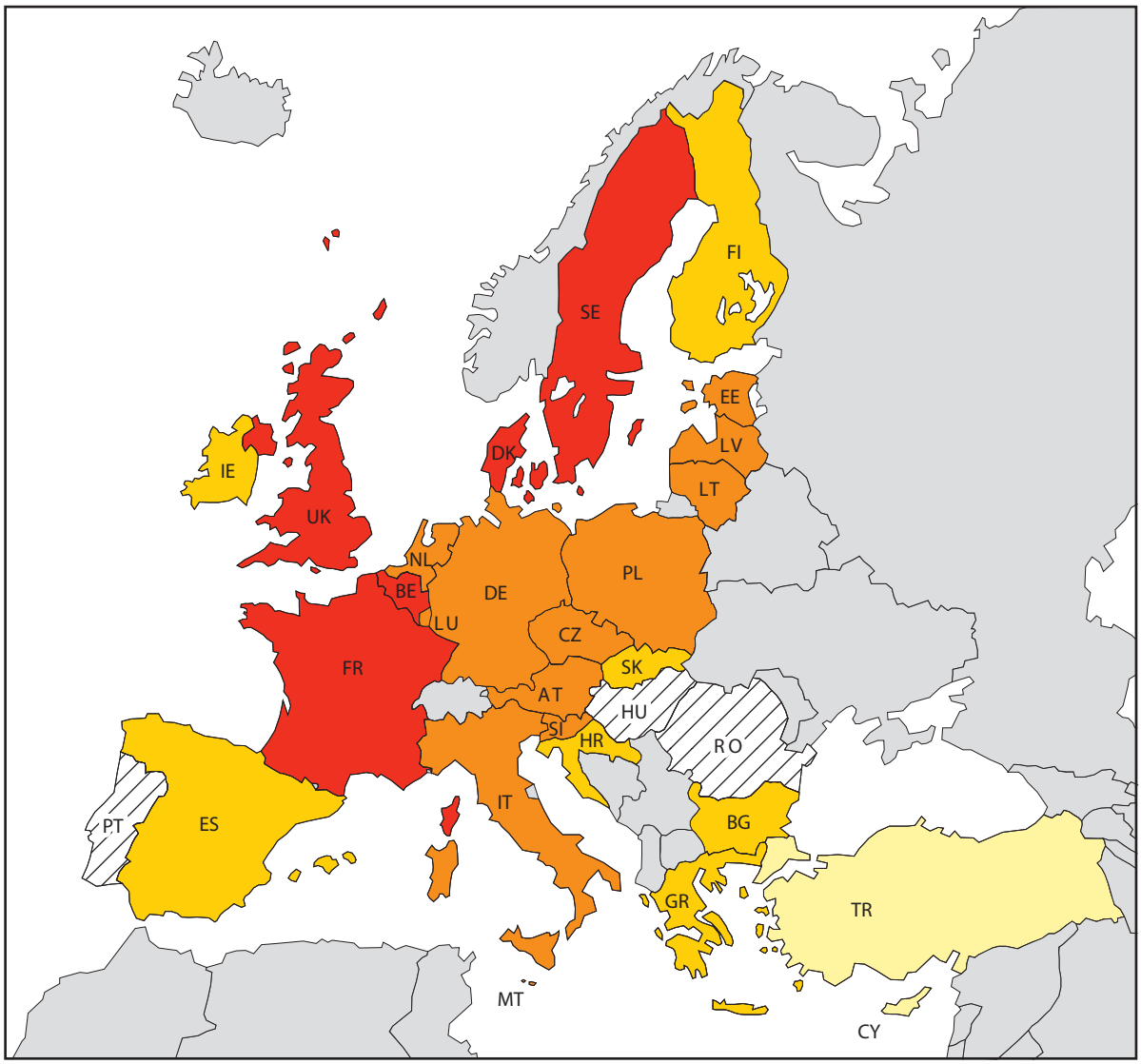
		% <1919	% 1919-1945	% 1946-1970	% 1971-1990	% >1990
Old EU member states						
Austria	AT	19,8	8,6	12,3	32,2	27,1
Belgium	BE	15	16,5	29	24,4	15,1
Denmark	DK	20,2	16,9	28,3	27,2	7,4
Finland	FI	1,6	8,8	30,6	43,4	14,4
France	FR	19,9	13,3	18	36,4	12,4
Germany	DE	15,2	12,8	46,8	14,1	11,1
Greece	GR	3,1	7,2	31,8	43,6	14,3
Ireland	IE	9,7	8,2	16,4	33,7	31,9
Italy	IT	19	10,5	40,7	29,8	na
Luxembourg	LU	11,8	14,8	27,1	26,8	17,2
Netherlands	NL	7,1	13,2	30,9	18,9	29,8
Portugal*	PT					
Spain	ES	8,9	4,2	33,5	37,7	15,7
Sweden	SE	12,4	20,2	33,1	27,1	7,2
United Kingdom	UK	20,8	17,7	21,2	21,8	18,5
New EU member states						
Cyprus	CY		7,4	17	48,4	27,2
Czech Republic	CZ	10,9	14,7	26,3	39,9	8,2
Estonia	EE	9,4	14,2	30	41,1	5,3
Hungary*	HU					
Latvia	LV	11	13,8	27,7	43,8	3,7
Lithuania	LT	6,2	23,3	33,1	31,1	6,3
Malta	MT		25,5	22,2	43,1	9,2
Poland	PL	10	13,1	26,9	39,1	10,9
Slovakia	SK	3,4	6,6	35,2	46,5	8,3
Slovenia	SI	15,6	8	28,4	40,3	7,7
EU accession states						
Bulgaria	BG	2,4	11	36,8	42,3	7,5
Croatia	HR	9,1	7,3	31	40,4	8,4
Romania*	RO					
Turkey	TR	2,2	3,9	15,6	47,2	30,1

* Questionnaire not received

Note: For some countries, the periods may slightly differ. See *Housing Statistics in the European Union 2004* for details.

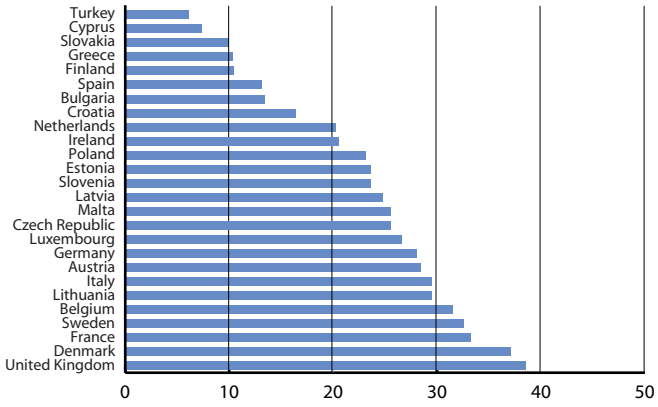
Figure 18 **General data on housing**

Age of the housing stock



Dwellings built before 1945 (%)

- < 10
- 10 - 19
- 20 - 29
- > 30
- Not responding



Not responding : Hungary Portugal Romania

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EODE INSTEAD EPI

IV.4. Type of heating

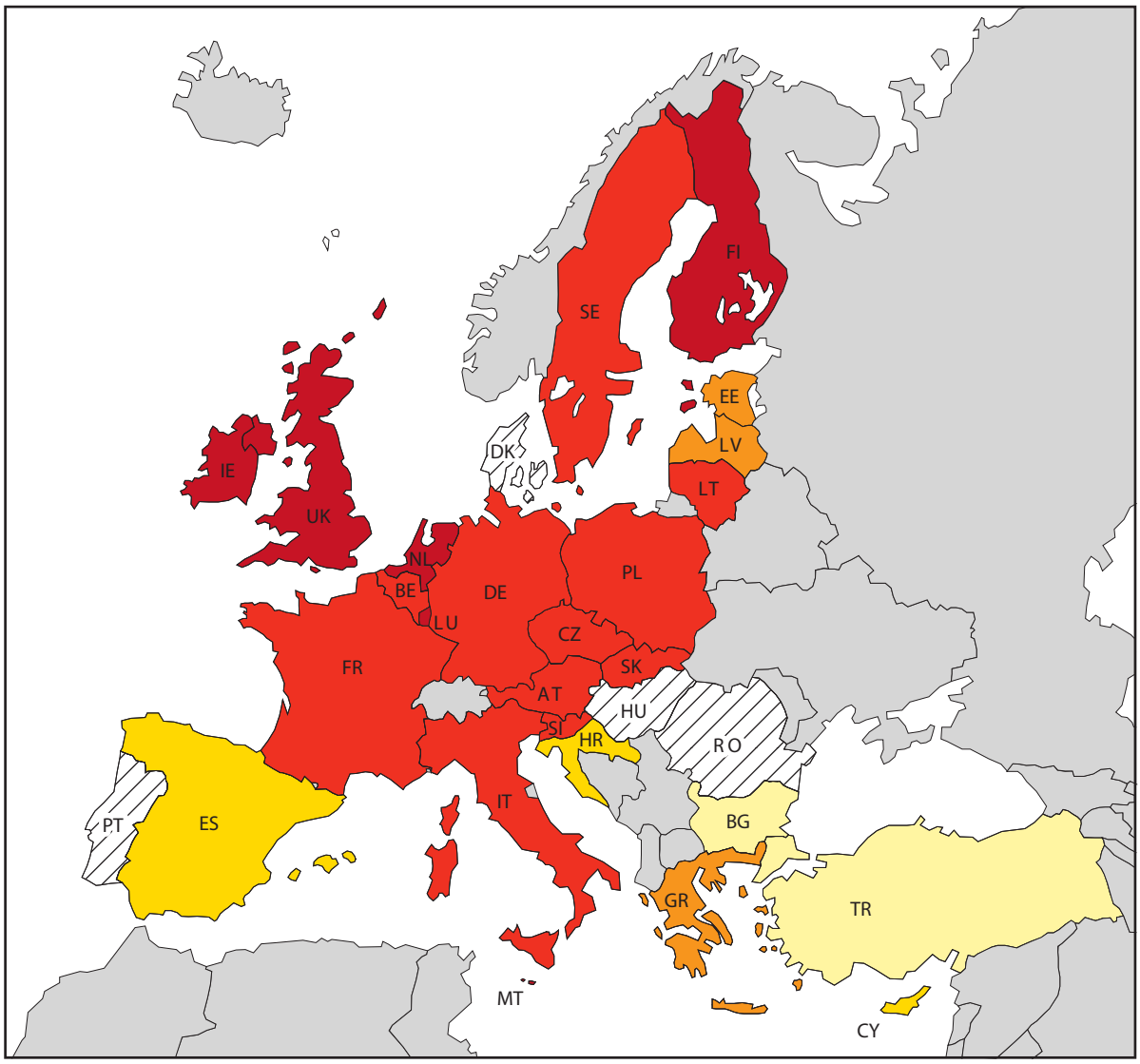
Table 19 – Type of heating (% of dwellings)

		% coll. central heat.	% ind. Central heat.	% ind. Devices	% other	% without
Old EU member states						
Austria	AT	88,3		11,7	-	-
Belgium	BE	72,7		-	-	-
Denmark	DK	-	-	-	-	-
Finland	FI	36	64	-	-	-
France	FR	17,2	64,9	11,4	6,4	
Germany	DE	77,1		9,1	13,7	-
Greece	GR	63,5		31,8	4,7	-
Ireland	IE	94		4,5	1,5	-
Italy	IT	79		-	-	-
Luxembourg	LU	18,4	77	4,1	-	0,5
Netherlands	NL	21	79	-	-	-
Portugal*	PT					
Spain	ES	9,3	37,7	36,5	0	16,5
Sweden	SE	46,8	39,5	13,7	-	-
United Kingdom	UK	1,8	91,8	6,4	-	0
New EU member states						
Cyprus	CY	32,7		60	5,4	1,9
Czech Republic	CZ	73,6	8,1	17,5	0,8	-
Estonia	EE	59	-	-	-	-
Hungary*	HU					
Latvia	LV	36,7	21,6	30,6	11,1	-
Lithuania	LT	52,9	25,6	-	25,2	0,2
Malta	MT	-	99,7		-	0,3
Poland	PL	41,9	36,1	20,7	1,3	-
Slovakia	SK	41,5	40,9	9,7	7,9	-
Slovenia	SI	13,8	68,1	13,6	4,2	0,3
EU accession states						
Bulgaria	BG	16,6	2,8	80,2	-	-
Croatia	HR	8,9	26,5	63,8	-	0,6
Romania*	RO					
Turkey	TR	2,9	3,3	86,5	4,4	2,9

* Questionnaire not received

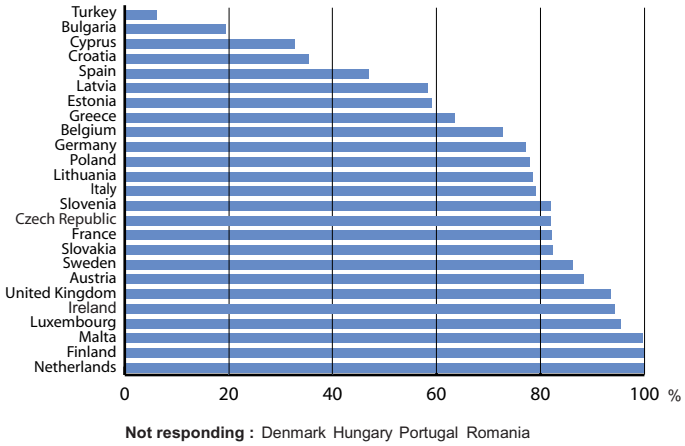
Figure 19 **General data on housing**

Type of heating



Dwellings with central heating (%)

- < 20
- 20 - 49
- 50 - 69
- 70 - 89
- > 90
- Not responding



Not responding : Denmark Hungary Portugal Romania

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IV.5. Energy used for heating

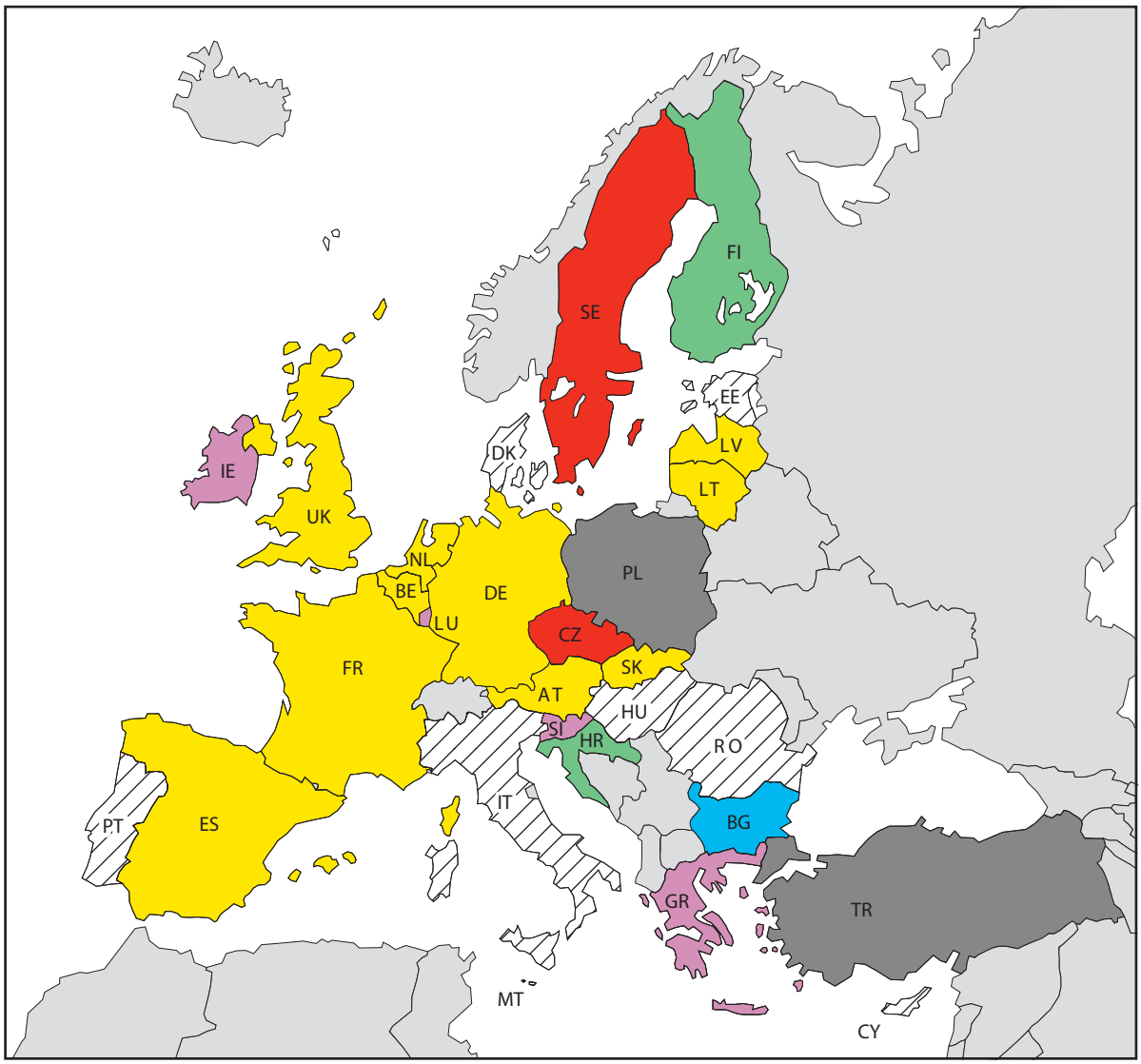
Table 20 – Energy used for heating (% of dwellings)

		% electricity	% coal	% gas	% heating oil	% wood	% renewable	% other
Old EU member states								
Austria	AT	7,8	2,9	32,3	27	16,4	1,4	12,2
Belgium	BE	7,2	2,8	45,4	43,1	1,4	0,2	0
Denmark	DK							
Finland	FI	7,6	0,1	1	32,4	38,7	4,3	15,9
France	FR	28,4	0,6	39,1	19,9	6,8	0	5,2
Germany	DE	4,1	1,6	47,7	31,8		1	13,7
Greece	GR	11,1	3,6	3,1	71,1	10	-	1,1
Ireland	IE	3,7	9,2	24,7	38,6	-	-	7,1
Italy	IT	-	-	-	-	-	-	-
Luxembourg	LU	4	0	43,7	48,6	1,3	0	2,4
Netherlands	NL	-	-	95	-	-	-	-
Portugal*	PT							
Spain	ES	30	3,6	31,7	13,3	2,4	0	19
Sweden	SE	24	-	0,7	15,5		14,4	46,7
United Kingdom	UK	9,3	2,1	83,2	3,3	-	0	-
New EU member states								
Cyprus	CY	-	-	-	-	-	-	-
Czech Republic	CZ	6,5	15	36,6	0	4,4	-	37,5
Estonia	EE	-	-	-	-	-	-	-
Hungary*	HU							
Latvia	LV	0	1,1	52,4	0,1	46,4	0	0
Lithuania	LT	1	1	80	10	6	0	2
Malta	MT	-	-	-	-	-	-	-
Poland	PL	2,6	86,9	8,8	0,7	0	0	1
Slovakia	SK	4	18	66,6	0,6	0	0	10,8
Slovenia	SI	7,6	1,9	9,7	39,3	27,2	0,5	13,8
EU accession states								
Bulgaria	BG	36,5	4,4	18	3	26,7	0	11,4
Croatia	HR	14,2	0,2	22,5	7	46,7	0	9,4
Romania*	RO							
Turkey	TR	2,9	44,8	5	2,1	16,6	-	28,6

* Questionnaire not received

Figure 20 **General data on housing**

Source of energy for heating



Principal source of energy used for heating

- Electricity
- Coal
- Gas
- Heating oil
- Wood
- District heating
- Not responding

0 1000 km

C. Sohn, 2005

ANNEX 1 - QUESTIONNAIRE USED FOR DATA COLLECTION

Présidence luxembourgeoise
du Conseil de l'Union européenne

Questionnaire

for the EU expert meeting in Luxembourg

the 9th and 10th of June 2005

on

« *Strategies in favour of the reduction of CO_2 emissions in the existing residential buildings* »

Country: ……..

INTRODUCTION

The questionnaire enclosed will be used as a statistical basis for the expert meeting.

The objective is to understand and to compare the different measures of the member countries of the UE aiming at reducing the emissions of CO_2 in the housing sector.

The exchange of information and experiences among the government officials and experts will in this way contribute to find appropriate solutions for the different countries in that matter.

To that effect, the questionnaire is principally centred on the actions taken in your country about the above-mentioned theme.

We would ask you to complete the questionnaire as consciously as possible. You can write your answers either in English, in German or in French.

Please contact the competent persons in that matter and undertake the necessary steps to fill the questionnaire as completely as possible.

****

Contact persons

In case you need additional information about the questionnaire, please contact the following persons:

Christophe SOHN
(+352) 58 58 55 – 613
christophe.sohn@ceps.lu
CEPS/Instead
44, rue Emile Mark L-4501
L-4501 Differdange
(*synthesis of the questionnaires*)

Christian NOEHL
(+352) 478 - 4873
christian.noehl@ml.etat.lu
Ministère du Logement
6, avenue Emile Reuter
L-2420 Luxembourg
(*project manager*)

****

Could you please send the completed questionnaire, with all the useful annexes, until the **21st of March 2005** *at the latest at the following address:*

Ministère des Classes moyennes, du Tourisme et du Logement
Département du Logement
Att.: Jérôme Krier
6, avenue Emile Reuter
L-2942 Luxemburg

We would also ask you to forward a copy of the questionnaire by e-mail at the following address:

Jerome.Krier@ml.etat.lu (*tel.: (+352) 478 4837*)

****

Country: ……..

Person in charge of the completion of this questionnaire for your country:

- Name:
- First name:
- Position:
- Ministry/Organisation:
- Address:
- Country:
- Telephone number:
- Fax:
- E-mail address:
- Internet site:

****

Information concerning the questionnaire:

Unless otherwise requested, please use the latest data available and specify the year of reference chosen.

Depending on whether you use statistical data or your expert estimate, please tick the appropriate box (S= « statistical data » ; E= « expert estimate »).

If necessary, you have the possibility to make comments after each question.

The text appearing in *grey tint* in the tables is related to examples.

We would ask you to mention the sources and/or the persons responsible for some data and information, as well as the useful internet links.

Please send the completed questionnaire for the ***21st of March 2005***, at the latest.

****

PART 1. ORIENTATION OF PUBLIC POLICIES

1.1. What are the objectives of your government in relation to energy consumption in the housing sector?

Field of application	Energy consumption Year of reference: ……		Decrease expected Timeframe (year): ……	
	Quantity (in Mtoe*)	% in relation to national consumption	Quantity (in Mtoe)	% in relation to national consumption
Space heating				
Water heating				
Air-conditioning				
Lighting				
Total (all the fields)				

* Million tonnes of oil equivalent

Comments:

1.2. What are the objectives fixed by your government in relation to CO_2 emissions in the housing sector?

Field of application	CO_2 emissions Year of reference: ……..		Decrease expected Timeframe (year): ……	
	Quantity (en $MtCO_2$*)	% in relation to national emissions	Quantity (en $MtCO_2$)	% in relation to national emissions
Space heating				
Water heating				
Air-conditioning				
Lighting				
Total (all the fields)				

* Million tonnes of CO_2

Comments:

1.3. Do you have a national programme of action in order to reduce the greenhouse effect?

Yes	If yes, since when?	No
☐	……	☐
		If no, go to question 1.6

1.4. If yes, does this plan integrate specifically the housing sector?

Yes	No
☐	☐
	If no, go to question 1.6

Comments:

1.5. Could you specify the main policy orientations of your plan concerning the housing sector? (*develop as much as necessary*) :

Programmes in favour of energy consumption reduction

Programmes in favour of the use of renewable energy sources

1.6. In the absence of a programme of action integrating housing, did you take specific initiatives in order to reduce the greenhouse gazes in the housing sector?

Yes	No
☐	☐

Comments:

1.7. If yes, which ones?

Date of adoption	Title of the measure	Field of application	Type of housing (new* or existent)	Driving organism
2000	*Thermic regulations of buildings*	*Isolation, heating*	*New housing*	*Ministry of Housing*

* Still under construction.

Comments:

PART 2. DETAILS OF THE MEASURES TAKEN IN THE HOUSING SECTOR

? Awareness campaigns

2.1. Which are the people targeted by the awareness campaigns driven by the state on energy consumption of dwellings?

Public targeted:	Energy consumption reduction		Use of renewable energy sources	
	Number of punctual actions*	Number of permanent actions	Number of punctual actions*	Number of permanent actions
Private individual	……	……	……	……
Public rental bodies	……	……	……	……
Private rental bodies	……	……	……	……
Housing associations	……	……	……	……
Building professionals (architects, builders, artisans…)	……	……	……	……
Other publics targeted (schools, etc.)	……	……	……	……

* Limited length of time (public display campaigns, TV spots…)

Comments:

2.2. Do you have public organisms that spread the information on:

	Yes	No
The good practices to promote (temperature of heating, etc.)	☐	☐
Energy efficient materials and constructions	☐	☐
The techniques about renewable energy sources	☐	☐

Comments:

2.3. Could you mention two awareness campaigns particularly significant in terms of public impact? (*develop as much as necessary*)

Example 1:

Example 2:

? Training actions

2.4. Are there any training centres for professionals of the building sector, financed by the state in the field of energy saving?

Yes	No
☐	☐

Comments:

2.5. If yes, could you specify the training offered? (*develop as much as necessary*)

In the domain of energy consumption reduction

In the domain of the use of renewable energy sources

? Financial incentives

2.6. Did you implement incentives for the professionals who promote energy saving in the housing sector?

	Yes	No
Architects / Town planners	☐	☐
Constructors	☐	☐
Building artisans	☐	☐
Other (specify) :	☐	☐

Comments:

2.7. If yes, specify the budget allocated per year:

Year of reference: ……	Mode of financing (in million euros)		
	Improved loans	Subsidy	Tax relief
Energy consumption reduction	Amount: ……	Amount: ……	Amount: ……
Use of renewable energy sources	Amount: ……	Amount: ……	Amount: ……

Comments:

2.8. Have you implemented incentives for house-owners?

Yes	No
☐	☐

Comments:

2.9. If yes, specify the budget allocated per year:

Year of reference: ……	Mode of financing (in million euros)		
	Improved loans	Subsidy	Tax relief
Energy consumption reduction	Amount: ……	Amount: ……	Amount: ……
Use of renewable energy sources	Amount: ……	Amount: ……	Amount: ……

Comments:

? **Regulations**

2.10. Is there any energy performance regulation for residential buildings?

	Yes	No	If yes, date of application
New buildings*	☐	☐	
Existing buildings	☐	☐	

* Still under construction.

Comments:

2.11. If yes, which ones?

For new buildings:

For existing buildings:

2.12. Does this regulation set minimum standards on the energy performance of buildings?

	Yes	No	If yes, date of application
New buildings*	☐	☐	
Existing buildings	☐	☐	

* Still under construction.

Comments:

2.13. What is the characteristic energy value in your country for the calculation of the energy performance of buildings?

	Value (in kWh/m^2 year)
New buildings*	
Existing buildings	

* Still under construction.

Comments:

2.14. Are there any energy performance diagnosis for residential buildings…

	Yes	No
… made?	☐	☐
… expected?	☐	☐

Comments:

2.15. If yes, could you specify the conditions of application? (*tick the appropriated boxes*)

	Compulsory measure	Optional measure	Certification / Label	Date of application
When constructed	☐	☐	☐	……
When renovated	☐	☐	☐	……
When sold	☐	☐	☐	……
When rented out	☐	☐	☐	……

Comments:

2.16. What are the existing regulations for the equipments? (*specify whether the measures are compulsory « C », optional « O » or non-existent « N »*)

	Heating	Air-conditioning	Ventilation	Insulation	Lighting	Other (specify) ……
Example	*N*	*N*	*O*	*N*	*C*	
Energy performance standards						
Labels						
Inspections						

Comments:

2.17. Are there any mechanisms to control the implementation of the applicable regulations?

Yes	No
☐	☐

Comments:

2.18. If yes, specify:

Field of application	Type of action	Actors concerned	Date of application

Comments:

2.19. Are there any penalties in case of violation of applicable regulations?

Yes	No
☐	☐

Comments:

2.20. If yes, specify:

Field of application	Type of action	Actors concerned	Date of application

Comments:

? Assistance to research and development

2.21. Are there any national R&D programmes on energy performance of residential buildings?

Domains	Yes	No
Energy consumption reduction	☐	☐
Use of renewable energy sources	☐	☐

Comments:

2.22. If yes, please mention one or two projects particularly innovative from your point of view:

In the domain of energy consumption reduction

In the domain of the use of renewable energy sources

2.23. Are there any pilot projects in the frame of R&D?

Domains	Yes	No
Energy consumption reduction	☐	☐
Use of renewable energy sources	☐	☐

Comments:

2.24. If yes, please mention one or two projects particularly innovative from your point of view:

In the domain of energy consumption reduction

In the domain of the use of renewable energy sources

PART 3. FOLLOW UP AND EVALUATION OF THE POLICIES

3.1. Do you have any instruments for following up and evaluate your policies?

Yes	No
☐	☐

Comments:

3.2. If yes, specify three of your main instruments:

Instrument n° 1:

Instrument n° 2:

Instrument n° 3:

3.3. Do you have a statistical tool enabling you to calculate the potential of reduction of CO_2 emissions in the housing sector?

Yes	No	If yes, which one?
☐	☐	……

Comments:

3.4. If yes, does this tool integrate a typology of buildings?

Yes	No
☐	☐

Comments:

3.5. Do you have statistics about the number of building professionals trained on the question of energy consumption reduction?

	Number	% of the professional body	Year	S	E
Architects / Town planners				☐	☐
Constructors				☐	☐
Building artisans				☐	☐
Others (specify): ……				☐	☐

Comments:

3.6. Do you have data concerning the cost efficiency of the state measures taken to reduce CO_2 emissions?

Yes	No
☐	☐

Comments:

3.7. If yes, which ones? (*develop as much as necessary*)

PART 4. GENERAL DATA ON HOUSING

Depending on whether you use statistical data or your expert estimate, please tick the appropriate box (S= « statistical data » ; E= « expert estimate »).

4.1. Population and households

Year of reference: ……		S	E
Population		☐	☐
Number of households		☐	☐
Average size of household		☐	☐

Comments:

4.2. Households status

Year of reference: ……..	Number of households	%	S	E
Owner			☐	☐
Tenant			☐	☐
- renting a dwelling owned by a private owner			☐	☐
- renting a dwelling owned by a public body			☐	☐
- renting a dwelling owned by a company			☐	☐
Other status (specify) :			☐	☐

Comments:

4.3. type of housing and number of dwellings

Year of reference: …….	Number of buildings	%	Number of dwellings	%	S	E
Single family dwellings					☐	☐
Single family dwellings twinned or in raw					☐	☐
Multi-family dwellings					☐	☐
Other type of housing					☐	☐

Comments:

4.4. Size of dwellings

Year of reference: ……..	m^2	S	E
Average floor* area per dwelling		☐	☐

* Specify if it is the useful area or the total area

Comments:

4.5. Equipment of dwellings (% of total number of dwellings)

Year of reference: ……..	%	S	E
Bathing room (with bath/shower)		☐	☐
Toilets inside the dwelling		☐	☐

Comments:

4.6.Type of heating (% of total number of dwellings)

Year of reference: …….....	%	S	E
Collective central heating		☐	☐
Individual central heating		☐	☐
Independent heating devices		☐	☐
Other mode of heating (specify) :		☐	☐
Dwellings without heating		☐	☐

Comments:

4.7. Principal source of energy used for heating (% of total number of dwellings)

Year of reference: …….	%	S	E
Electricity (from non-renewable sources of energy)		☐	☐
Coal		☐	☐
Gas		☐	☐
Heating oil		☐	☐
Wood		☐	☐
Renewable sources of energy (heat pumps, etc.)		☐	☐
Other (specify) :		☐	☐

Comments:

4.8. Age of dwelling stock (% of total number of dwellings)

Modify the periods according to census dates →	< 1919 or ……	1919-1945 or ……	1946-1970 or ……	1971-1990 or …….	> 1990 or ……
%					

Comments:

4.9. Dwellings newly completed

Year or period of reference:	Units	S	E
Number of dwellings completed for the year or period of reference		☐	☐

Comments:

****

Major sources of information used in order to complete this questionnaire:
(documentation, websites, etc.)

If you have interesting documents related to the questions treated in that questionnaire and that are not available on the internet, we should be grateful if you could send us a copy. Thanking you in advance.

ANNEX 2 – COMPLETENESS OF RESPONSE

Completeness of the country's response to questionnaire

Part	Question	Description	Sub	% answer
Part 1	1.1	Energy consumption and decrease expected		59
Part 1	1.1			38
Part 1	1.2	CO2 emissions and decrease expected		52
Part 1	1.2			38
Part 1	1.3	National programme		83
Part 1	1.4	Integration of the housing sector		81
Part 1	1.5	Main policy orientations	1	81
Part 1	1.5		2	85
Part 1	1.6	Specific initiatives		73
Part 1	1.7	Description		69
		% of questions answered in Part 1		65
Part 2	2.1	People targeted by awareness campaigns	1	72
Part 2	2.1		2	62
Part 2	2.2	Public organism for spreading information		79
Part 2	2.3	Examples of awareness campaigns		69
Part 2	2.4	Training centres		83
Part 2	2.5	Training offered	1	65
Part 2	2.5		2	58
Part 2	2.6	Incentives for professionals		72
Part 2	2.7	Budget allocated		26
Part 2	2.8	Incentives for house-owners		83
Part 2	2.9	Budget allocated		48
Part 2	2.10	Energy performance regulation		90
Part 2	2.11	Specify		81
Part 2	2.12	Minimum standard		86
Part 2	2.13	Characteristic energy value		52
Part 2	2.14	Performance diagnosis		79
Part 2	2.15	Conditions,of application		75
Part 2	2.16	Regulations for the equipments		79
Part 2	2.17	Mechanism of control implementation		72
Part 2	2.18	Specify		63
Part 2	2.19	Penalties		76
Part 2	2.20	Specify		58
Part 2	2.21	National R&D programmes	1	83
Part 2	2.21		2	76
Part 2	2.22	Examples of R&D programmes	1	52
Part 2	2.22		2	43
Part 2	2.23	Pilot projects	1	79
Part 2	2.23		2	59
Part 2	2.24	Examples of pilot projects	1	57
Part 2	2.24		2	39
		% of questions answered in Part 2		66
Part 3	3.1	Intruments for evaluating the policies		79
Part 3	3.2	Specify three instruments		73
Part 3	3.3	Statistical tool for the calculation of CO2 emissions		79
Part 3	3.4	Integration of a typology of buildings		59
Part 3	3.5	Statistics about the professionnals trained		55
Part 3	3.6	Data concerning the cost efficiency of state measures		76
Part 3	3.7	Specify		50
		% of questions answered in Part 3		69
Part 4	4.1	Population and households		86
Part 4	4.2	Households status		83
Part 4	4.3	Type of housing		76
Part 4	4.4	Size of dwellings		79
Part 4	4.5	Equipment of dwellings		83
Part 4	4.6	Type of heating		83
Part 4	4.7	Principal source of energy used for heating		76
Part 4	4.8	Age of dwelling stock		83
Part 4	4.9	Dwellings newly completed		79
		% of questions answered in Part 4		81
		% of questions answered in questionnaire		69

Country	Code	% of questions answered in Part 1	% of questions answered in Part 2	% of questions answered in Part 3	% of questions answered in Part 4	% of questions answered in questionnaire
Austria	AT	88	70	100	100	**81**
Belgium	BE	100	90	83	89	**91**
Bulgaria	BG	88	55	71	78	**66**
Croatia	HR	30	37	0	100	**41**
Cyprus	CY	63	90	75	89	**84**
Czech Republic	CZ	88	100	100	100	**98**
Denmark	DK	75	30	43	0	**33**
Estonia	EE	10	46	75	78	**47**
Finland	FI	88	93	100	100	**94**
France	FR	100	90	100	100	**94**
Germany	DE	75	97	100	100	**94**
Greece	GR	89	72	14	100	**72**
Hungary	HU	0	0	0	0	**0**
Ireland	IE	80	86	83	100	**87**
Italy	IT	88	88	100	11	**75**
Latvia	LV	80	76	100	100	**84**
Lithuania	LT	60	69	100	100	**75**
Luxembourg	LU	43	96	75	100	**88**
Malta	MT	60	100	60	100	**88**
Netherlands	NL	100	96	100	100	**98**
Poland	PL	50	100	100	100	**90**
Portugal	PT	0	0	0	0	**0**
Romania	RO	0	0	0	0	**0**
Slovakia	SK	78	69	80	100	**77**
Slovenia	SI	88	85	100	100	**92**
Spain	ES	75	92	100	100	**91**
Sweden	SE	50	72	43	100	**70**
Turkey	TR	90	86	67	100	**87**
United Kingdom	UK	100	27	86	100	**57**
% answer		**65**	**66**	**69**	**81**	**69**

1 Energy consumption reduction

2 Use of renewable energy sources

Not filled-in

Not applicable

Completely filled-in

Partly filled-in

ANNEX 3 – RELEVANT INFORMATION SOURCES

Relevant information sources

	Relevance		Organization
Austria	**Contact person**	Name:	Dr. Andreas SOMMER
		Function:	Abteilungsleiter Abt.C1/7
		Organization:	Bundesministerium für Wirtschaft und Arbeit,
		Address:	Stubenring 1, A-1010 Wien
		Phone:	+43.1.71100 5145,
		Email:	andreas.sommer@bmwa.gv.at
		Website:	http://www.bmwa.gv.at
	Energy	Name:	**Österreichische Energieagentur**
		Competency:	Energy agency
		Address:	Otto Bauer Gasse 6, A-1060 Wien
		Phone:	+43.1.58.61.524
		Fax:	DW 40
		Website:	office@energyagency.at
	Statistics	Name:	**Statistik Austria**
		Competency:	Statistics agency
		Address:	Guglgasse, A-1110 Wien
		Phone:	+43.1.71.128
		Website:	http://www.statistik.at/index.shtml
Belgium	**Contact person**	Name:	Laurent VANCLAIRE
		Function:	Attaché de cabinet
		Organization:	Secrétariat d'Etat en charge du Logement,
		Address:	Boulevard du Régent, 21-23; B-1000 Bruxelles
		Phone:	+32.02.506.33.43,
		Email:	lvanclaire@dupuis.irisnet.be
		Name:	Michel GREGOIRE
		Function:	Inspecteur Général AI
		Organization:	MRW-DGTRE Division Energie,
		Address:	7 Av. Prince de Liège, B-5100 Jambes
		Phone:	+32.81.33 55 06
		Fax:	+32.81.33 55 11
		Email:	mi.gregoire@mrw.wallonie.be
	Energy	Name:	**Administration Wallonne de l'Energie**
		Competency:	Energy agency
		Address:	Avenue Prince de Liège, 7, B-5100 Namur
		Phone:	32 (0)81/33.55.01
		Fax:	32 (0)81/30.66.00
		Email:	energie@mrw.wallonie.be
		Website:	http://energie.wallonie.be
	Statistics	Name:	**SPF Economie – Division statistique**
		Competency:	statistics
		Address:	Rue du Progrès, 50, B-1210 Bruxelles
		Phone:	32 (0)2/277.55.04
		Fax:	32 (0)2/277.55.19
		Email:	Infoshop **Bruxelles**
		Website:	http://www.statbel.fgov.be/
	For further information		• Plusieurs modules d'informations ont été créés afin de conseiller les particuliers sur tout ce qui concerne l'énergie dans le logement. http://energie.wallonie.be • Pour l'année 2004, la Région wallonne a mis à la disposition des ménages une enveloppe de plus de 6.000.000 EUR sous la forme de primes en faveur de l'efficacité énergétique http://energie.wallonie.be

Bulgaria	**Contact person**	Name:	Violeta ANGELIEVA
		Function:	Director of direction “Technical norms and rules
		Organization:	Ministry of Regional Development and Public Works,
		Address:	17-19 Kiril I Metodii Str., B-1202 Sofia
		Phone:	+ 359 2 9405 422
		Fax:	+359 2 987 25 17
		Name:	Stefan HUBANOV
		Function:	Chief of Housing Policy Unit
		Organization:	Ministry of Regional Development and Public Works,
		Address:	17-19 Kiril I Metodii Str, B-1202 Sofia
		Phone:	+359 2 9405 417
		Fax:	+359 2 987 25 17
		Email:	sthubanov@abv.bg
		Name:	Rumen GUGLEV
		Function:	Director
		Organization:	Building Research Institute, 36 Nikola Petkov Str, B-1618 Sofia
		Phone:	+359 2 856 10 82
		Fax:	+359 2 955 96 38
		Email:	nisi_sofia@abv.bg
Croatia	**Contact person**	Name:	Borka BOBOVEC
		Function:	Head of Sector for Housing and Municipal Economy
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		Address:	Construction, Ulica Republike Austrije 16, Croatia
		Phone:	+385 1 37 82 129
		Fax:	+385 1 37 82 156
		Email:	borka.bobovec@mzopu.hr
		Website:	http://www.mzopu.hr
Cyprus	**Contact person**	Name:	Athena ARISTOTELOUS-CLERIDOU
		Function:	Head of Housing and Conservation Sector
		Organization:	Department of Town Planning and Housing, Demosthenis,
		Address:	Severis Av. CY-1454, Lefkosia (Nicosia)
		Phone:	+357 224 08 155
		Fax:	+357 224 08 262
		Email:	aaristotelous@tph.moi.gov.cy
	Housing	Name:	**Ministry of Finance – Department Construction and Housing Statistics**
		Competency:	Building and statistics about housing
		Address:	Michalakis Karaolis Str., CY-1444 Lefkosia (Nicosia)
		Address:	357 22602168
		Phone:	enquiries@cystat.mof.gov.cy
		Email:	http://www.mof.gov.cy/mof/cystat/statistics.nsf/index_en
		Website:	
	Energy	Name:	**Ministry of Commerce, Industry and Tourism**
		Competency:	Energy institute
		Address:	6, Andreas Araouzos Street, CY-1424 Lefkosia (Nicosia)
		Phone:	+357 (22) 40.93.84
		Fax:	+357 (22) 30.47.59
		Email:	ich.cie@cytanet.com.cy
		Website:	www.cie.org.cy
	Environment	Name:	**Ministry of Agriculture, Natural Resources and Environment**
		Competency:	Environmental Service
		Address:	Loukis Akritas Ave., CY-1411 Lefkosia (Nicosia)
		Phone:	357 (22) 30 38 88 / 30 38 83 (Central)
		Fax:	357 (22) 77 49 45
		Email:	rocperiv@cytanet.com.cy
		Website:	http://www.kypros.org/PIO/cygov/ministry/magric/index.htm

	Development	Name:	**Human Resource Development Authority, Ministry of Labour and Social Security**
		Competency:	Human Developement
		Address:	2, Anavissou Str., Strovolos, P.O.Box 25431
		Address:	CY-1392 Lefkosia (Nicosia)
		Phone:	+357 (2) 51.50.00
		Fax:	+357 (2) 49.69.49
		Email:	hrda@hrdauth.org.cy
		Website:	www.hrdauth.org.cy,
Czech Republic	**Contact person**	Name:	Miroslav URBAN
		Function:	-
		Organization:	Ministry for Regional Development,
		Address:	Staromestské námestí 6, CZ-110 15 Praha 1
		Phone:	+420 224 861 131
		Fax:	+420 224 861 176
		Email:	Miroslav.Urban@mmr.cz
		Website:	http://www.mmr.cz
	Housing	Name:	**State fund for housing development**
		Competency:	housing
		Address:	ul. Dlouhá 13, CZ-110 00 Praha 1
		Phone:	(420) 221 771 611
		Fax:	(420) 221 771 636
		Email:	sekretariat@sfrb.cz
		Website:	http://www.sfrb.cz/
	Energy	Name:	**Ministry of Industry and Trade**
		Competency:	CZ position for implementation of EC Directives on Energy Efficiency
		Address:	Na Frantisku 32, CZ-110 15 Praha 1
		Phone:	(420) 224 851 111
		Fax:	(420) 224 811 089
		Email:	info@mpo.cz mpo@mpo.cz
		Website:	http://www.mpo.cz
		Name:	**Ministerstvo životního prostredí CR**
		Competency:	State Energy Inspection (http://www.sei.cz) ; Energy Regulatory Office (http://www.ceacr.cz)
		Address:	Vršovická 65, CZ-100 10 Praha 10
		Phone:	(420) 267 121 111
		Fax:	(420) 267 310 308
		Email:	posta@env.cz.
		Website:	http://www.eru.cz/
	Development	Name:	**Ministry for Regional Development**
		Competency:	Planning development
		Address:	Staromestske nam. 6, CZ-110 15 Prague 1
		Phone:	(420) 221 771 617
		Fax:	(420) 224 861 333
		Email:	public@mmr.cz
		Website:	http://www.mmr.cz/
		Name:	**The Government Council for Sustainable Development**
		Competency:	Human development
		Address:	nabrezi Edvarda Benese 4, Praha 1 - Mala Strana, PSC 118 01
		Phone:	(420) 224 002 111
		Email:	posta@vlada.cz
		Website:	http://wtd.vlada.cz/eng/vybory.htm

	For further information		• Program of Support for Construction of Rental Housing and Technical Infrastructure http://www.mmr.cz/index.php?show=001026002 • Programme for the Energy Effective Management and the Utilisation of Renewable and Secondary Sources of Energy http://www.ceacr.cz/?download=national_programme.pdf • Government Programme for the Support of Energy Savings and the Utilisation of Renewable and Secondary Sources of Energy http://www.ceacr.cz/?download=government_programme_2004_a.pdf • Energy Policy of the Czech Republic http://www.mpo.cz/scripts/modules/dmsdoc/document.php?lid=3&dlid=3&id=10768 • National Program to Abate the Climate Change Impacts in the Czech Republic http://www.env.cz/www/klima.nsf/0/e4d45341c003b8f6c1256e2e00442c70/$FILE/D-71-04-reviewed%20NPCC.pdf • State Environmental Policy of the Czech Republic http://www.env.cz/osv/edice.nsf/B6FE333C9CC58A04C1256F57002D5CE5/$file/spzp_en.pdf • Czech Republic Strategy for Sustainable Development http://wtd.vlada.cz/files/rvk/rur/final_sds_cr_-_eng.pdf • Low-cost low-energy residential buildings and sustainable urban development http://www.svn.cz/index-a.htm • Low-energy family houses (only Czech web) http://www.svitavy.cz/mes/projekty/holand.htm • LOCOSOC - LOw COst SOCial housing http://www.locosoc.info • Low-energy family houses (only Czech web) http://www.svitavy.cz/mes/projekty/holand.htm
Denmark	**Contact person**	Name: Function: Organization: Address: Phone: Email: Website:	D. BECHMANN - Energistyrdsew, Amaliegarde 44, DK-1256 Copenhague + 45 33 926 700 db@ens.dh http://www.ens.dh
Estonia	**Contact person**	Name: Function: Organization: Address: Phone: Fax:	Monika SORI Excutive Officer Ministry of Economic Affairs and Communications, Harju 11, ES-15072 Tallinn +372 62 56 487 + 372 63 13 660
Finland	**Contact person**	Name: Function: Organization: Address: Phone: Fax: Email: Website:	Martti LUJANEN Director General Ministry of the Environment, P.O. Box 35, 23 Government Finland +358 9 160 39 613 +358 9 160 39 634 martti.lujanen@ymparisto.fi http://www.ymparisto.fi
	Energy	Name: Competency: Address: Phone: Fax: Email: Website:	**Ministry of Trade and Industry** Climate strategy Aleksanterinkatu 4, Helsinki, PO Box 32, FI-00023 Government +358 9 160 01 +358 9 1606 3666 www.ktm.fi/english http://www.government.fi

	Environment	Name:	**Ministry of the Environment**
		Competency:	Environment and energy
		Address:	Kasarmikatu 25, P.O. Box 35, FIN-00023 Government Finland
		Phone:	+358 9 160 07
		Fax:	+358 9 1603 9545
		Email:	forename.surname@ymparisto.fi
		Website:	www.environment.fi
	Statistics	Name:	**Statistics Finland**
		Competency:	Statistics information
		Address:	Työpajankatu 13, Helsinki, FIN-00022 Statistics Finland
		Phone:	+358 9 1734 1
		Fax:	+358 9 1734 2750
		Email:	stat@stat.fi
		Website:	http://www.stat.fi/index_en.html
	For further information		• National Climate Strategy Finland – Government Report to Parliament (Finland Publications 5/2001) (http://ktm.elinar.fi/ktm_jur/ktmjur.nsf/All/CCDA20C55C9000A7C2256A6400218CF2 • Implementation of the National Climate Strategy (Finland Publications 4/2003) • Finland's Third National Communication under the United Nations Framework Convention on Climate Change (http://unfccc.int/resource/docs/natc/finnc3.pdf) • Tekes technology programme website: http://www.tekes.fi/english/programmes/all/all.html • -Motiva website: http://www.motiva.fi/en/ • -Ministry of Trade and Industry, Finland - Energy pages: http://www.ktm.fi/index.phtml?menu_id=198&lang=3&fs=10 • Buildings, Dwellings and Housing Conditions (Housing 2004) • Statistical Yearbook of Finland 2004
France	**Contact person**	Name:	Jean FAURE
		Function:	Chef de projet Energie
		Organization:	Ministère délégué au Logement et à la Ville / Direction générale de l'Urbanisme et de la Construction,
		Address:	La grande arche, paroi sud, F-92055 LA DEFENSE CEDEX
		Phone:	+33 01 40 81 99 73
		Fax:	+33 0 1 40 81 95 30
		Email:	Jean.Faure@equipement.gouv.fr
	Energy	Name:	**Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)**
		Competency:	Environment and energy
		Address:	27, rue Louis-Vicat, 75737 Paris
		Phone:	+33 1 47 65 20 00
		Fax:	+33 1 46 45 52 36
		Website:	http://www.ademe.fr
	For further information		• Lutte contre les changements climatiques, Enjeux et initiatives d'acteurs français, http://www.comite21.org • Ministère de l'Ecologie et du Développement Durable, Plan Climat 2004 • Campagne Plan Soleil : http://www.ademe.fr/htdocs/presentation/aidefinanciere/plansoleil/cesi.htm#CESI • Campagne d'information "Faisons vite..." : http://www.ademe.fr/htdocs/actualite/campagne_energie04/grand_public/presentation.htm
Germany	**Contact person**	Name:	Dietmar MENZER
		Function:	Referent
		Organization:	Bundesministerium für Verkehr, Bau und Wohnungswesen,
		Address:	Krausenstraße 17-20, D-10117 Berlin
		Phone:	+49 30 2008 7142
		Fax:	+49 30 2008 1973
		Email:	ref-b14@bmvbw.bund.de
		Website:	http://www.bmvbw.de

	Energy	Name:	**Deutsche Energie-Agentur GmbH (dena)**
		Competency:	Energy agency
		Address:	Chausseestr. 128a, D-10115 Berlin
		Phone:	+49 30 7261 656 -0
		Fax:	+49 30 7261 656 -99
		Email:	info@dena.de
		Website:	http://www.deutsche-energie-agentur.de
		Name:	**Initiative „zukunfthaus“**
		Competency:	Housing and energy
		Address:	Chausseestr. 128a, D-10115 Berlin
		Phone:	+49-30-726 16 56-0
		Fax:	+49-30-726 16 56-99
		Email:	info@dena.de
		Website:	http://www.zukunft-haus.info/page/index.php?974
	Development	Name:	**Bundesamt für Bauwesen und Raumordnung**
		Competency:	Building and regional planning
		Address:	Fasanenstraße 87, D-10623 Berlin
		Phone:	+49(0)1888.401-0
		Fax:	+49(0)1888.401-8212
		Email:	zentrale @bbr.bund.de
		Website:	http://www.bbr.bund.de/
	For further information		• Sozio-ökonomische Panel (SOEP) des DIW • Förderprogramme http://www.energiefoerderung.info/ • IKARUS http://www.fiz-informationsdienste.de/de/FG/EnergUmw/ika_tmod.html
Greece	**Contact person**	Name:	Dr. Argiro DIMOUDI
		Function:	Specialized Scientific
		Organization:	Ministry of the Environment, Physical Planning and Public Works
		Address:	Trikalon 36 – Mesogeion Aven, GR-115 26 Athens
		Phone:	+30 210 69 10 667
		Fax:	+30 210 69 80 292
		Email:	a.dimoudi@dopk.minenv.gr
		Website:	http://www.minenv.gr
		Name:	Dr. Helene KLISSIOUNI
		Function:	Specialized Scientific Staff
		Organization:	Ministry of the Environment, Physical Planning and Public Works
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		Phone:	+30 210 69 15 194
		Fax:	+30 210 69 15 194
		Email:	c.antonopoulos@dopk.minenv.gr
		Website:	http://www.minenv.gr
	Energy	Name:	**Ministry of Development**
		Competency:	Energy and Natural Res ources, Independent Department of Management of Programmes of the European Union
		Address:	80, Michalakopolou Str., GR-115 28 Athens
		Phone:	+ 30 1 7488447
		Fax:	+ 30 1 7780171
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