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1. Introduction

REMODECE project findings

The overall objective of the REMODECE project was to contribute to an increased understanding of the energy consumption in the EU-25+2 households for the different types of equipment, including the consumers' behaviour and comfort levels, to identify demand trends and to estimate potential savings. The later information was obtained both from the monitoring and surveying campaigns conducted in the participating countries.

In the monitoring campaigns in total 1300 households were measured, and there were 24 categories of domestic appliances that were finally analysed. From the analysis of the metered data the annual electricity consumptions of these groups of appliances were estimated both in country and in EU level. According to the monitoring analysis the EU average annual household consumption for the measured appliances was found to be about 2700kWh/year/household and in country level the EU aggregated annual electric energy in European households was found to be 342936 GWh.

In the surveying campaigns from the collected questionnaires the behavioural trends of the consumers were obtained through a number of questions. For example it was examined whether people knew the energy efficiency class of their appliances or if they are aware of the energy star program, how they handle the standby consumption of the electronic devices, how they usually load their washing machines etc. In each country and for different type of appliances trends differentiate, but for almost all countries except Denmark there is one trend that stands out and that has to do with the fact that most of the respondents didn't know the energy efficiency class of the appliances they owned.

The project has also evaluated the potential electricity savings that exists in the residential sector in Europe. For this evaluation the Best Available Technology (BAT) and the Best Practice (BP) were estimated. The BAT/BP were found either by scanning and analysing the collected data or based on manufacturer specifications or similar information. Hence, the BAT/BP is a combination of Best Available Technology and Best Practice or most economical use of the appliances. In the report this combination is referred as BAT only, even if most of the savings are allocated to Best Practice. The savings from switching from present state to best available technology were estimated to be 1202kWh/year/household and the aggregated annual electric energy savings by using best available technology in European households were found to be 155343GWh. In the analysis the CO_2 emission savings were also calculated and they were found to be 66198kilo Ton per year.

2. Summary

In this report a number of policy recommendations were suggested with most of them being based on the findings of the REMODECE project. Some of the recommendations are general while some of them are specific for each type of appliance. The report also includes a summary of the European legislations concerning domestic appliances and a market review summary for the participating countries, giving some information about national legislations

on energy efficiency of appliances and the available supportive and fiscal instruments in each country.

Firstly the need of re-enforcing the energy labelling scheme was pointed out and some possible solutions were suggested such as placing the energy label on the product or conducting audits at selling points in order to assure that energy labels are correctly exhibited. Additionally, the expansion of the energy label was suggested, in order to include more products and especially TVs and home entertainment equipments.

Moreover the setting of more ambitious Minimum Energy Performance Standards (MEPs) was discussed. Under the energy-using products Directive, minimum energy efficiency standards have been developed for fourteen priority product groups, including motors, computers, street and office lighting, televisions, air conditioning and refrigeration. The standards could be implemented as binding legislative targets or voluntary industry agreements. The example of setting new and stricter requirements already exists for stand by losses, as on the 8th of July 2008, the European Union (EU) member states have endorsed the European Commission's proposal for a regulation reducing standby energy consumption by household and office products. The regulation lays down energy efficiency requirements for all products sold in the EU, thus cutting the EU's standby electricity consumption by almost 75 percent by 2020. Additionally on September of 2008 at the meeting of the Ecodesign Regulatory Committee, EU Member States endorsed the European Commission's proposals for two regulations aimed at reducing the electricity consumption in Europe. The first one targets office, industrial and street lighting products while the second affects the devices that convert digital TV signals to analogue signals, known as simple set-top boxes for televisions. Hopefully similar requirements will be set for more categories of products as well.

In the report it was underlined the fact that there is a need to inform consumers with awareness campaigns about the importance and the benefits of buying energy efficient appliances as well as to inform them about the importance of choosing energy star products when it comes to office equipment. Although both schemes are active for quite some years now, it was found through the surveying campaigns that in many of the participating countries the levels of awareness were low. In parallel it was suggested to organize training programs for retailers giving them also sales arguments.

Changing behavior is maybe one of the best and most effective ways to save energy in the domestic sector. From the analysis of the data collected in the surveying campaigns, consumers' behavioral trends were established through a series of questions that were included in the questionnaires. The identified "false" behaviors were related with most of the domestic appliances and many of these behaviors could change through awareness raising campaigns which will focus on behavioral matters. In the report an attempt was made to give specific suggestions per type of appliance of what the awareness campaigns in each one of the countries could address to.

Finally it was examined which type of incentives could be given to consumers in order to speed-up the market introduction of new energy efficient products. Some of the characteristic of the incentives were described. Energy efficiency could be promoted with demand side management programmes and with the white certificate schemes.

3. EU relative policies and legislation

The fact that the domestic sector has an important share in the total energy demand in the European Union, 25% of the final energy needs in the EU accounts for households [http://ec.europa.eu/energy/demand/legislation/domestic_en.htm], has been well recognized for many years now in the EU level and there is a series of European Directives which try to deal with this important issue.
The EU legislation covers the domestic electricity demand in three main categories: legislation on energy labeling of domestic appliances, legislation on minimum efficiency requirements, legislation on Eco-design of energy using products and there are also the energy-star programs for office equipment. Below follows a list of the existing EU legislation.

	Directives	
Energy labeling of domestic appliances	**92/75/EEC**	On the indication by labelling and standard product information of the consumption of energy and other resources by household appliances.
	94/2/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household electric refrigerators, freezers and their combinations.**
	95/12/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household washing machines.**
	95/13/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household electric tumble driers.**
	96/60/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household combined washer-driers.**
	96/89/EC	(Amending Directive 95/12/EC implementing Council Directive 92/75/EEC) with regard to energy labelling of **household washing machines.**
	97/17/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household dishwashers.**
	98/11/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household lamps.**
	1999/9/EC	(Amending Directive 97/17/EC implementing Council Directive 92/75/EEC) with regard to energy labelling of **household dishwashers.**
	2002/31/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household air-conditioners.**
	2002/40/EC	(Implementing Council Directive 92/75/EEC) with regard to energy labelling of **household electric ovens.**
	2003/66/EC	(Amending Directive 94/2/EC implementing Council

		Directive 92/75/EEC) with regard to energy labelling of **household electric refrigerators, freezers and their combinations.**
Minimum efficiency requirements	**92/42/EC**	On efficiency requirements for **new hot-water boilers fired with liquid or gaseous fuels.**
	96/57/EC	On energy efficiency requirements for **household electric refrigerators, freezers and combinations thereof.**
	2000/55/EC	On energy efficiency requirements for **ballasts for fluorescent lighting.**
Eco-design of Energy-Using Products	**2005/32/EC**	Establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council.
Energy Star Programme - Office equipment	**2001/469/EC**	Council Decision of concerning the conclusion on behalf of the European Community of the Agreement between the Government of the United States of America and the European Community on the co-ordination of energy-efficient labelling programmes for office equipment.

As it can be seen the energy labelling directives cover a wide range of domestic appliances (white appliances, airconditioners and lamps). The energy labelling scheme is in force for many years in Europe and it has achieved over the years high recognition. Recently the Energy Labelling Framework Directive 1992/75/EEC has gone under revision by the European Community, and many stakeholders were asked to give their opinion for this process. Now the consultation is closed and the final revision is been expected.

In the other hand there is the most recent eco-design deirective which aims to improve the environmental performance of products throughout their life-cycle by systematic integration of environmental aspects at a very early stage in the product design. Most of the preparatory studies for ecodesign of energy using products (EuP) are already finished and they are expected to contribute to the next steps of Eco-design process. The preperatory studies contain among others Economic and Market analysis, technical analysis, BAT and Policy analysis. Below is given a list of those studies.

	Study	**Website**	**Status**
1	Boilers and combi-boilers gas/oil/electric)	http://www.ecoboiler.org/	completed
2	Water heaters (gas/oil/electric)	http://www.ecohotwater.org/	completed
3	Personal Computers (desktops &	http://www.ecocomputer.org/	completed

	laptops) and computer monitors		
4	Imaging equipment: copiers, faxes, printers, scanners, multifunctional devices	http://www.ecoimaging.org/	completed
5	Consumer electronics: televisions	http://www.ecotelevision.org/	completed
6	Standby and off-mode losses of EuPs	http://www.ecostandby.org/	completed
7	Battery chargers and external power supplies	http://www.ecocharger.org/	completed
8	Office lighting	http://www.eup4light.net	completed
9	(Public) street lighting	http://www.eup4light.net	completed
10	Residential room conditioning appliances (airco and ventilation)	http://www.ecoaircon.eu/	
11	Electric motors 1-150 kW, water pumps (commercial buildings, drinking water, food, agriculture), circulators in buildings, ventilation fans (nonresidential)	http://www.ecomotors.org	ongoing
12	Commercial refrigerators and freezers, including chillers, display cabinets and vending machines	http://www.ecofreezercom.org	completed
13	Domestic refrigerators and freezers	http://www.ecocolddomestic.org/	completed
14	Domestic dishwashers and washing machines.	http://www.ecowetdomestic.org/	completed
15	Solid Fuel Small Combustion Installations	http://www.ecosolidfuel.org	ongoing
16	Laundry driers	not available yet	
17	Vacuum cleaners	not available yet	
18	complex set top boxes (with conditional access and/or functions that are always on)	http://www.ecocomplexstb.org/	completed
19	Domestic lighting	http://www.eup4light.net	completed
Last update: 9/2008			

Under the energy-using products Directive, minimum energy efficiency standards have been developed for fourteen priority product groups, including motors, computers, street and office lighting, televisions, air conditioning and refrigeration. The standards could be implemented as binding legislative targets or voluntary industry agreements.

According to a recent press release (IP/08/1419), on September of 2008 at the meeting of the Ecodesign Regulatory Committee, EU Member States endorsed the European Commission's proposals for two regulations aimed at reducing the electricity consumption in Europe. The first one targets office, industrial and street lighting products while the second

affects the devices that convert digital TV signals to analogue signals, known as simple set-top boxes for televisions.

The first measure targets lighting products typically used in street, office and industrial lighting: fluorescent lamps, high-intensity discharge lamps and related ballasts and luminaires. The regulation will reduce by up to 15% the electricity consumption of this equipment in the EU, which is assumed to rise to 260 TWh per year by 2020 without legislation. The annual savings are equal to 38 TWh (roughly the annual electrictity consumption of Romania) and would lead to approximately 15 Mt CO2 emission reduction per year.

The second measure aims at reducing the energy consumption of simple set-top boxes which are used to convert digital broadcasting signals into analogue signals suitable for TV sets commonly used in EU households. Due to the ongoing transition from analogue to digital broadcasting in the EU, the sales and associated energy consumption of these devices will sky-rocket over the coming years. The power consumption limits laid out in the regulation will allow reduction from 14 TWh to 5 TWh by 2014 when the use of simple set-top boxes will peak. By 2020, when these devices disappear from the market as old TV sets are replaced by new ones, adapted to digital broadcasting, 47 TWh should be saved, this exceeds the annual electricity generation from nuclear power in Finland and Slovakia combined. The measure will also translate into concrete benefits for the consumer reducing the life-cycle cost of these devices by approximately 30%.

The regulations will now be scrutinised by the European Parliament. They are scheduled for formal adoption by the Commission in January 2009. Further Eco-design measures will follow in the coming months to cover more product groups such as lamps used in the domestic sector [http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1419].

In most of the countries the implementation of the **EPBD** (Directive on the energy performance of buildings - **2002/91/EC**) and the **ESD** (Energy Services Directive – **2006/32/EC**) which is expected to affect the market of energy services, will also affect parameters such as energy efficiency in lighting, installations for heating and hot water etc, allowing for energy efficient systems to be more easily promoted. There are provisions in the ESD (e.g. setting specific standards for public procurements of appliances) as well as in the EuP directive (Eco-design of Energy-Using Products – 2005/32/EC), which concern possible minimum energy efficiency requirements. According to the ESD, member States shall adopt and aim to achieve an overall national indicative energy savings target of 9 % for the ninth year of application of the Directive. For this reason Member States have submitted National Action Plans where they describe how the will achieve the set target. The residential sector can contribute to the overall target through enegry efficient white appliances, entertainment/ information appliances and lighting.

4. Market review of partner countries

In order to have a better understanding of the situation in all the participating countries, information were gathered in what concerns the available legislation in each country, the fiscal and supportive instruments for energy efficient appliances, problems that are identified and the highlights in each country. The information gathered per country can be found analytically in Annex I while in this chapter the main characteristics are summarized for all countries.

4.1 National Legislation

A general review of the markets of 12 European Countries demonstrates a high degree of regulatory measures as regards energy efficiency. All the participating European Union countries have transposed the energy labeling directive into national legislation, in order to support the penetration of energy efficient appliances. However, not all of them report to be satisfied on its reaching the target. Depending on their level of awareness, some countries (FR, PO, BG) seem still concerned with the customers focusing on the retail prices rather than energy classes while others (DE, CZ) report an increase in total sales of energy efficient appliances.

4.2 Fiscal Instruments

The use of fiscal instruments aiming directly at energy efficient appliances is limited across Europe and in some countries there is no application of such fiscal measures whatsoever (RO, FR, BG, NO). However since in most of the countries several other fiscal instruments supporting energy efficiency and renewable energy projects are already available and in use, an addition could be made in those instruments so as measures for energy efficient appliances and lighting to be included as well.

In the rest of the countries (PT, GE, DE, CZ, GR, IT, BE, HU) the fiscal instruments available are in the majority tax incentives and rebates/ subsidies for specific energy efficient appliances. These comprise to:

Tax incentives:

- The Eco tax on lamps (incandescent bulbs): It’s an environmental disposal tax applied to several appliances and incandescent lamps, applied in Portugal and Belgium.
- The Italian Finance Act of 2007 and 2008 which allows the replacement of refrigerators, freezers and combinations thereof by similar appliances of energy class not inferior to A, with a gross tax deduction equal to 20% of the amounts remaining payable by the taxpayer, up to a maximum deduction of 200 € per appliance, in a single installment (up to 2010). In Italy from 2010 it will not be allowed anymore to sale electrical appliances of classes below A and of electric motors in Class 3. From

2011 the sale of incandescent light bulbs and of appliances without on/off power switch will be also banned.

- In France, incandescence lights bulbs will disappear. Of the month of next June 09, we should only find incandescence lamp under 100W with a total cancellation of the sells in 2012. In the same time, CFL will be promoted with very attractive prices thanks to an agreement with EDF, ADEME, Ministry of Ecology and Recyclium ("law Grenelle 1")
- The German eco-tax reform. This measure which increased the electricity price also includes a tax on electricity and therefore has an impact on running costs of electrical appliances.
- The Greek Ministerial Decision of 2006 which concerns, among other incentives and escalation of electricity prices, the lower electricity prices for the consumers in the residential sector, who will manage to reduce their electricity consumption by at least 4%.
- The Denmark taxation on lighting sources added to the sales price, according to which CFL lamps have no tax imposed, while all other types of lamps do have. This can be seen as an energy efficiency effort but there is a lack of no tax for fluorescent tubes and metalhalide lamps.

Rebates/ subsidies

- In Czech Republic two major electricity suppliers (E.ON and Pražská energetika Group) presently offer to its residential customers price reductions for energy efficient appliances (e.g. electric water heaters, white goods), if purchased at associated dealers.
- In the Brussels Region there is a rebate (not fiscal but direct subsidy paid after the sale) for energy-efficient appliances: A+ and A++ class efficiency freezers and refrigerators (100 € and 150 € respectively), A/A/A: washing machines (100 €), tumble dryers (100 €) and gas tumble dryers (400 €).
- In Flanders the utilities give a rebate (subsidy) of 250 € for gas tumble dryers and for domotica (home automation) (100 €).
- In Denmark, there have been campaign periods with rebate for buying A, A+ and A++ class efficiency appliances. The campaigns have been run by the utilities and/or the Electricity Saving Trust.
- In Portugal, a discount of 35 € is given to those buying Energy Efficient Refrigerators (A+ and A++).
- In Germany, there have only been a few smaller subsidy programs for the purchase of efficient white appliances and household lamps initiated by some electricity utilities.

4.3 Supportive Instruments

Information campaigns have long gone hand in hand with the regulatory measures in all the consortium countries. These campaigns were initiated/ raised in most cases by the state (e.g. Ministries), local energy agencies, large utility companies or associations either on national or local level. All of the countries have implemented campaigns in order to inform consumers on the benefits of energy efficient white appliances. These campaigns had a variety of forms, such as TV spots and advertisement in the media (IT), handing out of brochures and leaflets with useful tips (PO, GR, RO) or programs that passed information to specific target groups e.g. school-kids (HU). The websites of energy agencies and utilities were used as well, where people could find information and useful tips concerning energy efficient appliances and behavioral issues (FR) - in France, a huge national campaign financed by ADEME and the Ministry of Ecology has begun since this summer 08. This campaign gives some information on how to “equip your house”, “move”, “housing” with a saving energy message. TV spots, Radio spots and a well documented website (http://www.faisonsvite.fr) are the supports of this communication campaign. Why using energy saving bulbs is part of the topics. In some cases (BE, DK) websites have been .constructed in order to help consumers to find the most efficient appliance, or to evaluate their existing one.

Initiatives were taken and information campaigns were raised, for promoting energy efficient lighting as well. For example, CFL lamps were distributed to people, and in some cases the prerequisite for taking a CFL was to hand in an incandescent lamp. On the other hand, there is a limited number of campaigns (DE, DK) concerning stand-by mode of equipment. Training schemes of retailers have also been used in some countries (FR, GR) as it has been noticed that the mandatory energy labeling of appliances often is not well promoted as a result of inadequate information provided to the salespeople.

It is, however, very difficult to assess the single impact of information campaigns on electricity savings and to separate it from legislative measures as the mandatory labeling and minimum efficiency standards. Nevertheless, there is no doubt that especially the information programs are important accompanying measures, which cannot be fully substituted by legislative measures. Besides, information programs can also aim at behavioral savings options, whereas minimum efficiency standards and labels mainly aim the market transformation, i.e. to enhance the production and sales of efficient appliances. In regard with measures aiming at the using behavior of consumers, the highest degree of uncertainty lies in the durability of this kind of measures.

4.4 Problems Identified

Most of the partners in the consortium, report that they are not satisfied by the supportive instruments available in their countries up until now. The energy labeling alone proved to be inadequate to promote energy efficient appliances. The need for accompanying measures such as raising awareness and information campaigns in what concerns the benefits of

efficiency as well as incentives to the end users, are considered to be necessary, in order to achieve market penetration of efficient appliances. This need is getting even greater in countries were the electricity price is low (BG, NO) and the economic gain of using energy efficient appliances is not so obvious to consumers. In these countries the savings from the purchase of high-energy efficient appliances are not comparable with the price difference and the pay back period which is estimated to be relatively too long.

Some countries report problems regarding the electricity taxation. Specifically, in Denmark the taxes on electricity consumption for domestic customers are very high (all taxes plus VAT together constitute more than half of the domestic electricity price). Anyhow, only a small part of the taxes imposed are used to promote and support electricity savings. In Belgium the electricity prices are high, and there is no political will to impose higher taxes, while in Czech there are some problems identified in the existing tariff structure. Basically, the tariffs for residential customers differentiate between use of electric energy “only” for standard purposes (lighting, domestic appliances) and also for meeting heat energy needs (hot water preparation, heating). As a result, those, who use electricity just for basic purposes, may have as much as two times higher unit price of energy supplied/consumed than those who use it also for production of heat for the same amount of electricity consumed. Such a practice does not motivate household consumers to use electricity in a rational way.

Another problem identified in Bulgaria, is that there is no effective procedure for verification of the compliance with the ordinance of labelling. Moreover it is assumed that there is a practice of false labels. This includes misrepresentation of information, false and misleading information, etc.

Some countries report that there is a lack of high efficiency appliances in the market such as A++ refrigerators, washing machines and dishwashers which are not easily available in the market (PO, GR).

4.5 Highlights of successful case studies

- Personalized advisory services (DK, CZ, DE)
- Combined introduction of the mandatory EU energy label and a rebate + information campaign by the utilities in the Flanders region for class A appliances in the period 1997-1999 (BE)
- Specified national action plans for an appliance and equipment energy labelling program, by informing and involving market parties, especially manufacturers / importers, retailers and consumers (BG)
- State Investment programme that subsidised 20% in heat pumps (NO)
- Voluntary agreements (FR) to support all the different new EUP proposals (stand-by, TV, etc.) and implement them rapidly even before the promulgation by the European commission (Law “Grenelle 2” in process).

Exemplar case study raising awareness

The Energy efficiency initiative (Initiative EnergieEffizienz) of the German Energy Agency was an awareness raising campaign which has been organised as a public/private partnership project in co-operation with energy supply companies and was supported by the Federal Ministry of Economics and Technology (BMWi). Retail trade and craftsmen, existing consumer advice centres and regional energy agencies were also integrated in the concept of the campaign. The main aim of this campaign was to inform the private consumers about energy saving possibilities and energy costs reductions in the field of electrical household appliances, with a special focus on brown goods and office equipment (on-mode and standby mode), lighting and white appliances.

Exemplar case study providing financial incentives

The Italian case with the replacement of refrigerators, freezers and combinations thereof by similar appliances of energy class not inferior to A+ Gross tax deduction equal to 20% of the amounts remaining payable by the taxpayer, up to a maximum deduction of €200 per appliance, in a single installment. The goal was to achieve 1210GWh of savings until 2010.

5. Recommendations

5.1 Revision of the energy labelling scheme

Since the introduction and implementation of the energy labelling Directive, European consumers have on the one hand become familiar with the A-G energy label but on the other hand in everyday life (as the analysis of the REMODECE survey campaign suggests) there is a large number of households that don't know about the efficiency level of their appliances. Of course, the A-G energy label scheme during the years has achieved a high recognition due to its simplicity, transparency and comprehensibility and it is considered to be a valuable instrument that can promote energy efficiency and deliver significant energy and carbon dioxide savings within the community. Thus it is very important that the energy label and its main characteristics should be retained in any future attempt of adapting the energy label. However, A-G ratings have become obsolete, as the improvement in energy performance that many products have undergone in the last years, is significant. The best examples of this are in the refrigeration and washing machines labels: for refrigeration new labels were uniquely introduced at A+ and A++ and in the European washing machine market, virtually all of the products are now A-rated [ecee, 2008]. So, there is a need to adapt the existing scheme in order to update it in a flexible and more dynamic way, but always bear in mind that the changes made should not confuse the consumers.

Feeling this need and in general the need for renewal, the European Community has made a call for stakeholders consultation on the revision of Energy Labelling Framework Directive 1992/75/EEC. This consultation is now closed and many stakeholders such as National Governments and Administrations, European Associations and Groupings, Industry and others have expressed their opinion on a series of matters. Among others the matter of adapting the energy label towards a more dynamic scheme was raised. Many of the stakeholders (e.g. ANEC, BEUC, CECED, ECEEE, Eurocommerce, FIEEC) recognized the need of updating the energy label on their comments and some of them (e.g. CECED)

suggested the exact changes that need to be made. Now the consultation is closed and the forthcoming revision is expected.

Some other possible solution could be placing the energy label on the products. As it is already known the energy labeling directive assures the mandatory exhibition of the energy labels at the selling points. The provision of accurate, relevant and comparable information on the specific energy consumption of household appliances is considered to influence the consumer's choice in favor of those appliances which consume less energy. By placing the energy efficiency label on the domestic appliance the importance of the information it bears would be outlined and the electricity consumption would become one of the main features of the appliance. Thus, this is a way to reinforce the significance of the energy class and make the consumers realize that energy efficiency is indeed a feature which is bonded with the entire lifespan of their appliances. They must become aware of the fact that their decision whether to buy or not an efficient appliance is something which will affect them not only while buying the appliance by adding an extra cost, but for all the years that they will own and operate it.

Additionally for re-enforcing the energy labeling scheme audits should take place in the selling points in order to assure that energy labels are correctly exhibited and to assure that the retail staff is informed adequately about energy labels so as to be able to provide right information to consumers.

5.2 Expansion of the energy label in order to include more products and setting more ambitious Minimum Energy Performance Standards

Up until now, the energy labelling scheme referred to white appliances, light bulbs and air-conditioners. Recent market surveys [Schlomann, 05], have shown that the household electronics market has increased significantly in the EU countries in the last years. In the REMODECE project, the ownership levels of different appliance types in EU level were calculated based either on data gathered from the surveys or on national statistics. The ownership levels for the metered electronic devices are displayed in the following table. As it can be seen most of these appliances have high ownership percentages. Nevertheless one must bear in mind that some of the ownership levels, e.g. for desktop PCs + monitor, are presented to be in general higher than they really are, because in the monitoring campaign it was aimed to monitor households which owned ICT equipment.

Appliance Groups	**All Countries Average ownership level (%)**
Desktop PC including monitor	78,9
Laptop PC	41,9
Router for Internet	47,9
Wireless access point	33,0
Printer	66,9
TV CRT	92,6

TV LCD	22,5
TV Plasma	8,8
DVD recorder/player	66,6
Hi-Fi	71,5
Satellite/cable/air set top box	41,1

Thus, taking into consideration the increasing electronic loads in households, an expansion of the energy labelling scheme should be considered, in order to include and other goods such as TVs and in general entertainment equipment. Moreover in most of the participating countries a bad knowledge of the Energy Star label was established, pointing out that an extension of the scope of the label should be considered.

Another aspect of the electronic appliances is the standby consumption which is proven to be an important contributor to their total annual consumption. From the analysis of the metered data it was found that the share of the annual standby consumption in the total annual consumption of some appliances was relatively high. For example for CRT TVs, DVDs and Desktop PCs + monitors this share was around 10% and for Hi-Fi sets it was around 17%. The potential of energy savings that lies in these standby consumptions can be achieved with setting stricter requirements for standby power, besides of course with the change of consumers behaviour that can also lead to energy savings.

Aiming in this direction, in the 8th of July 2008, the European Union (EU) member states have endorsed the European Commission's proposal for a regulation reducing standby energy consumption by household and office products. The regulation lays down energy efficiency requirements for all products sold in the EU, thus cutting the EU's standby electricity consumption by almost 75 percent by 2020. The rule applies to all electric devices used in households and offices, such as television sets, computers and microwave ovens. Depending on the functionality of the product, it sets a maximum allowed standby power consumption of either 1 or 2 watts for the year 2010. As of 2013, the admissible power consumption level will be lowered to 0.5 or 1 watt [http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1117&].

The above mentioned proposal is a very optimistic step and there should also be an attempt to upgrade existing Minimum Energy Performance Standards (MEPs) based on the EuP studies as well as to develop new MEPs based on lifecycle cost considerations.

Setting MEPS is also urgently needed for air conditioning equipments being sold in Europe. In the last years residential air conditioning load is increasing fast and is already a major contributor to summer peak demand in the Mediterranean countries. In addition to that the European air conditioning market has been flooded with very low cost and very inefficient units. Thus, strict MEPs should be applied in the air-conditioning equipments, and those equipments that don’t meet the set requirements should be banned from the European market (it is observed that low efficient air conditioning units that are not allowed in China and Japan are invading the European market).

5.3 Recommendations for raising awareness about labeling schemes

Through the survey conducted in the framework of the REMODECE project, it became obvious that even though energy labeling is a well known and accepted scheme that is active for quite some years now, work still needs to be done in the area of consumer's awareness. The results of the surveying campaigns might not be representative of the situation in each of the countries due to the small samples, but they sure are indicatives of some trends. In specific, two trends that were established from the survey are that there is lack of awareness first in what concerns energy labeling and second in what concerns energy star products.

- § Inform consumers with awareness campaigns in any form (TV spots, brochures etc) about the importance and the benefits of buying energy efficient appliances.

In all the countries of the consortium, except Denmark where the percentages are between 15% and 25% depending on the type of the appliance, the vast majority of the people answers: "I don't know the energy efficiency class of the appliances I own". The leading countries in people who answers "don't know" are Bulgaria, Greece, Germany, Belgium, Portugal, Hungary, France, Italy and Norway and then follows Romania and Czech Republic. Depending on the electric appliance (fridge/freezer, washing machine, tumble dryer, dish washer) the percentages vary from 30% to 80%. Some of the worst examples are: for freezers Bulgaria and Portugal, with the percentage climbing up to 80%, for washing machines Bulgaria and Greece with 60% and for dish washers Greece, Germany and France with almost 55%.

- § Inform consumers about the importance of choosing energy star products when it comes to office equipment and organize training programs for retailers giving them also sales arguments.

Energy star products save energy by incorporating advance technologies that use less energy than standard models. In specific for office equipment, the energy is saved through special energy-efficient designs, which allow them to use less energy to perform regular tasks, and automatically enter a low-power mode when not in use [www.energystar.gov]. In the surveying campaign when people were asked about the importance of the energy star label when purchasing office equipment, the awareness level showed big variations among the participating countries. In Germany, Belgium, Hungary, France and Romania people stated that they don't know whether or not they buy energy star products in percentages that varied between 8% and 45%. That fact indicates that there is lack of awareness not only among the consumers but among the retailers as well. The consumer's lack of awareness can also be seen by the percentages of people that answer that they never choose to buy energy star office equipment. Italy and Czech Rep have percentages reaching almost 60%, France follows with 50% and the rest of the countries have percentages between 10% and 40%.

5.4 Recommendation based on behavioral trends

Changing behavior is maybe one of the best and most effective ways to save energy in the domestic sector. From the analysis of the data collected in the surveying campaigns, consumers' behavioral trends were established through a series of questions that were included in the questionnaires. The identified "false" behaviors were related with most of the domestic appliances and many of these behaviors could change through awareness raising campaigns which will focus on behavioral matters. Below are given some ideas per type of appliance, of what the awareness campaigns in each one of the countries could address to.

Fridge/freezers

For fridge/ freezers some of the false behaviors had to do with putting inside the fridge warm food or not covering the dishes before placing them inside the fridge. In most of the countries the majority of the answers were of the right behavior but in few countries there were some exceptions with the false behavior standing out a little more. Such cases were Hungary(49%), Denmark(36%), and Germany(23%) with putting warm food inside the fridge and Belgium(75%) and Czech Republic(71%) with not covering the dishes. In these cases extra care must be given in the awareness raising campaigns.

Washing machines/ dish washers/ tumble dryers

In the awareness campaigns one of the things that should be addressed is the usual loading of the washing machines. One way of saving energy is by washing in full loads. The survey showed that in most of the countries the percentages of the washing machines loaded up to the 50%-75% of their capacity vary from 10% to 50%. In Romania this percentage is climbing up to almost 94% so extra notice should be given in this country on the importance of using the machines when full loaded.

Home entertainment

In Germany, France, Norway and Belgium the percentage of people turning of the TV with the on/off button are not very disappointing, varying from 65% to 80%. In the rest of the countries people tend to leave their TVs in stand by mode more often (e.g. 90% in Bulgaria, 85% in Romania). Nevertheless, in all the countries exists potential for changing behavior in what concerns the standby mode so this is something that should be included in all the countries' information campaigns.

Office equipment

Also for office equipment one of the most important issues that must be addressed in the awareness campaigns, is the handling of the standby consumption. Among the devices checked in the surveying campaigns, modems and routers were the ones left on "on mode" and "standby mode" more frequently than all the other devices. Desktops, laptops and monitors are also left on standby mode in percentage that varies between 9% and 27%. In Romania with 21% and Germany with 13% there were some significant percentages of respondents who leave the computer on due to worries about damaging it. Such

misconceptions must be eliminated through the information campaigns. Another misconception that exists has to do with the use of the screen saver, as in some countries (e.g. Italy (93%), Czech Republic (82%) and Bulgaria (81%)) people think that the activation of the screen saver saves energy.

Air-conditioning

Leaving doors and windows open while cooling or heating a room and setting the temperature lower than 26^{o}C during summer months are issues that must be included in the awareness raising campaigns. In Greece only 23% of the people set the temperature of the air-condition above 26^{o}C. And there is a 13% of people that sets the temperature below 18^{o}C, which a totally false behavior.

Lighting

According to the survey there are people that never choose to replace damaged light bulbs with CFLs. In some countries this percentage is relatively high such as in France with 37% or Bulgaria and Hungary with a percentage around 30% and in the rest of the countries the percentages are lower varying around 10%. The fact that there are people nowadays denying to use CFLs, shows that not only they are not well informed about the benefits of their use but most like they have many misconceptions about CFLs. From the people who never choose to replace damaged bulbs with CFLs most of them give price as the main reason for doing so. Maybe in the awareness raising campaigns there should be outlined that their lifespan is much longer than incandescent bulbs (6 to 12 times longer) and of course their running costs are much lower.

In Romania 65% of the people, answers that they often or always leave the lights on in unoccupied rooms. This is a very high percentage not seen in any other country (in the rest of the countries this percentage is around 5%) so additional attention should be given in this country in order to change this false behavior. Of course attention should be given in the rest of the countries as well, since there are people who answer that they “sometimes” leave the lights on in unoccupied rooms (Norway with 72%, Germany 59% and the rest of the countries between 30% to 40%).

An overall point that should be underlined in all the awareness raising campaigns independent of the country, is the matter of efficiency together with sufficiency. It is not only important to inform and motivate people in buying energy efficient equipments, but also to draw their attention on sufficiency. A very common trend nowadays is to oversize the equipments bought, either due to certain lifestyle image that people want to maintain or due to the fact that for some appliances (e.g. flat TVs) the price doesn’t differentiate that much if you go to the larger size. Buying larger units is very common for fridges and TV sets. According to the REMODECE monitoring analysis it was found that conventional televisions use about 125 kWh, LCD TVs uses about 190 kWh and for Plasma TVs it was found that it uses 400 kWh in average (but this number with a 19% confidence interval was not considered to be trustworthy). In average plasma TVs are bigger than LCD TVs, which are bigger than CRT TVs, and much of the consumption differences were explained by size. It can be seen that although there is a shift towards LCD and Plasma TVs, which are more

efficient than conventional CRT TVs, and that is a good thing, because of choosing larger screens the consumption of flat TVs is appearing to be larger compared to conventional TVs consumption. So, it is well understood that sufficiency plays an important role in saving energy and it should be addressed in all awareness raising campaigns.

Finally taking in mind the successful example of the German awareness raising campaign (Initiative EnergieEffizienz), it is important to make sure in all the countries where the awareness raising campaigns will be organized, that all the engaged parties (private, public, energy agencies etc.) will be involved in order to achieve the best dissemination results.

5.5 Incentives to consumers

- Combine technological advancement (introduction of new products) with financial incentives: speed-up of market introduction.

From the monitoring analysis it was found that the biggest share of savings potential among the metered appliances lies in the following categories: in cooling appliances (for refrigerators with freezer compartment the savings are estimated to be 182kWh/year/household and for freezers 162kWh/year/household), in desktop PCs including monitors where the savings are 139kWh/year/household, in oven/cookers with 103kWh/year/household and in lighting with 303kWh/year/household. Thus for these categories of appliances incentives for switching to best available technology should be given, as they will deliver important reduction to electricity consumption. An additional solution could be the example of Italy where from the year 2010 it will not be allowed any more to sale electrical appliances in classes below “A” and from 2011 it will be also banned to sale incandescent light bulbs and appliances without on/off power switch. For lighting, one other possible solution in order to speed up market transformation could be the establishment of taxes related to inefficiency into the price of the lamp. According to that solution an incandescent light bulb will have the higher price, due to tax impose while efficient CFL lamps will be tax free, leading to a low price.

- Financial or other type of incentives for replacement of old appliances, older than 10 years.

In the survey campaign the age structure of a number of appliances was examined. In most of the countries white appliances such as fridge, freezers, washing machines, tumble dryers etc. were found to be older than ten years in percentages that in some cases reached 50%. The only country that has very low percentages (1%-3%) of appliances older than ten years appears to be Denmark. So, in the rest of the countries the issue of giving incentives to consumers to replace their old appliances should be carefully addressed.

Some of the characteristics that the incentives should have are given below:

- Reducing VAT on highly energy efficient products is not one of the best solutions, as this measure lowers the price of the product to the eyes of the consumer and creates

a false perception that energy efficient products don't have an extra cost (people usually retain the gross price of a product and don't look whether the reduced price is the result of a reduced VAT or not). The signal that should be sent out is exactly the opposite, meaning that energy efficiency has a value. So, it is better if the financial incentive is given in an indirect way in the form of personal tax credits or rebates.

- If the incentives given to consumers are in the form of rebates and subsidies, then it must be assured that they will be given only for appliances with small market penetration and only for best available technologies. It is also important when giving a subsidy to have a fixed amount of money (xxx euro/appliance) in order to avoid over sizing, as people tend to buy larger appliances if the amount of the subsidy depends on the size.

Utility energy efficiency programmes have been in place for many years. The early schemes were known as demand-side management (DSM) programmes and were implemented by vertically integrated utilities answerable to utility regulatory authorities in the form of public utility commissions (PUCs). Under such schemes utilities were required to allocate a certain proportion of their revenue to finance energy efficiency efforts, which were commonly delivered in the form of rebates aimed at lowering the cost of more efficient energy-using equipment at the point of purchase [P. Waide & B. Buchner, 2008]. So, demand side management programs from utility companies, also considered in the ESD directive, could lead in giving incentives to consumers. These incentives could be some of the aforementioned like rebates and subsidies for replacement of old appliances or for buying state of the art energy efficient appliances and lighting. Another possible solution for utility companies could be to amend electricity prices with a view to reward energy savings:

- In open markets if utility companies have a fixed price independent from electricity consumption, introduction of the proper taxation could lead to escalated electricity prices that reward energy savings (change in behavior, efficiency).

- Introduction of smart metering technology. In general a smart meter identifies consumption in more detail than a conventional meter; and optionally, but generally, communicates that information via some network back to the local utility for monitoring and billing purposes. From the consumer's point of view an advantage of a smart meter could be the fact that the consumer could have a display of the consumed electricity and this way would be able to connect possible "false behaviors" (e.g. using an air-conditioning unit instead of a ceiling fan, leaving the lights on in unoccupied rooms, etc.) with increased electricity consumption.

Another type of incentive for market transformation could be the one that CECED suggests and addresses the manufacturer's side. In specific CECED suggests that tax credits should be given to manufacturers. The tax credits philosophy is to grant to the manufacturer a fiscal benefit for each new eco-efficient product, for example Class A+ or A++ refrigerators, manufactured and sold that is above what was manufactured and sold in a reference year. The consumer would benefit from buying a technologically advanced product in a highly competitive market. By reducing the amount of taxes paid, producers of household appliances will have the resources to offer new products at competitive prices, which,

combined with appropriate marketing and information campaigns, will lead to consumers replacing their appliances at a quicker rate [CECED, PP 06-08, Manufacturers tax credits – A "win-win-win" scenario for government, consumer and industry].

5.6 Public sector's exemplary role

The public sector of each country, in particular social, housing, should play an exemplary role, since it will help low income families to decrease their electricity costs. Other public buildings in the services sector can also improve awareness in the selection of energy-efficient equipment (e.g. in what concerns lighting, A/C, office equipment).
Moreover in the context of the Energy Service Directive Member States shall ensure that the public sector fulfils an exemplary role. The public sector may, for example, initiate energy-efficiency pilot projects and stimulate energy-efficient behaviour of employees. To this end, they shall communicate effectively the exemplary role and actions of the public sector to citizens and/or companies, as appropriate. Finally the ESD can help residential customers realize energy savings and their monitoring and verification. One possibility is via the system of white certificates.
There is increasing political interest in market-oriented schemes to promote energy savings in the sectors not covered by the EU Emissions Trading Scheme (EU ETS) and one suggested route is a tradable white certificate (TWC) scheme. Each certificate represents a certain amount of energy savings achieved through, for example, better insulation of a building [Energy Efficiency (2008), 1:283-295].

A (tradable) white certificate scheme does not replace but complements existing policies and measures, and aims to contribute to achieving current or newly formulated EE targets in a cost-effective way. As a representative of a set of market-based instruments in the European internal market it builds upon experiences with similar types of schemes such as the EU emissions trading scheme and green certificate schemes [Publishable Result-oriented report, EuroWhiteCert. Project, EIE/04/123/S07.38640].

In Europe several countries have already implemented a WhC scheme or are seriously considering doing so. Italy has started a scheme in January 2005; France a year later. Great Britain has combined its obligation system for energy savings with the possibility to trade obligations and savings (only among the obliged parties and through bilateral contracts). Denmark and the Netherlands are, or at least have been, seriously considering the introduction of a WhC scheme. Flanders (Belgium) has implemented an energy saving obligation for energy grid companies without tradability of certificates [Publishable Result-oriented report, EuroWhiteCert Project].

With respect to energy efficiency in the household sector WhC scheme could implemented on projects promoting the use of energy efficient lighting and energy efficient household appliances, including air conditioning. An example of such a scheme is the promotion of the use of CFLs in the household sector that has been applied in France by ADEME, EDF and others relevant parties.

6. Tips to save electricity

In this chapter few tips for saving electricity are going to be presented. More tips addressing each type of appliance, are given in the REMODECE brochure that is produced in each of the participating countries (in their national languages).

- Turn off the lights before leaving home.
- Replace your indoor and outdoor incandescent lamps with CFLs. Initial cost of the bulbs is higher but you will recover your investment from the electricity that they will pay for themselves several times over, as they last much longer than incandescent bulbs. Also consider using new LEDs lamps to replace halogen lamps.
- Buy Class A or higher efficiencies (A+, A++) appliances.
- Use washing machine and dishwasher with full load (but don't overload). Use cold water washing whenever possible (or the coolest wash temperature that provides acceptable performance). Use the sun and wind whenever you can; it's the most environmentally friendly dryer of all
- Keep your fridge away from the oven, dishwasher, direct sunlight or other sources of heat. Allow enough space above and behind (at least 10 cm) it so air can flow. Keep your refrigerator filled to capacity, but not too much to the point where doors cannot be closed or air cannot circulate.
- Turn off (TV, DVD, Computer, monitor, printer, etc.) instead of leaving them in stand-by. Prefer LCD TVs to Plasma TVs. Do not buy oversized units -Larger sizes use more energy.
- Always buy, at least, Energy Star labeled equipment, and check for the ECO label.
- If possible use a solar water heater. Reduce your water heating bill by 10 percent by lowering the water heater temperature from 60°C to 50°C.
- During the summer use night ventilation for free cooling. Always close the windows when you're are heating or cooling your house.

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Annex I Market Study & Country Highlight Templates

1. PORTUGAL

1.1 Market study

Country	Portugal
Author	
Please state the **legislation** available in your country for energy efficient appliances	
Legislative/Informative: - Energy Consumption Labeling Ordinance (appliances); (starting 1994). - Commission Directive 2003/66/EC of 3 July 2003, amending Directive 94/2/EC implementing Council Directive 92/75/EEC with regard to energy labelling of household electric refrigerators, freezers and their combinations - Energy Efficiency Programme in Buildings (appliances, hot water, heating); (starting 2002-2006) - Energy Labeling of Buildings 2006 (SCE) (hot water, heating); (starting: 2006) **Legislative/Normative:** - Building Code RCCTE 2006 (hot water and heating); (starting 2006) - Regulation on HVAC systems in Buildings (RSECE) 2006 (Heating); (starting 2006) - The European Directive 96/57/EC setting minimum energy. efficiency standards for refrigerators and freezers	
Please state the **fiscal instruments** available in your country for energy efficient appliances	
- Eco tax (ECOVALOR) on lamps (incandescent bulbs): It's an environmental disposal tax applied to several appliances and incandescent lamps. -There are tax incentives for purchasing geothermal heat pumps and solar collectors - After analyzing the new PNALE (National Plan for the Allocation of Emissions Permits) for 2008-2012, the	

EC decided to cut the free CO2 emissions permits attributed to Portugal. There is a need to reduce CO2 emissions to fight climate change. This situation will induce an increase in the electricity tariff rates in Portugal, as the Portuguese government declared that the electric sector is the sector with the highest potential for reducing CO2 emissions due to the possibility of using the high renewable potential available in Portugal. Moreover this is also an incentive for end-users to reduce their electricity consumption by increasing energy efficiency, for example by using CFLs, A, A+ and A++ class efficiency appliances, opting for Energy Star ICTs, or even to install thermal solar panels for producing hot water.

Supportive **instruments** (awareness campaigns, training schemes available)

- The past experience was mainly based in intangible DSM measures, like studies and information campaigns on how to reduce electricity consumption through leaflets and brochures

- Some incentives (up to 25% of the investment in Energy Efficient equipment) have been provided in the past by the Ministry of Industry for industrial consumers, but this incentive scheme is no longer active.

- The carbon emissions market has been started in the beginning of 2005 and provides some incentive to energy efficiency projects, since carbon credits associated with energy savings can be obtained and negotiated in the market.

- Under the scope of the Decree law nº 97/2002, de 12 de April, the electricity regulator office ERSE, has launched in May 2006, Regulation Nº 8/2006, a call for DSM programmes: Portuguese Plan of Energy Efficiency Promotion. This plan attributes an incentive by the recuperation of the costs in DSM activities in the electricity tariffs. The utilities can yearly propose a DSM plan and a ranking of all the DSM measures proposed by the utilities, is made. The measures in each activity sector with best position in the ranking, until the sector budget is finished, are approved and will be implemented. The first plan was entered into effect in 2007, and a second plan for 2008 one was recently approved by the regulator.
Under this plan, EDP and other companies are finally implementing some measures to improve energy efficiency. In 2007 for the residential sector the following measures were approved:
  - a discount of 35€ is given to those buying Energy Efficient Refrigerators (A+ and A++)
  - One CFLs per household was distributed door to door (total 260000) and 340000 CFLs have been distributed in large shopping centers, under the deliver of an incandescent lamp.
  - Intangible measure (Eco famílias): promotion of audits in residences and personal advice and recommendations. The information obtained from these audits is used to provide advice to

consumers and also to get a better characterisation of end-use consumption.
- "Energy-Bus" is used to disseminate energy efficiency appliances and technologies among the population in general.

In 2008 for the residential sector the following measures were approved:
- Information campaigns
- CFLs
- Power strips
- Discount voucher for buying Energy Efficient freezers: A, A+ and A++ efficiency class.

Problems identified (awareness, technology available, target groups)

- The creation of a National Energy Agency in 2005 was fundamental for the implementation of more focused energy efficiency programmes, in particular for the promotion of energy services. However, although there are already some positive energy efficiency policies in Portugal, the results of their application are far from the existing savings potential. As an example the sales of refrigerators are dominated by Class B and C class is dominant in freezer sales.
- Lack of high efficiency appliances in the market. A++ refrigerators, washing machines and dishwashers are not easily available in the market in Portugal.

Initial recommendations for successful market transformation, what next?

- VAT on energy efficiency measures (appliances and retrofitting) to be reduced to 5% to provide parity with electrical energy;
- Establishing rules for changing behavior, like reforming the electricity tariffs so that they reward energy savings rather than higher consumption (like water tariffs, where the price increases as consumption increases);
- Need to have technological policies/plans in order to motivate low carbon technologies innovation (Contest awards?);
- To fix a price for CO2 through tariffs;
- Energy Performance certificate for households (already approved to be applied in 2009 for buildings to be sold in the market).
- Tax reduction: VAT on installing energy efficient measures reduced in a similar way to renewable energy equipment

- Provision low cost capital in a similar way to renewable energy equipment
- Grants/Subsidies: For investments in new buildings exceeding building regulation and for the purchase of more efficient appliances

Highlights (most successful instrument in the country so far)

- **Legislative/Normative and Legislative/informative measures** have the highest impact. In the residential sector the legislative/normative measures prevail, triggered by the introduction of the European Directives, such as the EU labelling electrical appliances, MEPs and the performance directive for buildings.

- Plan to Promotion of the Efficiency on the Consumption (PPEC) – this plan was carried out by ERSE (Energy Services Regulatory Authority) for the period 2006-2009, with the objective to promote the energy efficiency in the electric sector developed by commercializers, grid operators and NGOs near the consumers (ERSE, Dispatch 08/2006; www.erse.pt).
- Buildings – the revised Regulations on Characteristics of the Thermal Behaviour of Buildings (RCCTE) and Regulations on Air Conditioning Systems in Buildings (RSECE) are in force just from last April, contributing to enhance the energy performance of buildings and to establish an energy certification system for buildings, according the EU (DL 78/2006, DL 79/2006, DL 80/2006 of 4th April)

Under the most recent energy strategy for Portugal, formulated in the Resolution of Ministry Council nº 169/2005 of 24 of October, one of the priorities is energy efficiency.
The goal is to reduce the country's energy dependence and to obtain a sound use of natural resources, promoting diversification of energy sources, using new production technologies and more environment friendly methods, in particular by preferring renewable energies, aiming at the reduction of gas emissions with greenhouse effect and pursuant of EU energy efficiency directive.

Energy efficiency promotion is a strategic priority, owing to its contribution to cost reduction and environmental impacts and consequent increase in corporate productivity and quality of life.

In the framework of national energy strategy the following measures were already taken or will still be promoted: approval of legislation on energy efficiency of buildings (already done); reform of the regulation concerning industry's energy consumption management; implementation of voluntary agreements with different activity sectors;

1.2 Country highlights

1. Name of instrument	Information brochures
2. Country	Portugal
3. Type	☒Awareness - raising □ Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	To increase awareness on how to reduce electricity consumption, through leaflets/brochures
5. Target Group(s) (please tick box)	☒ consumers / citizens (= individual) ☒ households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ others
6. Size of target group *What is the size of the target group. Please give a number.*	All the population
7. Topic (please tick box)	☒ energy efficient appliances ☒ lighting ☒ heating/cooling ☒ other (please specify): Load Shifting with thermal storage
8. Description *max. 5 sentences.*	The campaign was based on the scope of the Public Initiative: P3E "Energy Efficiency in Buildings", "**E**ficiência **E**nergética nos **E**difícios", that was promoted by the Directorate General of Energy and Geology (DGGE). It was carried out by the national energy agency ADENE, based on recent characterisation studies (e.g. EURECO).
9. Start date -End date	January 2005

(dd-mm-yy)	
10. Budget (total, in €)	n.a.
11. Organisation *What type of organisation was responsible?(please tick box)*	☒ national government ☒ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	☒national government □ national, regional, local energy agency □ regional government □ local government □utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	☒ All kind of electrical appliances
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	☒ motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated*?*(please tick box, more are	□ TV □ Radio □ Press ☒ other (please specify): internet, seminars, conferences, door-to-door

possible)	
16. Goal achieved?	□ yes □ no ☒ partly
17. Other comments or additional information about the instrument	

2. FRANCE

2.1 Market study

Country	France
Author	Daniel VALERY
Please state the **legislation** available in your country for energy efficient appliances	
1. Informative labeling : the consumer knows better about the energy performance of appliances and make the choice of energy efficient appliances. The regulations translating European directives in French law are Framework decrees # 94-566 of 1994 july 7 th modified #98-281 of 1998 april 8 th related to appliances energy consumption and noise pollution indication. It is then declined for each appliance: - domestic air conditioners : 2003 january 17 th decree - electric ovens : 2003 january 17 th decree - domestic lighting : 1998 june 3 th decree - dish washers : 1998 june 3 th decree - combined clothes washing and drying appliances : 1998 june 3 th decree - clothes washers : 1996 march 6 th decree - tumble dryers : 1996 march 6 th decree - cold appliances : 1995 february 16 th modified 2004 june 30 th decrees For each appliance an advice paper explain how to measure the electric consumption. 2. Forbid French market access to energy non efficient appliances. - 1998 march 31 st decree about energy consumption of refridgerators and freezers. - 2001 november 28 th decree about energy performance of fluorescent lighting neon tube.	

Please state the **fiscal instruments** available in your country for energy efficient appliances
No fiscal instruments are available for energy efficient appliances. At the end of last year something was foreseen together by Uk and French presidents about using VAT as an instrument but Ceced did not agree with the idea.
Supportive **instruments** (awareness campaigns , training schemes available)
Heard about training schemes available for retailers one made by a university in north of France for "Boulanger" appliances stores (1999) and another one by Ph Bertrand Consultant 2003. Both were for training retailers to energy labeling of appliances. EDF and other utilities web sites provide information about equipments energy efficiency.
Problems identified (awareness, technology available, target groups)
Not quite sure that energy labeling reached the objective. It pushed away from the market non efficient cold appliances but the average consumer is still more concerned about the retail price than the global cost of using the appliance including the energy consumption. It is more dedicated to a population who is aware about energy efficiency.
Initial recommendations for successful market tranformation, what next?
Highlights (most successful instrument in the country so far)
Energy labeling has been the only instrument for appliances in France.

2.2 Country highlights

1. Name of instrument	Energy labelling
2. Country	France
3. Type	x Awareness- raising x Regulatory □Fiscal

4. Goal *Please state the goal of the instrument in 1 sentence.*	Bring information in a visual way to the customer about energy efficiency of the appliances
5. Target Group(s) (please tick box)	x consumers / citizens (= individual) □ households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ others
6. Size of target group *What is the size of the target group. Please give a number.*	?
7. Topic (please tick box)	x energy efficient appliances x lighting x cooling □ other (please specify)
8. Description *max. 5 sentences.*	
9. Start date -End date (dd-mm-yy)	See other paper for dates of implementations
10. Budget (total, in €)	Unknown – Unable to answer
11. Organisation *What type of organisation was responsible?(please tick box)*	x national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the	x national government

instrument *What type of organisation financed the instrument?*	x national, regional, local energy agency □ regional government □ local government □ utilities xretailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	Cold appliances, clothes and dish washers, clothes dryers, air conditioning, lighting, electric ovens
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	x motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio □ Press x other (please specify): retailers
16. Goal achieved?	□ yes □ no x partly
17. Other comments or additional information about the instrument	

3. GERMANY

3.1 Market study

Country	Germany
Author	Barbara Schlomann, Fraunhofer ISI, Karlsruhe, Germany

Please state the **legislation** available in your country for energy efficient appliances

In Germany, the legislative energy policy measures for energy efficient appliances are triggered by the EU legislation:

- The *Energy Consumption Labelling Ordinance* (Energieverbrauchs-kennzeichnungsverordnung – EnVKV from 30 October 1997), which transposed the Council Directive 92/75/EEC on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances into German law. Up to now, implementing directives for household refrigerators and freezers, washing machines, washer-driers and driers (1998), dishwashers and households lamps (1999) and electric ovens and air-conditioners (2003) have been adopted.
- The *Ordinance on Maximum Energy Consumption* (Energieverbrauchs-höchstwerteverordnung-EnVHV from 3 June 1998) translated the Directive 96/57/EC on efficiency requirements for refrigerators and freezers and their combinations into German law.

Please state the **fiscal instruments** available in your country for energy efficient appliances

With regard to fiscal instruments, there are no specific policy measures for the promotion of energy efficient appliances implemented in Germany up to now. But in 1999, a completely new approach for the German energy and environmental policy was the introduction of the *Ecological Tax Reform*, which was both aimed to encourage energy savings and promote renewable energies, as well to create jobs. This measure, which is still valid, also includes a tax on electricity and therefore also has an impact on electrical appliances.

The *Law Initiating the Ecological Tax Reform* of 24 March 1999 (BGBl. I p. 378) increased the price of energy from 1 April 1999 by:

motor fuels:	0.03 EUR/l
fuel oil:	0.02 EUR/l)
gas:	0.016 EUR/kWh
electricity:	0,01 EUR/kWh

The *Law Continuing the Ecological Tax Reform* of 18 December 1999 (BGBl. I p. 2432) provided for a further four-step increase in taxation for mineral oil and electriciy from 2000 to 2003. The increase in electricity tax amounted to 0.0025 Euro/kWh on 1 January each year from 2000 to 2003.

Supportive **instruments** (awareness campaigns , training schemes available)

Whereas in the heating sector financial measures (especially the huge housing modernisation programmes of the KfW promotional bank) are the by far dominating instrument to promote energy efficiency in buildings in Germany, this kind of financial support does not exist for the promotion of energy efficient electrical appliances at the national level up to now. There have only been a few smaller subsidy programmes for the purchase of efficient white appliances and household lamps initiated by some electricity utilities.

For electrical appliances, the main supportive instruments are public awareness campaigns and other information programmes, which are both initiated at the national level and at the level of some Federal Länder, regions municipalities or energy utilities and communities (by energy agencies, utilities or consumer organisations).

Since the end of the 1970s, the Federal Ministry of Economics and Technology (BMWi) in Germany supports the *independent information and advisory services* on all questions related to efficient energy use by the Federation of German Consumer Organisations **(vzbv)** and Consumer Organisations in the Federal Länder. In total, about 400 advice centres exist in Germany. The advisory services of the consumer association in major cities are assisted by buses that systematically visit smaller and medium-sized communities throughout the country. Advisory services are also given at trade fairs. The Ministry also provides leaflets and other information materials by itself. Extra funds are provided for the *"Stiftung Warentest"*, an independent foundation for testing all kinds of consumer goods, to enable additional testing of energy-related goods and services (especially electrical appliances).

At the level of the Federal Länder, a very comprehensive awareness campaign with regard to the reduction of *standby consumption* was carried out in Schleswig-Holstein by the regional energy agency in the beginning of the 2000s. The campaign wanted to inform private consumers on energy savings possibilities and change the purchase and using behaviour with regard to the standby consumption of IT appliances. This campaign, which used a wide range of different media (e.g. newspapers, radio and television spots, retailers), was regarded as very successful and was also taken note of outside Germany.

In order to further improve consumer information on energy efficiency and renewable energies, the *German Energy Agency* (dena) was established by the Federal Minister of Economics and Technology in September

2000. The main areas of work are efficient energy use in buildings; efficient use of electricity, renewable energies, energy efficient mobility and power plants and electricity grids. The work of dena is mainly done by pilot projects using new technologies together with the industry, and by information campaigns. In 2001, a toll-free telephone hotline was established, where both private individuals and companies get information on the efficient use of energy in buildings and of electricity, renewable energies, and CHP. In October 2002 dena started a nationwide energy efficiency initiative ("*Initiative EnergieEffizienz*") in co-operation with energy supply companies. The campaign is especially aiming at reducing electricity consumption in private households.

Another important instrument in the field of electrical appliances is the *energy labelling*. Apart from the mandatory EU energy label for household appliances, there are some voluntary labels available in Germany. Some of these labels are based on EU initiatives (as the Energy Star for office equipment, the European Ecolabel and the GEEA label for information and consumer electronics of the European Group for Energy Efficient Appliances), others are national labels (especially the environmental sign "Blue Angel" which was already introduced in 1977 for the purpose of labelling energy-saving and environmental-friendly products).

Problems identified (awareness, technology available, target groups)

Energy efficiency policies for electrical appliances in the residential sector in Germany are dominated by EU measures, whereas the main national policies are in the field of information. It is, however, very difficult to assess the single impact of information campaigns on electricity savings and to separate it from legislative measures as the mandatory labelling and minimum efficiency standards. Nevertheless, there is no doubt that especially information programmes are important accompanying measures which cannot be fully substituted by legislative measures. Besides, information programmes can also aim at behavioural savings options, whereas minimum efficiency standards and labels mainly aim the technical side, i.e. to enhance the production and sales of efficient appliances. With regard to measures aiming at the using behaviour of consumers, the highest degree of uncertainty lies in the durability of this kind of measures.

Financial measures to support the purchase of highly efficient electrical appliances have not been widely spread in Germany up to now. This was mainly due to the high costs of these measures and the uncertainty on the extent of free-rider effects. But this could change in future.

Initial recommendations for successful market transformation, what next?

With regard to future energy efficiency policies planned in Germany, the following two recent documents

include important information:

- The National Energy Efficiency Action Plan (EEAP) of the Federal Republic of Germany in accordance with the EU Directive on energy end-use efficiency and energy services (2006/32/EC) from 27 September 2007 . (http://ec.europa.eu/energy/demand/legislation/doc/neeap/germany_en.pdf)
- The "Integrated Energy and Climate Programme of the German Government" which was adopted in August 2007, consisting of 29 key elements. Some of these elements have already been implemented on 5 December 2007, a smaller package containing further legislative proposals will follow on 21 May 2008. (http://www.bmu.de/english/climate/downloads/doc/40589.php)

With regard to energy efficient appliances, the energy efficiency policies in Germany will on the one hand be determined by EU legislation. This both concerns possible minimum efficiency requirements under the EU Directive on Energy-Using Products (EuP Directive 2005/32/EC) and possible revisions of the EU Energy Labelling Directive. On 20 December 2007, the stakeholder consultations on the revision of the Energy Labelling Framework Directive 1992/75/EC have been opened (http://ec.europa.eu/energy/demand/legislation/domestic_en.htm#consultation

The German government supports the immediate settling of demanding minimum efficiency requirements under the EuP Directive and a differentiating and dynamic energy consumption labelling of energy-operated products. Germany favours a "European Top-Runner Strategy" taking the Japanese Top-Runner programme as an example.

At the national level, the following new measures are planned:

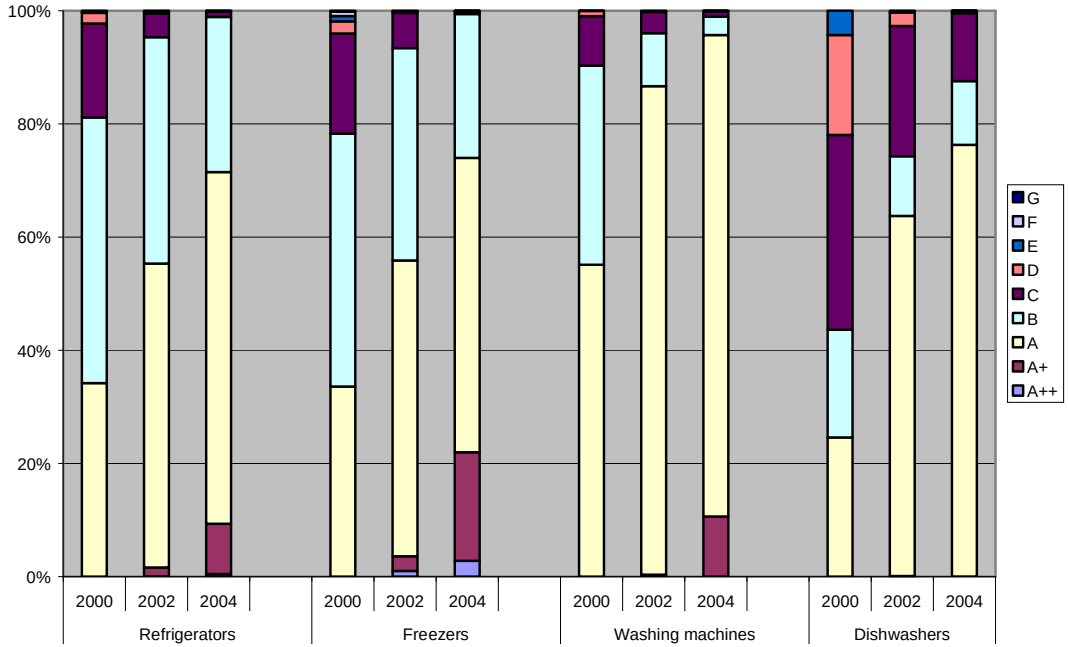
- A market launch programme for new, highly efficient electrical household appliances, which should give financial incentives for the purchase of these appliances.
- The continuation and further development of the energy efficiency initiative of the German Energy Agency.
- The continuation and further development of the energy advice for private consumers from the Federation of German Consumer Organisations (vzbv).

Highlights (most successful instrument in the country so far)

The most successful instrument for the introduction of more efficient electrical appliances in households in

Germany probably was the mandatory EU energy label, which has led to a relatively high share of A appliances in total sales (see Figure 1). As already stated above, it is, however, difficult to separate the impact of the EU legislation from national measures, especially the information activities of the German Energy Agency.

Figure 1: Shares of energy efficiency classes in total sales of electrical household appliances in Germany



Source: GfK

The most important information campaign in Germany in the past was the energy efficiency initiative of the German Energy Agency, which started in 2002 and which will be continued and further developed in the coming years.

3.2 Country highlights

1. Name of instrument	Energy efficiency initiative (Initiative EnergieEffizienz) of the German Energy Agency
2. Country	Germany
3. Type	☒ Awareness - raising □ Regulatory □Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	The main aim of the energy efficiency initiative is to inform the private consumers about energy saving possibilities and energy costs reductions in the field of electrical household appliances.
5. Target Group(s) (please tick box)	☒ consumers / citizens (= individual) □ households (= the group of people forming a household) ☒ retailers □ youngsters □ low income groups □ others
6. Size of target group *What is the size of the target group. Please give a number.*	The theoretical target group are all consumers/citizens in Germany. The whole number of inhabitants in Germany is 82.5 million. If only taking into account people from 14 years, the size of the target group is about 70 million people.
7. Topic (please tick box)	☒ energy efficient appliances ☒ lighting □ heating/cooling □ other (please specify)
8. Description *max. 5 sentences.*	In October 2002, the German Energy Agency (dena) started a nationwide energy efficiency initiative ("Initiative EnergieEffizienz") which has been organised as a public/private partnership project in co-operation with energy supply companies (EnBW Energie Baden-Württemberg AG, E.ON AG, RWE AG, Vattenfall Europe AG) and is supported by the Federal Ministry of Economics and Technology (BMWi). Retail trade and craftsmen, existing consuer advice centres and regional energy agencies are also integrated in the concept of the campaign. In the beginning, the campaign was only aiming at consumers in the residential sector

	and focused on three items: reducing standby losses of brown goods and office equipment, supporting efficient lighting with high comfort and raising energy efficiency of “white” household appliances. Since 2005, the focus of the campaign has been extended to all electricity applications in households, with a special focus on the on-mode of ICT appliances. In the meantime, the campaign has also been extended to the service sector and to industry.
9. Start date -End date (dd-mm-yy)	01-10-02 – still ongoing
10. Budget (total, in €)	The whole budget of the first phase of the campaign (October 2002 – end of 2004) was 13 million €: 8 million € were provided by the electricity supply companies, 2.8 million € by the Federal Ministry of Economics and Labour and 2.2 million € by the Federal Environment Foundation. The financial contribution of the electricity industry is part of their voluntary commitment to CO_2 reduction as agreed with the Federal Government.
11. Organisation *What type of organisation was responsible?(please tick box)*	□ national government ☒ national, regional, local energy agency □ regional government □ local government ☒ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	☒ national government □ national, regional, local energy agency □ regional government □ local government ☒ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)

13. Which type of appliance does the instrument want to influence?	All electrical household appliances with a special focus on brown goods and office equipment (on-mode and standby mode), lighting and white appliances.
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	☒ motivational factors (awareness, knowledge, social norms, attitude, intention) ☐ facilitating factors (external financial resources, external technical resources, external organisational resources) ☐ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	☐ TV ☒ Radio ☒ Press ☒ other: internet, brochures
16. Goal achieved?	☐ yes ☐ no ☒ partly
17. Other comments or additional information about the instrument	Additional information on the energy efficiency initiative can be found of the website of the campaign, which is also available in English: http://www.dena.de/en/topics/thema-strom/projects/projekt/the-initiative-energieeffizienz/ In the National Energy Efficiency Action Plan (EEAP) of the Federal Republic of Germany in accordance with the EU Directive on energy end-use efficiency and energy services (2006/32/EC) from 27 September 2007 (http://ec.europa.eu/energy/demand/legislation/doc/neeap/germany_en.pdf), a continuation and further development of the energy efficiency initiative of the German Energy Agency is announced, which will in the field of household appliances aim at the following topics: • Integrated and effective public relations communications measures (information, advice, motivation) including the construction and continuous development of a central information platform. • Improving the information available on the efficient use of electricity. • Motivation to implement energy efficiency measures (buying and utilisation behaviour). • Consistent networking of the market actors and the qualification of

	multipliers.

4. DENMARK

4.1 Market study

Country	Denmark
Author	Casper Kofod
Please state the **legislation** available in your country for energy efficient appliances	

In Denmark, the legislative energy policy measures for energy efficient appliances are:

- EU legislation by The *Energy Consumption Labelling Ordinance* (10 November 1996), which transposed the Council Directive 92/75/EEC on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances. Up to now, implementing directives for household refrigerators and freezers (1996), washing machines, washer-driers and driers and dishwashers (1998), households lamps (1999) and electric ovens and air-conditioners (2003) have been adopted.
- The EU Buildings Directive.
- Sep. 2005 the government published a renewed energy-conservation action plan based on a broad political agreement of 10 June 2005 on future conservation efforts. The basic principles are cost-efficiency, a market-based approach and focus on profitable energy saving. The saving target is 1.7% per year until 2013 including appliance savings that can be documented. Compared to the old regulation, the new regulation almost triple the overall effort.
- In 1997, the Electricity Saving Trust was established with the goal to establish electricity savings within public institutions and the domestic sector and thus household appliances. The Electricity Saving Trust is funded by a volume-based levy of 0,08 Eurocent/kWh, collected by network companies.
- The Electricity Supply Act in 1999 resulted in major changes of the electricity sector in order to function in a new liberalized market. The framework of the energy saving activities of the grid companies/utilities is laid down in the Energy Saving Bill, which aims to ensure up to date, resource-conscious efforts to promote energy saving. In 2006, the regulation was revised in order to improved the function in the liberalized market and primary concentrate the activities to activities that where the results can be measured.

Please state the **fiscal instruments** available in your country for energy efficient appliances
Denmark has a taxation on lighting sources added to the sales price: • CFL no tax • incandescent 3.75 DKK (= 0.5 Euro) • Fluorescent tube 7.5 DKK (= 1 Euro) • Halogen low voltage 0.75 DKK (0.1 Euro) • Halogen 230V 3.75 DKK (= 0.5 Euro) • Metalhalogen 7.5 DKK (= 1 Euro) • Emission lamp 7.5 DKK (= 1 Euro) This taxation is a state income. The tax could also be seen as an energy efficiency effort except for that there should in this case not be a tax for the energy efficient fluorescent tubes and metalhalide lamps as in the case of CFLs. In periods the utilities and/or the Electricity saving Trust has been giving a rebate (subsidy) for buy of different appliances – e.g. on A+ or A++ white goods in relation to a campaign for these appliances.
Supportive **instruments** (awareness campaigns, training schemes available)
Information and support concerning good insulation of new and existing buildings has existed since the oil crises in the 1970'ties. The Electricity Saving Trust website www.elsparefonden.dk and the different utility/energy centre web sites helps consumers to find the most efficient appliances, or to evaluate their existing one. The last years there has been a lot of focus on reducing standby consumption.
Problems identified (awareness, technology available, target groups)
For domestic customers taxes on electricity consumption are very high (all taxes plus VAT together constitute more than half of the domestic electricity price). Anyhow, only a small part of the taxes are used to promote and support electricity savings.
Initial recommendations for successful market transformation, what next?
The next major activity will be Danish implementation of the minimum energy efficiency requirements under the EU Directive on Energy-Using Products (EuP Directive 2005/32/EC) and the revision of the EU Energy

Labeling Directive.
Highlights (most successful instrument in the country so far)
The most successful instruments for the introduction of more efficient electrical appliances in Danish households are: 1. Electricity Savings Trust web sites, guides and campaigns for energy efficient Lighting (approved A lamps), White goods, Computer equipment, Entertainment equipment, Indoor climate and Electricity saving tools. The activity is including list of approved efficient appliances of quality e.g. the A saving lamp list. 2. Free Personal Energy Advice for Households by the utilities during more than 25 years including 25 years of energy advisory by demonstration at the utility or in energy advice centres, campaigns, information days for school classes and local exhibitions. 3. New Electricity Saving Trust project about energy efficiency by a wireless home installation. The activity is including a national distributed brochure and a web site with a tool. 4. Introduction of the mandatory EU energy label scheme (not described as it is common in all EU).

4.2 Country highlights

1. Name of instrument	Guides and campaigns for energy efficient Lighting (approved A lamps), White goods, Computer equipment, Entertainment equipment, Indoor climate and Electricity saving tools.
2. Country	Denmark
3. Type	☒Awareness - raising □ Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	To increase awareness on how to reduce electricity consumption by information about organised per appliance with lists of approved energy saving appliances plus information about places to buy them and energy management.
5. Target Group(s) (please tick box)	☒ consumers / citizens (= individual) ☒ households (= the group of people forming a household) □ retailers

	☐ youngsters ☐ low income groups ☐ others
6. Size of target group *What is the size of the target group. Please give a number.*	All the population
7. Topic (please tick box)	☒ energy efficient appliances ☒ lighting ☒ heating/cooling ☒ other (please specify): all appliances
8. Description *max. 5 sentences.*	The web site of the Electricity Saving Trust include all the information mentioned above organised in the groups: Lighting, White goods, Computer equipment, Entertainment equipment, Indoor climate and Electricity saving tools. The activity has over the years been combined with campaigns for different appliances.
9. Start date -End date (dd-mm-yy)	From the start of the Electricity Saving Trust in 1997.
10. Budget (total, in €)	n.a.
11. Organisation *What type of organisation was responsible?(please tick box)*	☐ national government ☒ Electricity Saving Trust (national) ☐ regional government ☐ local government ☐ utilities ☐ retailers ☐ consumer associations ☐ professional associations (e.g. lighting, housing, etc.) ☐ NGO ☐ other (please specify)
12. Financier of the instrument *What type of*	☐ national government ☐ national, regional, local energy agency ☐ regional government

organisation financed the instrument?	□ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other The trust is financed by a special tax of 0.08 Eurocent/kWh paid by households and public institutions and collected by the grid utilities.
13. Which type of appliance does the instrument want to influence?	☒ All kind of electrical appliances
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	☒ motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio ☒ Press ☒ other (please specify): internet, brochures and campaign material
16. Goal achieved?	☒ yes. Evaluation of the Electricity Savings Trust activities shows that the goals have been more than fulfilled. In 2007 the goal was savings of 800 GWh and the last data shows that savings around 1000 GWh. □ no □ partly □ There is no goal
17. Other comments or additional information about the instrument	See http://www.elsparefonden.dk/forbruger

5. CZECH REPUBLIC

5.1 Market study

Country	Czech Republic
Author	Tomas Vorisek
Please state the **legislation** available in your country for energy efficient appliances	
Legislative/Informative: - Ministerial ordinance No. 442/2004 Col. transposing stipulations of EU legislation related to energy labeling of selected appliances (as specified in EU Directive No. 2003/66/EC of 3 July 2003, amending Directive 94/2/EC implementing Council Directive 92/75/EEC) and, in addition to this, prescribing energy labeling of electric water heaters as a country specific labeling scheme. **Legislative/Normative:** - Ministerial ordinance No. 442/2004 Col. transposing stipulations of EU legislation as for minimum energy efficiency standards for refrigerators and freezers (EU Directive 96/57/EC).	
Please state the **fiscal instruments** available in your country for energy efficient appliances	
- There is presently no any specific incentive program governed by the State for promotion of procurement of energy efficient appliances by households in the country. - Two major electricity suppliers (E.ON, Pražská energetika Group), in the country presently offers to its residential customers price reductions for energy efficient appliances (e.g. electric water heaters, white goods), if purchased at associated dealers.	
Supportive **instruments** (awareness campaigns, training schemes available)	
- In the framework of the Governmental Programme for the Support of Energy Savings and the Utilisation of Renewable and Secondary Sources of Energy (Programme “EFEKT”) are provided free-of-charge advisory services to the public in the field of efficient use of energy and RES utilization by subsidized private consultancies named “EKIS”. This advisory service is also available electronically at www.i-ekis.cz. - The Programme “EFEKT” then provides financial subsidies for publishing informative materials	

(such as this leaflet/brochure: http://www.ekowatt.cz/library/infolisty/infolisty2007/spotrebice.pdf), computational utilities (e.g.: http://hestia.energetika.cz), and promotion events at exhibitions (seminars etc.).

- As for campaigns for increasing the attention of the public towards energy savings, there have been so far organized several, mostly focused on increasing penetration of CFLs and efficient lighting generally especially in the residential sector. They have been either initiated by the State administration or have been part of the international support programmes run by the World Bank (GEF, UNDP) or the European Commission (SAVE, IEE).
  Presently, there are underway two EE rising awareness campaigns organized by major energy suppliers - the state-owned former electricity monopolist producer CEZ (official website: http://www.posvittesinauspory.cz), and major gas supplier RWE Transgas (official website: http://www.setrimenergii.cz). Both focus on provision of useful advices how to save energy in the house, including electricity and its use by domestic appliances.
  Additionally to that, SEVEn, in the framework of another EIE project named **CEECAP**, carries out various information dissemination activities aimed at promoting the system of energy labelling of appliances within the state officials, appliance producers and retailers, consumer groups etc. One of the output is a publication and a poster produced in cooperation with the Czech CEECED and distributed to all appliance retailer shops by Ceced members as a part of their retailer and shop assistant training activities (available at www.ceecap.org).
- Last but not least, also mass media (e.g. daily newspaper “MFDNES” or “Lidove noviny”) on a regular basis provide their readers with energy saving tips, especially whenever energy prices are to increase.

Problems identified (awareness, technology available, target groups)

- The major concern identified lays down with the primary focus of responsible governmental bodies on securing (self-)sufficient energy supplies to meet energy demand in stead of putting on top of the energy policy agenda demand-side measures to curb energy consumption which in case of electricity has a tendency to constantly grow. There are no clear or quantified goals of reaching electric energy savings in the final use in the present official State Energy Policy. However, the ESD Directive may change this situation and force the Czech government to the implementation of more extensive DSM programs.
- Another drawback of the present status quo regarding electricity use by households is the existing tariff structure as prescribed by the Energy Regulatory Office. Basically, the tariffs for residential customers differentiate between use of electric energy “only” for standard purposes (lighting,

domestic appliances) and also for meeting heat energy needs (hot water preparation, heating). As a result, those, who use electricity just for basic purposes, may have as much as two times higher unit price of energy supplied/consumed then those who use it also for production of heat for the same amount of electricity consumed. Such a practice motivates households to use electricity in higher volumes than would be otherwise necessary.
Initial recommendations for successful market transformation, what next?
- Amending the existing tariff structure for electric energy supplies to residential customers. - The first recommended measure may be effectively implemented via the introduction of smart metering technology; - Initiation of energy services to help residential customers realize energy savings and their monitoring and verification via the system of white certificates (based on the obligations arising from the ESD Directive).
Highlights (most successful instrument in the country so far)
- By far, it is **energy labeling** that, since its introduction in 2002, significantly influenced the Czech market with white goods and other domestic appliances subject to labeling in favor of more efficient products. - As another beneficial instrument can be seen the governmental **programme EFEKT** in which framework are provided financial subsidies to proponents of various information dissemination activities which includes advisory services (EKIS consultancy), publications, events.

5.2 Country highlights

1. Name of instrument	Network of energy consultancy and information dissemination centres “EKIS”
2. Country	Czech Republic
3. Type	☒ Awareness - raising ☐ Regulatory ☐ Fiscal
4. Goal *Please state the goal of the instrument in 1*	Provision of free-of-charge advisory services by authorized experts to general public as well as legal bodies from the tertiary sector and industry on how to reduce energy consumption by, among other, technical or behavioural measures

sentence.	related to electric appliances.
5. Target Group(s) (please tick box)	☒ consumers / citizens (= individual) ☒ households (= the group of people forming a household) ☐ retailers ☐ youngsters ☐ low income groups ☒ others: public as well as private legal bodies generally
6. Size of target group *What is the size of the target group. Please give a number.*	Difficult to estimate, the instrument is available to whole population and any organization from the tertiary sector and industry. However, it is being limited by the number of hours for which each EKIS centre is contracted for providing free consulting during a year.
7. Topic (please tick box)	☒ energy efficient appliances ☒ lighting ☒ heating/cooling ☒ other (please specify): various topics related to energy use covering all the technical, legislative, and (RUE, RES), legi
8. Description *max. 5 sentences.*	Advisory services are provided by the authorized centres which are located all around the country. Questioners may ask for advices for various topics related to energy use personally by visiting an EKIS centre in their locality (visit hours are twice a week), by call, and also electronically through the common internet website www.i-ekis.cz. The EKIS consultancy network is financially supported by the governmental programme “EFEKT”.
9. Start date -End date (dd-mm-yy)	Since 2001 onwards
10. Budget (total, in €)	~ 200.000 EUR/year (estimate)
11. Organisation *What type of organisation was responsible?(please tick box)*	☒ national government ☒ national, regional, local energy agency ☐ regional government ☐ local government ☐ utilities ☐ retailers ☐ consumer associations ☐ professional associations (e.g. lighting, housing, etc.) ☐ NGO

	☐ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	☒ national government ☐ national, regional, local energy agency ☐ regional government ☐ local government ☐ utilities ☐ retailers ☐ consumer associations ☐ professional associations (e.g. lighting, housing, etc.) ☐ NGO ☐ other : EU Commission (TopTen website, under the IEE Programme)
13. Which type of appliance does the instrument want to influence?	☒ All kind of electrical appliances
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	☒ motivational factors (awareness, knowledge, social norms, attitude, intention) ☒ facilitating factors (external financial resources, external technical resources, external organisational resources) ☒ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	☒ TV ☐ Radio ☐ Press ☒ other (please specify): internet, brochures
16. Goal achieved?	☐ yes ☐ no ☒ partly ☐ There is no goal
17. Other comments or additional information about the instrument	There are presently 50 or so EKIS consultancies around the country providing annually altogether several thousands of advisories to both natural and legal persons – domestic as well as foreign ones.

6. ROMANIA

6.1 Market study

Country	ROMANIA
Author	ARCE - Romanian Agency for Energy Conservation

Please state the **legislation** available in your country for energy efficient appliances

The main national legal requirements in terms of labelling and standardization energy efficiency are covered by the Romanian legislation below:

- Ø **Law no.199/2000** concerning the efficient use of energy, republished.
- Ø **Government Decision no.941/2002** concerning the functioning and organization of the Romanian Agency for Energy Conservation
- Ø **Government Decision no.1347/2005** reforming annexes no.1-3 of **Government**
- Ø **ARCE President Decision no. 53/16.05.2003** for approval the Statute of the market survey activity of the Romanian Agency for Energy Conservation
- Ø **ARCE President Decision no. 54/20.05.2003** for approval the Statute of the organization and functioning of the Romanian Agency for Energy Conservation
- Ø **Ordinance no. 2*/2001*** concerning the legal framework for finding and penalties application

Government Decisions that has been transposed in Romanian legislation the ***EU directives on the indication by labelling and standard product information of the energy efficiency of household electric appliances*** *(refrigerators, freezers and their combinations; washing machines; combined washer-driers; electric tumble driers; dishwashers; electric ovens; lamps; ballasts for fluorescent lighting; air-conditioners):*

Council Directive **92/75 /EEC** of 22 September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances; Commission Directive **94/2/ EEC** Of 21 January 1994 implementing Council Directive	**Government Decision no.573/14.06.2001** regarding labelling and energy efficiency requirements of household electric refrigerators, freezers and their combinations when are putting on the market **Replace with Government Decision no.1039/27.08.2003** **Government Decision no. 972/15.06.2004**

92/75 /EEC with regard to energy labelling of household electric refrigerators, freezers and their combinations; Council Directive **96/57/EC** Of 3 September 1996 on energy efficiency requirements for household electric refrigerators, freezers and combinations thereof. Commission Directive **2003/66/EC** of 3 July 2003 amending Directive 94/2/EC implementing Council Directive 92/75/EEC with regard to energy labelling of household electric refrigerators, freezers and their combinations EN 153	reforming **Government Decision no.1039/27.08.2003** in present in force Government Decision no.**1039/27.08.2003**, republished SREN 153
Directive **95/12/EEC** of 23 May 1995 implementing Council Directive 92/75/EEC with regard to energy labelling of household washing machines EN 60456	**Government Decision no. 598/ 21.06.2001** regarding labelling and energy efficiency requirements of household washing machines when are putting on the market replaced by Government Decision no.**1252/13.10.2005** SREN 60456
Directive **96/60/EC** of 19 September 1996 implementing Council Directive 92/75/EEC with regard to energy labelling of household combined washer-driers EN 50229	**Government Decision no**. **671/19.07.2001** regarding labelling and energy efficiency requirements of household combined washer-driers when are putting on the market **Government Decision no**. **230 din 24/03/2005** **reforming Government Decision no**. **671/2001** SREN 50229
Directive **98/11/EC** of 27 January 1998 implementing Council Directive 92/75/EEC with regard to energy	**Government Decision no**. **1056/ 18.10.2001** regarding labelling and energy efficiency requirements of household lamps when are

labelling of household lamps EN 50285 EN 50294	putting on the market SREN 50285 SREN 50294
Directive **95/13/EC** of 23 May 1995 implementing Council Directive 92/75/EEC with regard to energy labelling of household electric tumble driers EN 61121	**Government Decision no**. **1274/ 20.12.2001** regarding labelling and energy efficiency requirements of household electric tumble driers when are putting on the market SREN 61121
Directive **97/17/EC** of 16 April 1997 implementing Council Directive 92/75/EEC with regard to energy labelling of household dishwashers EN 50242	**Government Decision no**. **27/17.01.2002** regarding labelling and energy efficiency requirements of household dishwashers when are putting on the market **Government Decision no**. **86/19.01.2006 reforming Government Decision no**. **27/17.01.2002** SREN 50242
Commission Directive **2002/40/EC** of 8 May 2002 implementing Council Directive 92/75/EEC with regard to energy labelling of household electric ovens EN 50304	**Government Decision no**.**1117/ 10.10.2002** regarding labelling and energy efficiency requirements of household electric ovens when are putting on the market SREN 50304
Directive **2000/55/EC** of the European Parliament and of the council of 18 September 2000 on energy efficiency requirements for ballasts for fluorescent lighting	**Government Decision no 1549/18.12.2002** regarding labelling and energy efficiency requirements for ballasts for fluorescent lighting **Government Decision no**. **1160/2.10.2003 reforming Government Decision no**. **1549/18.12.2002**
Commission Directive **2002/31/EC** of 22 March 2002 implementing Council	**Government Decision no.407/2.04 2003** regarding labelling and energy efficiency

Directive 92/75/EEC with regard to energy labelling of household air-conditioners EN 255-1, EN 814-1	requirements of household air-conditioners when are putting on the market **Government Decision no.1871/22.12.2005 reforming Government Decision no. 407/2.04**
Please state the **fiscal instruments** available in your country for energy efficient appliances	
In ROMANIA there are not fiscal instruments available for energy efficient appliances	
Supportive **instruments** (awareness campaigns , training schemes available)	
Regulatory, awareness campaigns and seminars for dissemination of new information regarding labeling and efficient use of domestic appliances	
Problems identified (awareness, technology available, target groups)	
ALEE- Application of Energy Efficiency Legislation workshops on 2003-2006 Target groups for information: municipalities, manufactures, importers, industry companies, consumers	
Initial recommendations for successful market transformation, what next?	
Contact and help the retailers to be sure that they have knowledge about the legislation that impose the obligation to put on the market only labeled appliances Retailers trained on appliance energy efficiency issues and sales arguments Providing information about energy appliances labeling: legislation, model of label, list of appliances labeled Providing information on annual report on verification and control program Organization of training and repeated this several time over a two years. Development of communication strategy for consumers – message, logo, media activities, web site, etc. Provide promotional material for information corner in retailer shops, municipal information points and ARCE territorial branches info point.	
Highlights (most successful instrument in the country so far)	
Information campaigns (leaflets, guides), regulatory, workshops.	

6.2 Country highlights

1. Name of instrument	Information CAMPAIGNS regarding use of domestic appliances
2. Country	ROMANIA
3. Type	X Awareness- raising □ Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	The instrument guides consumers for an efficient use of domestic appliances.
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) X households (= the group of people forming a household) X retailers □ youngsters □ low income groups □ others
6. Size of target group *What is the size of the target group. Please give a number.*	10000 leaflets
7. Topic (please tick box)	X energy efficient appliances X lighting X heating/cooling □ other (please specify)
8. Description *max. 5 sentences.*	The leaflet includes 30 advices for the consumers regarding cool appliances, washing appliances, central heating and lighting systems. They can use these information both acquisition and using. Also the consumers can find an energy label with main explications. The leaflets was distributed in shops.
9. Start date -End date (dd-mm-yy)	January 2006 – December2006
10. Budget (total, in €)	5000 EU
11. Organisation *What type of*	X national government X national, regional, local energy agency

organisation was responsible?(please tick box)	□ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO X other (please specify) Info Points beside municipalities and ARCE Territorial Branches Offices
12. Financier of the instrument *What type of organisation financed the instrument?*	X national government X national, regional, local energy agency □ regional government □ local government □ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO X other (please specify) cooperation Program ARCE-ADEME
13. Which type of appliance does the instrument want to influence?	cool appliances, washing appliances, central heating, lighting systems
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	X motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated*?*(please tick box, more are possible)	□ TV □ Radio X Press X other (please specify) Info point inside municipalities ARCE territorial branches
16. Goal achieved?	X yes

	□ no □ partly
17. Other comments or additional information about the instrument	-

1. Name of instrument	National laws supporting energy efficient appliances
2. Country	ROMANIA
3. Type	□ Awareness- raising X Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	The instrument provides legislative framework for the market of domestic appliances
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) X households (= the group of people forming a household) X retailers □ youngsters □ law income groups X others – manufactures, importers, dealer
6. Size of target group *What is the size of the target group. Please give a number.*	All persons responsible with market conduction of appliances
7. Topic (please tick box)	X energy efficient appliances X lighting X heating/cooling □ other (please specify)
8. Description *max. 5 sentences.*	Government Decisions that has been transposed in Romanian legislation the EU directives on the indication by labelling and standard product information of the energy efficiency of household electric appliances (cool appliances; washing appliances; electric ovens; lamps; ballasts for fluorescent lighting; air-conditioners)

9. Start date -End date (dd-mm-yy)	Continuous process beginning 2001
10. Budget (total, in €)	-
11. Organisation *What type of organisation was responsible?(please tick box)*	X national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	X national government □ national, regional, local energy agency □ regional government □ local government □ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	cool appliances, washing appliances, central heating, lamps and ballasts, electric ovens.
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	X motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) X reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please	□ TV □ Radio X Press

tick box, more are possible)	X other (please specify) website ARCE: www.arceonline.ro, workshops– Application energy efficiency legislation - *ALLE* -during 2003-2006
16. Goal achieved?	X yes □ no □ partly
17. Other comments or additional information about the instrument	-

1. Name of instrument	Awareness- raising CAMPAIGNS for labeling
2. Country	ROMANIA
3. Type	X Awareness- raising □ Regulatory □Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	The instrument guides consumers for an efficient acquisition of domestic appliances.
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) X households (= the group of people forming a household) X retailers □ youngsters □ low income groups □ others
6. Size of target group *What is the size of the target group. Please give a number.*	12.000 leaflets
7. Topic (please tick box)	X energy efficient appliances X lighting X heating/cooling □ other (please specify)
8. Description	The leaflet includes 3 models of energy label for refrigerator with freezer, washing

max. 5 sentences.	machines and lamp. The consumers can use these information at the acquisitions. Also the consumers can find an energy label with general main explications. The leaflets was distributed in shops.
9. Start date -End date (dd-mm-yy)	January 2007 – October 2007
10. Budget (total, in €)	3600 EU
11. Organisation *What type of organisation was responsible?(please tick box)*	□ national government X national, regional, local energy agency □ regional government □ local government □ utilities X retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify) manufacturers and dealers.
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government X national, regional, local energy agency □ regional government □ local government □ utilities X retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO X other (please specify) – Project CEECAP
13. Which type of appliance does the instrument want to influence?	cool appliances, washing machines, lamps
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	X motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)

15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio X Press X other (please specify) Shops
16. Goal achieved?	X yes □ no □ partly
17. Other comments or additional information about the instrument	-

1. Name of instrument	MARKET WORKSHOP regarding energy labelling of appliances
2. Country	ROMANIA
3. Type	X Awareness- raising □ Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	The instrument provides information for the stakeholders of domestic appliance's market to improve energy efficiency at this appliances.
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) X households (= the group of people forming a household) X retailers □ youngsters □ low income groups X others - manufactures
6. Size of target group *What is the size of the target group. Please give a number.*	400 participants (20 workshops)
7. Topic (please tick box)	X energy efficient appliances X lighting

	X heating/cooling □ other (please specify)
8. Description *max. 5 sentences.*	The instrument facilitates information of the stakeholders above the energy efficiency legislation, Government Decision, market survey activities of ARCE. Also, this instrument can help by the network information and exchange of experience between all actors in the market: manufacturers, retailers of the appliances and state institutions/decision makers, because each of them had their own contribution on Romanian market.
9. Start date -End date (dd-mm-yy)	01.01.2006-31.12.2007
10. Budget (total, in €)	3000 EU
11. Organisation *What type of organisation was responsible?(please tick box)*	□ national government X national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government X national, regional, local energy agency □ regional government □ local government □ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO X other (please specify) – Project CEECAP, Cooperation Programm ARCE-ADEME
13. Which type of appliance does the instrument want to	cool appliances, washing appliances, lamps and ballasts, electric ovens.

influence?	
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	X motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio X Press □ other (please specify)
16. Goal achieved?	X yes □ no □ partly
17. Other comments or additional information about the instrument	-

7. BELGIUM

7.1 Market study

Country	Belgium
Author	Wim De Groote
Please state the **legislation** available in your country for energy efficient appliances	
In Belgium, the legislative energy policy measures for energy efficient appliances are triggered by the EU legislation: • The *Energy Consumption Labelling Ordinance* (Koninklijk Besluit van 10 November 1996), which transposed the Council Directive 92/75/EEC on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances into Belgian law. Up to now, implementing directives for household refrigerators and freezers (1996), washing	

machines, washer-driers and driers and dishwashers (1998), households lamps (1999) and electric ovens and air-conditioners (2003) have been adopted.

- Een Ministerieel Besluit (M.B.) van 27 November 1998 translated the Directive 96/57/EC on efficiency requirements for refrigerators and freezers and their combinations into Belgian law.
- The Buildings Directive and its translation into Belgian law (by each of the 3 regions) has also effects for 2 particular “appliances” i.e. heating and domestic hot water installations.

Please state the **fiscal instruments** available in your country for energy efficient appliances

- Eco tax (Recupel) on electric appliances and lamps : It’s an environmental disposal tax applied to several appliances and incandescent lamps.

-There are tax incentives (40 %) for purchasing heat pumps, condensing boilers and solar collectors

- In 2006, each household in Flanders (about 3,4 millions) has received a free CFL of 20 Watt

- In Flanders the utilities give a rebate (subsidy) of 250 € for gas tumble dryers and for domotica (100 €)

- In the Brussels Region there is a rebate (not fiscal but direct subsidy paid after the sale) for energy-efficient appliances : A+ and A++ class efficiency freezers and refrigerators (100 € and 150 € resp.), A/A/A washing machines (100 €), A tumble dryers (100 €) and gas tumble dryers (400 €).

Supportive **instruments** (awareness campaigns, training schemes available)

Whereas good insulation of new and existing buildings gets an increasing attention and public support (public initiated awareness campaigns and training schemes), this kind of attention does not exist for the promotion of energy efficient electrical appliances at the national level up to now.

The most important initiative is the website www.energievreters.be which has been launched by the Federal Administration of Environment in 2007. This website helps consumers to find the most efficient appliance, or to evaluate their existing one.

The Energy Agency of the Brussels Region is launching an interactive website on appliances very soon. Visitors will be able to evaluate their total electricity consumption (benchmark), and that of their most important appliances.

The energy administrations of the 2 other Regions (Flanders and Walloon) have published some leaflets on

appliances.

Problems identified (awareness, technology available, target groups)

- Within the EU, Belgium is lagging behind in terms of energy efficiency in its building sector, as can be derived from numerous expert studies and from international comparisons (e.g. ODYSSEE-MURE). As a consequence, the 3 regions (which are responsible for energy policy in Belgium, except product policy, energy tariffs, and nuclear power) have focused to implement European legislation and especially with setting Energy Performance Standards for new buildings, and energy labeling for existing ones. For electric appliances, lighting and stand-by losses there is in general a lack of time and awareness within the public authorities, with the exception of the Brussels D.C.
- Compared to several other countries such as Denmark, The Netherlands and Germany, taxes on electricity consumption are very low. Because of a de facto monopoly in the power sector, however, electricity prices are already high, and there seems no much room politically to raise taxes.

Initial recommendations for successful market transformation, what next?

- With regard to energy efficient appliances, the energy efficiency policies in Belgium will continue to be determined by EU legislation. The single most important recommendation is setting minimum energy efficiency requirements under the EU Directive on Energy-Using Products (EuP Directive 2005/32/EC) and a revision of the EU Energy Labelling Directive.
- Rebates and subsidies seem to have a low effectiveness as they are open for free riders. Only for low-income families (14 % to 25 % of the population), appropriate financial incentives such as rebates seem to be justified.

Highlights (most successful instrument in the country so far)

Legislative/Normative and Legislative/informative measures have the highest impact. In the residential sector the legislative/normative measures prevail, triggered by the introduction of the European Directives, such as the EU labelling electrical appliances, MEPs and the performance directive for buildings. The latter however does not effect home appliances, with the exception of heating and Domestic Hot Water installations.

The most successful instrument for the introduction of more efficient electrical appliances in households in Belgium probably was the combined introduction of the mandatory EU energy label and a rebate + information campaign by the utilities in the Flanders region for class A appliances in the period 1997-1999. This has led to a relatively high share of A appliances in total sales. A thorough evaluation has been made for Annex 9 of the IA on Demand-Side Management of the International Energy Agency, *Evaluating Energy Efficiency Policy Measures & DSM Programmes - Country Reports*, http://dsm.iea.org/Publications.aspx?ID=18

As stated in the report, it is difficult to separate the impact of the EU legislation from national measures.

7.2 Country Highlights

1. Name of instrument	Information brochures and/or website
2. Country	Belgium
3. Type	☒Awareness - raising ☐ Regulatory ☐ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	To increase awareness on how to reduce electricity consumption, through leaflets/brochures
5. Target Group(s) (please tick box)	☒ consumers / citizens (= individual) ☒ households (= the group of people forming a household) ☐ retailers ☐ youngsters ☐ low income groups ☐ others
6. Size of target group *What is the size of the target group. Please*	All the population

give a number.	
7. Topic (please tick box)	☒ energy efficient appliances ☒ lighting ☒ heating/cooling ☒ other (please specify): cooking
8. Description *max. 5 sentences.*	Each of the 3 regions in Belgium, competent for energy policy (Flanders , Walloon and Brussels D.C.), plus the Federal Administration of Environment, competent for product policy, have leaflets or a website on the choice and use of household appliances. There is also a EU-supported website on energy-efficient appliances, run by a NGO, with many unique visitors.
9. Start date -End date (dd-mm-yy)	January 2000
10. Budget (total, in €)	n.a.
11. Organisation *What type of organisation was responsible?(please tick box)*	☒ national government □ national, regional, local energy agency ☒ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) ☒ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	☒national government □ national, regional, local energy agency ☒ regional government □ local government □ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ☒ other : EU Commission (TopTen website, under the IEE Programme)

13. Which type of appliance does the instrument want to influence?	☒ All kind of electrical appliances
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	☒ motivational factors (awareness, knowledge, social norms, attitude, intention) ☐ facilitating factors (external financial resources, external technical resources, external organisational resources) ☐ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	☐ TV ☐ Radio ☒ Press ☒ other (please specify): internet, brochures
16. Goal achieved?	☐ yes ☐ no ☐ partly ☒ There is no goal
17. Other comments or additional information about the instrument	Additional information on the information initiatives related to household appliances and lighting can be found on the following websites : - www.energievreters.be : Website of the Federal Administration of Environment, which allows visitors to choose an energy-efficient appliance or lamp (so far limited to cold appliances, washing machines, tumble dryers, dishwashing machines and CFL's)or to calculate the energy costs of their actual appliance(s) - www.topten.be : Website run by WWF Belgium with the support of the EU Commission under the IEE Programme which allows visitors to choose an energy-efficient appliance or lamp (so far limited to cold appliances, washing machines, tumble dryers and CFL's) - www.energiesparen.be : Portal website of the Flemish Energy Agency (VEA), with a focus on building codes (especially insulation) but also a page and a downloadable leaflet on Household Appliances and Lighting - www.ibgebim.be : Portal website of the Brussels Energy Agency (IBGE-BIM), with a lot of pages and downloadable small leaflets on several appliances (white goods and brown goods) and lighting

	- http://energie.wallonie.be : Portal website of the Energy Administration of Walloon, with some pages on the energy efficient use of white goods

8. ITALY

8.1 Market study

Country	Italy
Author	Andrea Roscetti
Please state the **legislation** available in your country for energy efficient appliances	
In Households: 1. Presidential Decree No 107 of 9 March 1998 enacting rules for implementing Directive 92/75/EEC concerning information on the energy consumption of domestic appliances, published in G.U. [Official Gazette of the Italian Republic] No 89 of 17 April 1998. 2. MAP [Ministry of Productive Activities] Decree of 2 January 2003 implementing Commission Directive 2002/40/EC of 8 May 2002 stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of electric ovens for household use, G.U. No 23 of 29.1.2003. 3. -MAP [Ministry of Productive Activities] Decree of 2 January 2003 implementing Commission Directive 2002/31/EC of 22 March 2002 stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of air conditioners for household use, G.U. No 23 of 29 January 2003. 4. MICA [Ministry of Industry, Trade and Agriculture] Decree of 10 November 1999 on arrangements for applying energy labelling to dishwashers for household use under Community Directives 92/75/EC and 97/17/EC, G.U. No 269 of 16 November 1999. 5. Decree of 10 July 2001 transposing Commission Directive 98/11/EC of 27 January 1998 stating the arrangements for applying Council Directive 92/75/EEC as regards labelling the energy efficiency of lamps for household use, G.U. No 184 9 August 2001. 6. MICA Decree of 7 October 1998 on the arrangements for applying energy labelling to washing machines, clothes drying machines and washing and drying machines for household use, G.U. No 248 of 23 October 1998. 7. MICA Decree of 2 April 1998 on rules for implementing Commission Directive 94/2/EC of 21 January 1994 stating arrangements for applying Council Directive 92/75/EEC of 22 September 1992 on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and	

combinations thereof, G.U. general series No 248 of 23 October 1998.

8. MAP Decree of 21 September 2005 implementing Commission Directive 2003/66/EC of 3 July 2003 amending Directive 94/2/EC stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof, G.U. No 229 of 1 October 2005.
9. Law No 296 of 27 December 2006 (the 2007 Finance Act) "Provisions for the formation of the State's annual and multi-year budget" published in the Ordinary Supplement to Official Gazette No 299 of 27/12/06 provides in sections 344 to 365 attractive incentives for energy saving that deserve close attention from citizens, traders and entrepreneurs.

Please state the **fiscal instruments** available in your country for energy efficient appliances

In Law No 296 of 27 December 2006 (the 2007 Finance Act):

10. comma 347: Replacement (in new building) of winter conditioning installations by installations provided with condensing boilers and simultaneous updating of the distribution system. Gross tax deduction equal to 55% of the amounts remaining payable by the taxpayer, up to a maximum deduction of €30,000.
11. comma 351: New buildings or building complexes to achieve an annual primary energy requirement limit value per useful square meter at least 50% lower than the values set out in Annex C (1) Table 1 of Legislative Decree No 192 of 19 August 2005, and the energy requirement for lighting and summer conditioning. Contribution equal to 55% of the extra costs of achieving this energy requirement limit value, including the higher design costs. Total volume of building/complex exceeding 10,000 cubic meters Works commencing by 31 December 2007 Works completed within three years thereafter.
12. comma 353: Replacement of refrigerators, freezers and combinations thereof by similar appliances of energy class not inferior to A+ Gross tax deduction equal to 20% of the amounts remaining payable by the taxpayer, up to a maximum deduction of €200 per appliance, in a single installment. Operation to be carried out by 31 December 2007.

Supportive **instruments** (awareness campaigns , training schemes available)

- Eni 30%, big information campaign for efficiency (TV and advertisement), cost: 20 M€, other energy companies, institutions (national and local) are promoting energy saving campaigns and
- ENEL Campaign "Intelligent consume"
- White certificates support the information, formation and promotion on Energy efficiency (with an additional saving defined: +5% in presence of such projects)
- CFL free distribution in 2005-2006 (EnelSì)

- caterpillar (Radio program on the 2nd RAI Radio channel, promoting National energy saving day in Italy) - Casaclima (Bolzano province – energy efficient buildings certificate) - EuroTopten project - WWf Italy campaign: GenerATION for climate (includes some actions on electricity savings).
Problems identified (awareness, technology available, target groups)
- not clearly defined the budget for all fiscal instruments - legal instruments needs more control - the labelling instrument needs information for consumers - in the 2008 Finance act there is no support for replacement of low efficient appliances - retailers are not enough informed about energy efficiency
Initial recommendations for successful market transformation, what next?
- have a clear and simpler policy on incentives, for a longer period (in a year is impossible to change all low-efficient appliances, the big barrier is the lack of information) - the legislation for retailers (information and formation) and manufacturers (appliances efficiency) could have a big impact - European directives needs to be more detailed for a better application at national level (define objectives for minimum efficiency, define stocks for turnover, ...) - Simplify the method of energy labelling, giving values for savings in real money (€).
Highlights (most successful instrument in the country so far)
- information for citizens (TV spots), but clear and simple for every appliance.

8.2 Country highlights

1. Name of instrument	Presidential Decree No 107 of 9 March 1998 enacting rules for implementing Directive 92/75/EEC concerning information on the energy consumption of domestic appliances, published in G.U. [Official Gazette of the Italian Republic] No 89 of 17 April 1998.
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal	

Please state the goal of the instrument in 1 sentence.	
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	● energy efficient appliances ● lighting ● heating/cooling □ other (please specify)
8. Description *max. 5 sentences.*	Rules for implementing Directive 92/75/EEC concerning information on the energy consumption of domestic appliances.
9. Start date -End date (dd-mm-yy)	17-06-1998
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ● manufacturers
12. Financier of the instrument	□ national government □ national, regional, local energy agency

What type of organisation financed the instrument?	□ regional government □ local government □ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● ovens ● refrigerators and freezers and combinations ● lighting ● A/C ● dishwashers ● washing and drying machines
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio ● Press □ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	MAP [Ministry of Productive Activities] Decree of 2 January 2003 implementing Commission Directive 2002/40/EC of 8 May 2002 stating the arrangements for

	applying Council Directive 92/75/EEC on labelling the energy consumption of electric ovens for household use, G.U. No 23 of 29.1.2003.
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	labelling the energy consumption of electric ovens for household use
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling ● ovens
8. Description *max. 5 sentences.*	Implementation of Commission Directive 2002/40/EC of 8 May 2002 stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of electric ovens for household use
9. Start date -End date (dd-mm-yy)	01-01-2003
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please*	● national government □ national, regional, local energy agency □ regional government □ local government

tick box)	□ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ● manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● Electric ovens for household use
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio ● Press □ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information	

about the instrument	

1. Name of instrument	MAP [Ministry of Productive Activities] Decree of 2 January 2003 implementing Commission Directive 2002/31/EC of 22 March 2002 stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of air conditioners for household use, G.U. No 23 of 29 January 2003.
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of air conditioners for household use
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	□ energy efficient appliances □ lighting ● heating/cooling □ other (please specify)
8. Description *max. 5 sentences.*	Implementation of Commission Directive 2002/31/EC of 22 March 2002 stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of air conditioners for household use
9. Start date -End date (dd-mm-yy)	01-01-2003

10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ● manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● air conditioners for household use
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio ● Press □ other (please specify)

16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	MICA [Ministry of Industry, Trade and Agriculture] Decree of 10 November 1999 on arrangements for applying energy labelling to dishwashers for household use under Community Directives 92/75/EC and 97/17/EC, G.U. No 269 of 16 November 1999.
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	applying energy labelling to dishwashers for household use
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling ● dishwashers

8. Description *max. 5 sentences.*	Arrangements for applying energy labelling to dishwashers for household use under Community Directives 92/75/EC and 97/17/EC
9. Start date -End date (dd-mm-yy)	10-11-1999
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● dishwashers
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the	□ TV

instrument communicated?(please tick box, more are possible)	□ Radio ● Press □ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	- Decree of 10 July 2001 transposing Commission Directive 98/11/EC of 27 January 1998 stating the arrangements for applying Council Directive 92/75/EEC as regards labelling the energy efficiency of lamps for household use, G.U. No 184 9 August 2001
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	arrangements for applying Council Directive 92/75/EEC as regards labelling the energy efficiency of lamps for household use
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	

7. Topic (please tick box)	□ energy efficient appliances ● lighting □ heating/cooling □ other (please specify)
8. Description *max. 5 sentences.*	arrangements for applying Council Directive 92/75/EEC as regards labelling the energy efficiency of lamps for household use
9. Start date -End date (dd-mm-yy)	10-08-2001
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ● manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● lighting
14. *Which type of behavioural factors*	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources,

does the instrument want to influence? (please tick box)	external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated*?*(please tick box, more are possible)	□ TV □ Radio ● Press □ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	MICA Decree of 7 October 1998 on the arrangements for applying energy labelling to washing machines, clothes drying machines and washing and drying machines for household use, G.U. No 248 of 23 October 1998
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	labelling the energy consumption washing machines, clothes drying machines and washing and drying machines for household use
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group	

What is the size of the target group. Please give a number.	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling ● ovens
8. Description *max. 5 sentences.*	arrangements for applying energy labelling to washing machines, clothes drying machines and washing and drying machines for household use, G.U. No 248 of 23 October 1998
9. Start date -End date (dd-mm-yy)	01-01-2003
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ● manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the	● washing machines, clothes drying machines and washing and drying machines for household use

instrument want to influence?	
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated*?*(please tick box, more are possible)	□ TV □ Radio ● Press □ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	- MICA Decree of 2 April 1998 on rules for implementing Commission Directive 94/2/EC of 21 January 1994 stating arrangements for applying Council Directive 92/75/EEC of 22 September 1992 on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof, G.U. general series No 248 of 23 October 1998.
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household)

	● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling ● refrigerators
8. Description *max. 5 sentences.*	Arrangements for applying Council Directive 92/75/EEC of 22 September 1992 on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof
9. Start date -End date (dd-mm-yy)	01-01-2003
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ● manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers

	□ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● domestic electric refrigerators, domestic electric freezers and combinations thereof
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio ● Press □ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	- MAP Decree of 21 September 2005 implementing Commission Directive 2003/66/EC of 3 July 2003 amending Directive 94/2/EC stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof, G.U. No 229 of 1 October 2005.
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal

4. Goal *Please state the goal of the instrument in 1 sentence.*	labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling ● refrigerators
8. Description *max. 5 sentences.*	Implementing Commission Directive 2003/66/EC of 3 July 2003 amending Directive 94/2/EC stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof
9. Start date -End date (dd-mm-yy)	01-10-2005
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO

	● manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● domestic electric refrigerators, domestic electric freezers and combinations thereof
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio ● Press □ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	- MAP Decree of 21 September 2005 implementing Commission Directive 2003/66/EC of 3 July 2003 amending Directive 94/2/EC stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof, G.U. No 229 of 1 October 2005.
2. Country	Italy
3. Type	□ Awareness- raising ● Regulatory □ Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) ● retailers □ youngsters □ low income groups ● manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling ● refrigerators
8. Description *max. 5 sentences.*	implementing Commission Directive 2003/66/EC of 3 July 2003 amending Directive 94/2/EC stating the arrangements for applying Council Directive 92/75/EEC on labelling the energy consumption of domestic electric refrigerators, domestic electric freezers and combinations thereof

9. Start date -End date (dd-mm-yy)	01-10-2005
10. Budget (total, in €)	0
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities ● retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ● manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	□ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● domestic electric refrigerators, domestic electric freezers and combinations thereof
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	● motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please	□ TV □ Radio ● Press

tick box, more are possible)	□ other (please specify)
16. Goal achieved?	● yes □ no □ partly
17. Other comments or additional information about the instrument	

1. Name of instrument	- Law No 296 of 27 December 2006 (the 2007 Finance Act) “Provisions for the formation of the State’s annual and multi-year budget” published in the Ordinary Supplement to Official Gazette No 299 of 27/12/06 provides in sections 344 to 365 attractive incentives for energy saving that deserve close attention from citizens, traders and entrepreneurs. Comma 347: Replacement (in new building) of winter conditioning installations by installations provided with condensing boilers and simultaneous updating of the distribution system. Gross tax deduction equal to 55% of the amounts remaining payable by the taxpayer, up to a maximum deduction of €30,000.
2. Country	Italy
3. Type	□ Awareness- raising □ Regulatory ● Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	Replacement (in new building) of winter conditioning installations by installations provided with condensing boilers and **simultaneous updating of the distribution system**.
5. Target Group(s) (please tick box)	● consumers / citizens (= individual) ● households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ manufacturers
6. Size of target group	

What is the size of the target group. Please give a number.	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling ● heating distribution system
8. Description *max. 5 sentences.*	Comma 347: Replacement (in new building) of winter conditioning installations by installations provided with condensing boilers and simultaneous updating of the distribution system. Gross tax deduction equal to 55% of the amounts remaining payable by the taxpayer, up to a maximum deduction of €30,000.
9. Start date -End date (dd-mm-yy)	01-01-2007
10. Budget (total, in €)	?
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of	● heating distribution system

appliance does the instrument want to influence?	
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	□ motivational factors (awareness, knowledge, social norms, attitude, intention) ● facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	● TV ● Radio ● Press □ other (please specify)
16. Goal achieved?	□ yes □ no □ partly ● ?
17. Other comments or additional information about the instrument	

1. Name of instrument	- Law No 296 of 27 December 2006 (the 2007 Finance Act) “Provisions for the formation of the State’s annual and multi-year budget” published in the Ordinary Supplement to Official Gazette No 299 of 27/12/06 provides in sections 344 to 365 attractive incentives for energy saving that deserve close attention from citizens, traders and entrepreneurs. Comma 351: New buildings or building complexes to achieve an annual primary energy requirement limit value per useful square meter at least 50% lower than the values set out in Annex C (1) Table 1 of Legislative Decree No 192 of 19 August 2005, and the energy requirement for lighting and summer conditioning. Contribution equal to 55% of the extra costs of achieving this energy requirement limit value, including the higher design costs. Total volume of building/complex exceeding 10,000 cubic meters
2. Country	Italy

3. Type	□ Awareness- raising □ Regulatory ● Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	Achieve an annual primary energy requirement limit value per useful square meter at least 50% lower than the values set out in Annex C (1) Table 1 of Legislative Decree No 192 of 19 August 2005, and the energy requirement for lighting and summer conditioning.
5. Target Group(s) (please tick box)	● consumers / citizens (= individual) ● households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ manufacturers
6. Size of target group *What is the size of the target group. Please give a number.*	
7. Topic (please tick box)	□ energy efficient appliances ● lighting ● heating/cooling
8. Description *max. 5 sentences.*	Comma 351: New buildings or building complexes to achieve an annual primary energy requirement limit value per useful square meter at least 50% lower than the values set out in Annex C (1) Table 1 of Legislative Decree No 192 of 19 August 2005, and the energy requirement for lighting and summer conditioning. Contribution equal to 55% of the extra costs of achieving this energy requirement limit value, including the higher design costs. Total volume of building/complex exceeding 10,000 cubic meters
9. Start date -End date (dd-mm-yy)	01-01-2007 Works commencing by 31 December 2007 Works completed within three years thereafter.
10. Budget (total, in €)	?
11. Organisation *What type of*	● national government □ national, regional, local energy agency

organisation was responsible?(please tick box)	□ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	● lighting ● A/C
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	□ motivational factors (awareness, knowledge, social norms, attitude, intention) ● facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	● TV ● Radio ● Press □ other (please specify)
16. Goal achieved?	□ yes □ no □ partly

	● ?
17. Other comments or additional information about the instrument	

1. Name of instrument	- Law No 296 of 27 December 2006 (the 2007 Finance Act) “Provisions for the formation of the State’s annual and multi-year budget” published in the Ordinary Supplement to Official Gazette No 299 of 27/12/06 provides in sections 344 to 365 attractive incentives for energy saving that deserve close attention from citizens, traders and entrepreneurs. Comma 353: Replacement of refrigerators, freezers and combinations thereof by similar appliances of energy class not inferior to A+ Gross tax deduction equal to 20% of the amounts remaining payable by the taxpayer, up to a maximum deduction of €200 per appliance, in a single installment. Operation to be carried out by 31 December 2007
2. Country	Italy
3. Type	□ Awareness- raising □ Regulatory ● Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	Replacement of refrigerators, freezers and combinations thereof by similar appliances of energy class not inferior to A+. 1210 GWh of savings until 2010.
5. Target Group(s) (please tick box)	● consumers / citizens (= individual) ● households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ manufacturers
6. Size of target group *What is the size of the target group. Please*	

give a number.	
7. Topic (please tick box)	□ energy efficient appliances □ lighting □ heating/cooling □ refrigerators, freezers and combinations thereof
8. Description *max. 5 sentences.*	Replacement of refrigerators, freezers and combinations thereof by similar appliances of energy class not inferior to A+ Gross tax deduction equal to 20% of the amounts remaining payable by the taxpayer, up to a maximum deduction of €200 per appliance, in a single installment. Operation to be carried out by 31 December 2007.
9. Start date -End date (dd-mm-yy)	01-01-2007 31-12-2007
10. Budget (total, in €)	
11. Organisation *What type of organisation was responsible?(please tick box)*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ manufacturers
12. Financier of the instrument *What type of organisation financed the instrument?*	● national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the	● refrigerators, freezers and combinations thereof

instrument want to influence?	
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	□ motivational factors (awareness, knowledge, social norms, attitude, intention) ● facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	● TV ● Radio ● Press □ other (please specify)
16. Goal achieved?	□ yes □ no □ partly ● ?
17. Other comments or additional information about the instrument	

9. BULGARIA

9.1 Market study

Country	Bulgaria
Author	EnEffect, Center for Energy Efficiency
Please state the **legislation** available in your country for energy efficient appliances	
The harmonization of the Bulgarian legislative framework with the European one in the field of appliances has been conducted through the introduction of the European acts of the acquis communautaire, which form part of the Global Approach and the New Approach. The European Directives, incorporated in the New Approach, are introduced in the country by virtue of ordinances, which define the significant specific requirements for these products on the grounds of the Law on	

Technical Requirements with Respect to Products. Directives related to the Global Approach, which deal with the requirements for labeling of appliances, are introduced in Bulgarian legislation on the grounds of the Law on Consumer Protection.

Ordinance concerning the requirements for labeling of appliances with respect to their consumption of energy and other resources

The Ordinance has been worked out by the Ministry of Economy (currently Ministry of Economy and Energy) and approved by virtue of Council of Ministers' Decree No 224 of 9 October 2003, in force as of 1 September 2004. The Ordinance transposes in full the requirements of the Framework Directive and all Implementing Directives related to appliance labeling.

The Ordinance defines the obligations of manufacturers, importers and traders to present information about the energy efficiency performance of the appliances manufactured/marketed by them by means of an energy label and information sheet in Bulgarian language. The control on the implementation of the Ordinance has been assigned to the Commission for Consumer Protection.

The Law on Technical Requirements with respect to products lays down the provisions for determination of the most substantial requirements concerning the products sold on the local market and the procedures for performing the assessment compliance and market supervision.

Directives 96/57/EEC, 92/42/EEC and 2000/55/EEC are transposed by virtue of the following ordinances (by-laws):

- Ordinance concerning the substantial requirements for and assessment of the compliance of household refrigerators, approved in implementation of the provisions of the above Law. It defines the requirements for maximum permitted energy consumption of household refrigerators, freezers and combinations thereof. Approved by virtue of Decree No. 193 of the Council of Ministers of 23 August 2002, promulgated in SG Vol. 84/3 September 2002, in force as of 4 March 2004.
- Ordinance concerning the substantial requirements for and assessment of the compliance of hot water boilers fired by liquid fuels or gas. Approved by virtue of Decree No. 138 of the Council of Ministers of 21 June 2004, promulgated in SG Vol. 56/29 June 2004, in force as of 29 June 2005.
- Ordinance concerning the substantial requirements for and assessment of ballasts for fluorescent light sources with respect to the energy efficiency requirements. Promulgated in SG Vol. 77/3 June 2004, in force as of 29 June 2005.

Most of the EU norms for performance testing of appliances are adopted in respective
Bulgarian State Standards (BDS). The draft appliance standards are developed and proposed for approval by two main technical committees (TC) – TC 6 Home appliances – covering washing

machines, tumble dryers, electric ovens and dishwashers and TC 43 Refrigerating equipment - covering refrigerators and air conditioners. The Technical committees are responsible for the development and presentation for approval of the draft Bulgarian standards as well as for the translation and adoption of international norms. Members of the technical committees are local manufacturers, testing facilities, government institutions, technical universities, Academy of science and research institutes.

Bulgarian standards for performance measurement of appliances

Appliance	EU test standard	Respective Bulgarian standard	Respective TC
Refrigerators	EN 153:1995 Methods of measuring the energy consumption of electric mains operated household refrigerators, frozen food storage cabinets, food freezers and their combinations, together with associated characteristics	BDS EN 153	TC 43
Tumble dryers	EN 61121 Tumble dryers for household use - Methods for measuring the performance	BDS EN 61121:2003	TC 6
Clothes washing machines	EN 60456 Clothes washing machines for household use - Methods for measuring the performance	BDS EN 60456 (2005): 2005	TC 6
Electric ovens	EN 50304 Electric ovens for household use - Methods for measuring the energy consumption	BDS EN 50304:2003	TC 6
Electric dishwashers	EN 50242 Electric dishwashers for household use - Test methods for measuring the performance	BDS EN 50242:2003	TC 6
Air conditioners	EN 14511 Air conditioners, liquid chilling packages and heat pumps with electrically driven	BDS EN 14511:2007	TC43

	compressors for space heating and cooling			

Please state the **fiscal instruments** available in your country for energy efficient appliances

Specific fiscal instruments dedicated specifically to energy efficient electrical appliances do not exist in Bulgaria. There are several financial mechanisms supporting energy efficiency projects, where energy efficient electrical appliances could be a part of.

Residential Energy Efficiency Credit Line – aims to give householders across Bulgaria an opportunity to realise the benefits of energy efficiency home improvements by providing them with loans and incentive grants through six local participating banks. Householders can obtain incentive grants from €350 to €2000. Loans and grants are given to specific energy efficiency installations. The only energy efficient electrical appliances included in the list are the Cooling and Heating Heat Pump Systems.

Bulgarian Energy Efficiency Fund – Financing of energy efficiency projects with a budget between €15000 and €1.5 mil. The project could include energy efficiency measures in indoor and outdoor lighting. Energy efficient appliances could be also a part of a project.

Supportive **instruments** (awareness campaigns , training schemes available)

Recently, the EC funded project CEECAP developed several supportive instruments related to energy efficient appliances. This includes awareness campaigns and training schemes directed to increase the national capacity to design and implement European appliance efficiency and labelling policies and national policies to support and complement these; to verify and enforce compliance with the EU-based regulations; and to effectively inform the market about labels, standards and other appliance energy efficiency issues, working in collaboration with market parties (importers, retailers and consumer organisations). The long-term aim is an acceleration of appliance energy efficiency improvements in new appliances, as a result of higher market shares for efficient products, leading to a more efficient appliance stock and energy and national carbon emission savings.

In the past there were two campaigns directed to the residential sector, introducing energy efficient lighting.
First campaign was initiated and financed by the Bulgarian Government in 1999. About 480 000 low income people have received energy efficient CFLs.
In the framework of the GEF/UNDP funded project Energy Efficiency Strategy to Mitigate GHG Emissions. Energy Efficiency Demonstration Zone in Gabrovo 200 CFLs have been delivered to the inhabitants of a pilot residential apartment building (2 CFLs per apartment) in the city of Gabrovo.

The EC funded project Greenlight, which is currently in implementation, promotes the energy efficient lighting but not in the residential sector.

In 2005 a detailed national market study report about energy efficient appliances including stakeholders analysis was developed with the financing of the GEF.

Problems identified (awareness, technology available, target groups)

The main problems related to energy efficient appliances in Bulgaria could be summarized as follows:

- Lack of political and decision makers awareness on energy efficiency products thus this issue has very low priority in the political agenda of the country which leads to lack of financial and human recourses to deal the problems.
- A general observation, including position from market stakeholders, is that there is no effective procedure for verification of the compliance with the ordinance of labeling moreover they assume that there is practice of false labels. This includes misrepresentation of information, false and misleading information, etc. This is confirmed also by the fact that most of the retailer's owned brands do not have declared energy class but are widely offered in the stores.
- The survey of household appliance prices on the Bulgarian market shows that the purchase of a new appliance is a significant burden for an average household and the main reason for purchase of low-price and quality products. This is confirmed also by the market stakeholders and is leading to the general conclusion that Bulgarian market is highly price driven. Price levels continue to be the most important consideration when customers make purchasing decisions.
- There is not enough information delivered to consumers of the benefits of energy efficient appliances.
- With current electricity prices the savings from the purchase of high-energy efficient appliances are not comparable with the price difference and the pay back period will be relatively too long.

Initial recommendations for successful market transformation, what next?

In National Market Introduction Plan developed in the framework of CEECAP project the following recommendations have been presented:

- In order to have the appliance energy efficiency promoted as a national priority there is a necessity of raising the awareness on all major aspects related to development, application and monitoring of the policy of energy efficiency of household appliances and evaluation of its impact. Successful international practices in the field of national policies and programmes for energy efficiency of household appliances should be collected and analysed by experts and decision makers from Ministry of economy and energy (MEE) and the Energy efficiency agency (EEA). On policy level different scenarios should be analysed and discussed for application of different policy and market

instruments including forecasts estimated results in terms of energy and cost savings and reduction of GHG emissions.

- Retailers to invest recourses to train their own staff to provide customers with the proper information about energy efficient appliances. Information activities to be organized for retailers in order to increase the number of labeled appliances in shops and to include information about energy class in the trade catalogues.
- Specific training programme should be developed and implemented targeted to NGOs and media. Further joint activities should be coordinated between government institutions, market stakeholders, media and NGOs for provision of information to final consumers. The NGOs themselves should actively organize local workshops and meeting to promote energy efficient labeling and explain the benefits of purchase of high efficient appliances.
- Communication strategy aimed at end-users should be developed and further implemented in close cooperation between all parties – government institutions, large retailer chains and manufacturers, media and NGOs. Temporary information centers should be set up in large commercial sites. National events, press-conferences and other events devoted to the energy efficiency of household appliances should be organized jointly with MEE and EEA, information centers should be set up at the municipal administrations and district centres. Meetings for elucidation of the benefits from efficient appliances should be organized for corporate buyers (for instance hotels, offices etc.).
- Recommendations should be worked out for approval of criteria for supply of appliances, which comprise requirements for energy efficiency of appliances. At policy level different scenarios should be developed and discussed on possible financial and or non financial incentives for end users or development of a programme for early replacement of more than 10 years old appliances.
- In order to have successful implementation of energy efficiency labelling program in the country and sustainable market transformation a necessity appears for development of financial incentive scheme for end-use consumers to compensate the initial high cost investment burden.

Highlights (most successful instrument in the country so far)

The CEECAP project developed the following instruments which could help easier market transformation towards energy efficient appliances:

- Training program for national government officials and experts related to the legislation, verification &enforcement aspects of appliance labelling and energy efficiency policy, as well as general aspects of the EU regulations and policies.
- National Verification & Enforcement Plan & Actions for state officials, and the start of the planned actions in the country. Organisation of activities to enforce energy labelling in practice.

- Training program for retailers and manufacturers to the market introduction and consumer & retailer education aspects of appliance labelling and energy efficiency policy, as well as the general aspects of the EU regulations and policies.
- National Market Introduction Plan & Actions for retailers and manufacturers and the start of the planned actions in the countries. Specified national action plans for an appliance and equipment energy labelling program, by informing and involving market parties, especially manufacturers / importers, retailers and consumers.
- Information awareness raising campaign including development of information/promotion brochure for energy efficient (EE) labelling for household appliances describing EU requirements for labelling, the content and meaning of the labels, benefits for purchases of higher EE appliances, practical tips and tricks for more energy efficient usage of the household appliances. The brochure will be distributed among all stakeholders via several municipal EE information desks established within information centers providing information services to local citizens, some of the biggest retailer chains shops as well as special workshops and seminars of respective governmental and local authorities.

9.2 Country Highlights

1. Name of instrument	Information awareness raising campaign
2. Country	Bulgaria
3. Type	**x** Awareness- raising □ Regulatory □Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	To increase awareness about energy efficiency labelling and to facilitate the market transformation towards energy efficient appliances
5. Target Group(s) (please tick box)	**x** consumers / citizens (= individual) **x** households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ others

6. Size of target group *What is the size of the target group. Please give a number.*	No limits
7. Topic (please tick box)	**x** energy efficient appliances □ lighting □ heating/cooling **x** other (energy efficiency labelling)
8. Description *max. 5 sentences.*	The main activities of the campaign cover development of information/promotion brochure for energy efficient (EE) labelling for household appliances describing EU requirements for labelling, the content and meaning of the labels, benefits for purchases of higher EE appliances, practical tips and tricks for more energy efficient usage of the household appliances. The brochure will be distributed among all stakeholders via several municipal EE information desks established within information centers providing information services to local citizens, some of the biggest retailer chains shops as well as special workshops and seminars of respective governmental and local authorities
9. Start date -End date (dd-mm-yy)	September 2007
10. Budget (total, in €)	N/A
11. Organisation *What type of organisation was responsible?(please tick box)*	**x** national government □ national, regional, local energy agency □ regional government **x** local government □ utilities **x** retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) **x** NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	**x** national government □ national, regional, local energy agency □ regional government □ local government □ utilities

	□ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) **x** NGO **x** other (European Commission – IEE program, GEF, UNDP)
13. Which type of appliance does the instrument want to influence?	Refrigerators Tumble dryers Clothes washing machines Electric ovens Electric dishwashers Air conditioners
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	**x** motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio **x** Press **x** other (brochures, local info desks)
16. Goal achieved?	□ yes □ no **x** partly
17. Other comments or additional information about the instrument	The answers of the above question No 11 are related to the involved parties instead of the responsible ones.

10. HUNGARY

10.1 Market study

Country	Hungary
Author	Benigna Boza-Kiss, Junior Researcher

Please state the **legislation** available in your country for energy efficient appliances

The legislative background and the main directions of energy policy and energy saving measures for energy efficient appliances in Hungary are mainstreamed by the obligatory transposition of EU legislation and the available European (based) financial instruments. As in many other Central-Eastern and Eastern European transition countries, Hungary's energy policy has traditionally focused on expanding energy supply, while focusing on costs and economic efficiency only modestly, however in the past decade, the government has inclined to place increasing emphasis on the demand side, and current changes indicate a positive change in this.

The framework of the regulations on energy efficient appliances is given by the **Energy Policy Concept** (1993) that identifies the main strategic objectives, among which “Increased demand-side energy efficiency” and “Improvement in public information on energy consumption” are mentioned. The Concept was reoriented in 1998 to be in line with the European legal system.

Hungary has had a long-term efficiency program, established in the framework of the Energy Policy Concept, “the **National Energy Conservation and Energy Efficiency Improvement Program**”, which was approved by the government in 1999, and covers the period 2000-2010. The Action Plan includes specific provisions for the annual reduction of energy intensity by 3.5 %/year, for decreasing primary energy demand by 1.79 Mtoe (75 PJ) per year, and for the annual reduction of CO_2 emissions by 5 Mt.

The Directive 2006/32/EC of the European Parliament and the Council on energy end-use efficiency and energy services obliged the Member States to draw up **National Energy Efficiency Action Plans (NEEAP)** indicating the strategy leading to 1% decrease in end-use final energy per year between 2008-2016. Hungary submitted a draft of the first NEEAP as of July 2007, and the final version of the NEEAP is under discussion among the Ministries and then in the Parliament. The NEEAP spans from 2007 to 2013,

in consistency with the New Hungary Development Plan (NHDP).

The NEEAP is linked to two major legislations: The strategic document entitled "**Hungary's Energy Policy for 2007-2020**" passed on 28 November 2007, was taken into account. The Energy Policy identified "strengthening competitiveness", "increasing the security of energy supply", and "promoting sustainable development" as main principles. As mentioned above, the NEEAP is also linked closely to the **New Hungary Development Plan** (NHDP II. 2007-2013).

The key national energy-saving programs and measures that have a specified saving potential (defined until 2013) indicated in the NEEAP are the following:

- The **energy saving support and credit program "For a successful Hungary" for the residential sector**: estimated savings of 3-3.3 PJ/annum

In 2000, a long-term energy-saving program was initiated on the basis of Decision No. 1107/1999. (X. 8.) Korm. This became known in 2000, as the ***Energy-Saving Programme***; in 2001-2002, the ***SZTEN*** (Széchenyi Plan energy-saving) program; in 2003-2006, the ***NEP*** (National Energy-Saving Programme) programmes, and ensured both soft loans and non-refundable aid. The program with slightly changed conditions (see section on fiscal instruments) was announced as ***NEP 2007*** in 2007.

- Supporting the **energy-saving modernisation and renewal of the residential buildings** (so called "**Panel Program**" and "**Panel Program Plus**"): 1-2 PJ/annum

The aim of the support programme is to renovate the energetics of residential buildings built by industrialised technology, as well as to modernise and renew the engineering systems and equipment of such buildings, as well as the roads, parking lots, playgrounds, and parks surrounding these buildings.

- **Energy certificates** (currently being implemented): 2-3 PJ/annum

Inter-ministerial Committee on Energy Saving (co-ordinated by the Ministry of Economy and Transport) was set up, and is responsible for allocating funds to energy saving projects.

Key legislative elements specifically targeted at electrical appliances are:

- **Minimum efficiency standards (MEPS)** for fridges and freezers and their combinations

Hungary introduced MEPS for freezers and refrigerators in 1998, and assigned the Commercial Quality Control Institute (KERMI) to be responsible for testing and certification of these products. The Hungarian Standards Institution prepares and implements all national efficiency standards for

household appliances.

- **Mandatory measures for efficient lighting**

With regard to the relevant EU directives:

- Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility;
- Council Directive 73/23/EEC on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits;

The following standards have been passed:

- MSZ EN 61547: 1995 Equipment for general lighting purposes - EMC immunity requirements (IEC 61547: 1995); Amendment A1: 2000 to MSZ EN 61547: 1995 (IEC 61547: 1995/A1: 2000) (expired).
- MSZ EN 55015: 2000 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment (CISPR 15: 2000); Amendment A1: 2001 to EN 55015: 2000 (CISPR 15: 2000/A1: 2001); Amendment A2: 2002 to EN 55015: 2000 (CISPR 15: 2000/A2: 2002) (expired).
- MSZ EN 61000-3-2: 2000 Electro-magnetic compatibility (EMC) — Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase) (IEC 61000-3-2: 2000 (Modified)); Amendment A2: 2005 to EN 61000-3-2: 2000 (IEC 61000-3-2: 2000/A1: 2001 + A2: 2004) (It expires on 1.1.2008).
- MSZ EN 61000-3-3: 1995 Electro-magnetic compatibility (EMC) - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection (IEC 61000-3-3: 1994); Amendment A1: 2001 to EN 61000-3-3: 1995 (IEC 61000-3-3: 1994/A1: 2001) (expired).
- MSZ EN50285:1999 Energy efficiency of electric lamps for household use. Measurement methods.
- MSZ EN60598-1:2004 - Luminaires. General requirements and tests
- MSZ EN60081:1998 - Double-capped fluorescent lamps. Performance specifications
- MSZ EN60901:1996 - Specification for single-capped fluorescent lamps. Performance specifications
- MSZ EN60920:1991 - Ballasts for tubular fluorescent lamps. General and safety requirements
- MSZ EN60921:2004 - Ballasts for tubular fluorescent lamps. Performance requirements
- MSZ EN60924:1991 - Specification for general and safety requirements for d.c. supplied electronic ballasts for tubular fluorescent lamps

- **Mandatory energy labelling of electrical appliances**:

- The ministerial decree (7/2002. (II. 15.) GM r) on the energy efficiency labelling of dishwashers is in force since 1 July 2002. The regulation is in line with the EU 97/17/EC directive on the energy labelling of household dishwashers;
- The ministerial decree (6/2002. (II. 15.) GM r.) on the energy efficiency labelling of household combined washer-dryers is in force since 1 July 2002. The regulation is in line with the Commission Directive 96/60/EC of 19 September 1996 on the energy labelling of household combined washer-dryers;
- The ministerial decree (77/1999. (XII. 22.) GM r.) on the energy efficiency labelling of household clothes washers
- The ministerial decree (78/1999. (XII. 22.) GM r.) on the energy efficiency labelling of household clothes dryers
- The ministerial decree (5/2002. (II. 15.) GM r.) on the energy efficiency requirements for household electric refrigerators, freezers and their combinations is in force since 1 January 2003. This regulation is in line with the Directive 96/57/EC of the European Parliament and of the Council of 3 September 1996 on energy efficiency requirements for household electric refrigerators, freezers and combinations;
- The ministerial decree (4/2002. (II. 15.) GM r.) on the energy efficiency requirements for domestic lighting;
- Ministerial decree 88/2003 (XII.16 GKM r.) on the energy efficiency requirements and information for household air conditioning appliances;
- Ministerial decree 87/2003 (XII.16 GKM r.) on the energy efficiency requirements and information for household electric cookers;

- **Voluntary labels**

- The ELI (Efficient Lighting Initiative) developed a voluntary label scheme for energy efficient lighting in 2000-2003, which was promoted among lighting producers of 7 countries, among them Hungary.

- Hungarian eco-label is awarded after application and compliance, among other products, for refrigerators and freezers. The legal basis of the label certification system is the Environmental Protection and Regional Development Ministerial Decree 29/1997. (VIII29.)

Please state the **fiscal instruments** available in your country for energy efficient appliances

In 2000, a long-term energy-saving program was initiated on the basis of Decision No. 1107/1999. (X. 8.) Korm. as described above, and with changing names.
In 2006, the **National Energy-Saving Program (NEP)** was narrowed down to applicants from the residential sector due to the scarcity of resources. The program offered a 30% non-refundable grant for energy investments in households with a roof of 300.000 HUF in case of single measures and 600.000 HUF in case of complex renovations. The grant was given for renovations including insulation of walls, doors, windows, roofs, or their complete change, or improving performance or exchange of space or water heating appliances and systems. Due to the high level of interest, the financial resources ran out after a week from the announcement, and 2969 applications were granted.
The programme was modified in 2007, and it was prioritized on complex investments, offering a 15% non-refundable grant that could be supplemented with preferential loan. 3437 grants were distributed throughout the year, in a value of 757 Million HUF grant and 2100.8 Million HUF loan.
The NEP 2008 is under planning, and is expected to be announced during spring 2008. The new NEP will be open for block houses, besides traditional households, and will also include exchange of old non-efficient appliances to efficient domestic electrical appliances.

The "**Energy efficient renovation of residential buildings built with industrialised technology" program**, or commonly known as "Panel Program" aims to aid energetic improvement of flats made of pre-fabricated blocks with weak heat insulation characteristics. These households constitute 18.8% of the total number of flats in Hungary. Maximum one third of the investment cost is financed by the state, further one third is provided by the municipality and the remaining one third is paid by the owner.
The program has been supplemented by a preferential loan program for those households that are unable to cover the remaining 30% investment cost.
The "Panel Program" funds modernization of building shell, HVAC systems and other residential equipment. The grant includes some funds for renovation of roads, parking areas, playgrounds and parks in the buildings' vicinity.

Another source of financing is the **Environment-friendly energy management Operational Program (KIOP)** (for the period 2004-2006), which is one of the operational programs of the National Development

Plan. It is to facilitate environment-friendly energy management by increasing the use of renewable energy sources and by improving energy efficiency. The program provides direct subsidy of 25-75% for renewable energy projects and 30-75% for energy efficiency projects. The Program is accessible for larger projects, as the minimum total project funding is 125 Million HUF.

From 2007, the **Environment and Energy Operational Program (KEOP)** (for the period 2007-2013) includes the grant KEOP 5.1 that funds medium to large size projects that increase the energy efficiency of buildings of different end-users. Residential buildings are not included directly, but municipal (i.e. social housing) and SME-s are. Furthermore, funding is given to energy improvements through third-party financing. The level of the grant is 10-50% of the costs depending on the payback time. The Program is initiated as the financial instrument for the National Energy Efficiency Action Plan.

The **Energy Saving Loan Fund** is a revolving fund offering loans at 1/3 of the base interest rat, managed by the Energy Center and given out by K&H Bank. Among others, the loan is available for installing regulators and meters of district heating, electricity saving investments, insulation, increasing the use of electric appliances and equipment.

Household Precautionary Saving Fund is an instrument where the state completes the savings of individual households or condominiums with 30% or maximum 72.000 HUF/annum. The savings can be used for household renovations, among which for energy saving investments.

Supportive **instruments** (awareness campaigns, training schemes available)

The introduction of "**Accounting based on metering"** was a major step in district heating. According to the Act on District Heating of 1998/18, the district heating companies must cease flat-rate based tariffs and payment that is without metering, and they must establish the conditions of metering by heat centres.

Awareness campaigns and information campaigns with promotional publications, have been carried out in increasing numbers. Many of these were targeted at school children. These normally discuss a selection of energy related saving opportunities in the households, and are largely, but not exclusively informing about electrical appliances. It would be very hard to give a full list of energy saving campaigns and tools, therefore, a selection is presented here.

The "**Energiapersely**" (Energy piggy box) campaign was launched by the electricity supplier, ELMU-EMASZ in September 2007. The main part of the campaign is a website that discusses all major electricity

uses and the related energy saving options. The website is advertised through the traditional media. The website is at http://www.energiapersely.hu/otthon/index.php.

The "**Energiakalkultor**" is a campaign that aims to increase the larger share of a efficient models in case of a few appliance types: washing machines, fridges and lighting. The basis of the campaign is an exchange promotion. Participating shops give a discount for buying efficient products upon presenting the old equipment. There is also a significant attention on information dissemination and awareness raising. An element of the campaign is the competition for "the oldest washing machine" and "for oldest fridge". http://www.energiakalkulator.hu/nyito/

The "**energy school**" campaign is ran by the electricity supplier, ELMU-EMASZ for young school children, and popularizes energy and physics. Main motif of the campaign is a "Phisibus" that can be ordered by schools and they give a day program, where students can participate in energy related games, exercises, classes, etc. The webpage give a supplement to the program, mainly: games, information, class materials, competitions, news, etc. http://www.energiasuli.hu/

The **ELI (Efficient Lighting Initiative)** involved a wide-scale awareness campaign on CFLs. The aim was to significantly increase the market share of energy efficient lighting in Hungary, mainly in the several selected regions. The ELI employed a wide range of marketing instruments from the traditional media to the more innovative phone games on TV, for instance. The ELI also developed a quality scheme and a voluntary label.

The project "**Hungarian Energy Brigades**" ran in 2002-2003, and targeted the members of local communities in the "Zselic" micro-region, including schoolchildren, teachers, parents, local authority representatives, and other interested parties. The project provided examples of how the energy efficiency of households and public institutions can be increased through small changes in people's behaviour and small scale investments. The energy brigades helped to make these changes and investments.

The **Energy Advising Network** or Green Energy network is a network of NGO-s that volunteer to provide information, help, sometimes financial support or actual tools to carry out or just learn about living more efficiently.

Home in Energy is a board game developed by the Green Energy Network, and can help children get acquainted with basic principles of energy savings in a playful way. The game can be ordered or further information is found at http://www.energia.a-jatek.hu/index.php

Problems identified (awareness, technology available, target groups)

- Lack of information and awareness is still significant, and in spite of the increasing number of initiatives in the last years, there is still a need to focus on more successful environmental education and awareness raising at the age of schooling, while paying attention to society level awareness raising, and giving more and more precise information about the actual energy consumption details and the cost effective saving opportunities, and in particular those related to behavioral changes.
- The general public has been found to evaluate energy saving investments with a large discount rate and this shows that in general the direct and especially the indirect benefits of energy efficiency investments are not understood properly.
- There have been a number of programs that have been financing energy efficiency in Hungary, and these must be very positively acknowledged. Nevertheless, successful financial solutions are still needed, and these can mean innovative instruments, such as involving third-party financing more, but removing direct subsidies.
- Due to the faster payback time and larger profit, focus has been largely on building envelope, district heating and prefab buildings. On the other hand electric appliances, and new equipment (office equipment, air conditioning, etc) are expected to increase their role in energy saving potential, thus should be given attention.
- Statistics on energy use is a missing key stone for evidence based policy making and for the ability to inform and raise awareness of households. This is a lack, Hungary needs to make up for urgently.

Initial recommendations for successful market transformation, what next?

- The extent of energy labelling should be increased, and information on standby would be effective to have included as the general public seems to be open for these information currently, with the increasing energy prices and rising awareness,
- Campaigns should focus on specific energy saving options for the households, as it is commonly experienced that householders are not clear what to change. The financial incentives have been directing them clearly to heating and building envelop upgrades, while earlier the introduction of energy labels were important indicators,
- Promotion of ESCOs could be successful to cost effectively improve the energy performance.

Highlights (most successful instrument in the country so far)

It is difficult to determine the level of success of presented instruments, especially so in a comparative manner. However, clearly the National Energy saving Program has been well known in the last few years

and was widely used by the public for increasing the energy efficiency of households. During 2 years, the assigned financial resources were even depleted in a few weeks, indicating the need for larger resources as well as a different application scheme, so that the public is using these resources cost effectively. There is no data however, on the level of energy savings this program has generated. At the same time, it is also difficult to separate the impact of the EU legislation from national measures. The energy labeling of appliances has been a successful instrument, too, but the effects were evident earlier.

10.2 Country highlights

1. Name of instrument	National Energy Saving Programme
2. Country	Hungary
3. Type	□ Awareness- raising □ Regulatory □Fiscal ☒ Financial (Incentives/Subsidies)
4. Goal *Please state the goal of the instrument in 1 sentence.*	Reduce energy intensity by 3.5% each year (assuming an annual GDP growth of 5% and an energy consumption growth rate of 1.5% per year) and the decrease the use of primary energy by 1.8 million TOE (75PJ) per year (energy efficiency goals)
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) □ households (= the group of people forming a household) □ retailers □ youngsters □ low income groups ☒ others Multi-sectoral framework policy
6. Size of target group *What is the size of the target group. Please give a number.*	There is no specific target group, as this is a framework instrument.
7. Topic (please tick box)	□ energy efficient appliances □ lighting

	□ heating/cooling ☒ other (please specify) The program is aimed at different topics in the area of energy efficiency and low scale RES mainly at buildings, envelope, heating and cooling
8. Description *max. 5 sentences.*	The Government resolution 1107/1999 initiated the Energy Saving and Energy Efficiency Action Program in 1999. It was renamed as Hungary's National Energy Saving Programme in 2003 and it offers financial assistance for energy efficiency in different categories. The Programme is revised about every year. The Programme for 2008 is currently under public hearing.
9. Start date -End date (dd-mm-yy)	2000- 2010
10. Budget (total, in €)	800 million EUR (200 billion HUF)
11. Organisation *What type of organisation was responsible?(please tick box)*	☒ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	☒ national government □ national, regional, local energy agency □ regional government □ local government □ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ☒ other (please specify) UNDP/GEF, private sector
13. Which type of	□ All appliances

appliance does the instrument want to influence?	
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	□ motivational factors (awareness, knowledge, social norms, attitude, intention) ☒ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio ☒ Press ☒ other (please specify) Webpages on the internet found, no clear indication of any other means of communication, non-governmental organization
16. Goal achieved?	□ yes □ no ☒ partly
17. Other comments or additional information about the instrument	The instrument is a very strong basis of a long term financial tool for supporting energy efficiency and low scale RES, with certain errors and

1. Name of instrument	Forgó Morgó Kampány (tumbling-grumbling campaign)
2. Country	Hungary
3. Type	☒ Awareness- raising □ Regulatory □Fiscal ☒ Financial (Incentives/Subsidies)
4. Goal *Please state the goal of the instrument in 1 sentence.*	The goal of the campaign is to increase the share of energy efficient household appliances, in particular, CFLs, washing machine and fridges.
5. Target Group(s) (please tick box)	□ consumers / citizens (= individual) ☒ households (= the group of people forming a household)

	☐ retailers ☐ youngsters ☐ low income groups ☐ others
6. Size of target group *What is the size of the target group. Please give a number.*	The target group is all the households (about 3.4 million) in Hungary.
7. Topic (please tick box)	☒ energy efficient appliances ☒ lighting ☐ heating/cooling ☐ other (please specify)
8. Description *max. 5 sentences.*	The campaign promotes energy efficient household appliances, in particular, CFLs, washing machine and fridges. These are selected because they represent a high percentage of the domestic electricity consumption. The campaign includes media elements of traditional (TV spots) and innovative (internet: http://www.energiakalkulator.hu/nyito/) type. The vasis of the campaign is an exchange promotion. Participating shops give a discount for buying efficient products upon presenting the old equipment. There is also a lot information dissemination and awareness raising. An element of the campaign is the competition for “the oldest washing machine” and “for oldest fridge”.
9. Start date -End date (dd-mm-yy)	First action in 2006. Renewed every year.
10. Budget (total, in €)	n/a
11. Organisation *What type of organisation was responsible?(please tick box)*	☐ national government ☐ national, regional, local energy agency ☐ regional government ☐ local government ☐ utilities ☒ retailers ☒ consumer associations ☐ professional associations (e.g. lighting, housing, etc.) ☐ NGO ☒ other (please specify): CECED
12. Financier of the	☐ national government

instrument *What type of organisation financed the instrument?*	□ national, regional, local energy agency □ regional government □ local government □ utilities ☒ retailers ☒ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO ☒ other (please specify) : EU
13. Which type of appliance does the instrument want to influence?	□ All appliances Lighting, washing machine, fridge
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	☒ motivational factors (awareness, knowledge, social norms, attitude, intention) ☒ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	☒ TV □ Radio ☒ Press ☒ other (please specify) Webpage
16. Goal achieved?	□ yes □ no □ partly no information
17. Other comments or additional information about the instrument	

11. NORWAY

11.1. Market study

Country	Norway
Author	Nicolai Feilberg
Please state the **legislation** available in your country for energy efficient appliances	
Enova: www.enova.no	
Please state the **fiscal instruments** available in your country for energy efficient appliances	
Enova grants financing for certain projects involving energy efficiency	
Supportive **instruments** (awareness campaigns , training schemes available)	
Building codes with stronger demands for insulation of outer walls are released every 10-15 years. New building codes are released late 2009.	
Problems identified (awareness, technology available, target groups)	
A problem for energy efficiency is that electric energy has a relative low cost in Norway, due to 99% hydropower generation. In years with much precipitation, the electricity price can be very low. Norway was deregulated in 1992, and even residential customers can buy electric power under spot price. The incentive for efficiency is very low – reflecting the low price of the energy.	
Initial recommendations for successful market tranformation, what next?	
Higher prices.	
Highlights (most successful instrument in the country so far)	
During the energy crisis of 2003, due to low precipitation during the fall of 2002 – the energy minister informed the population that if demand was not lowered soon, prices would rise to a level never seen earlier in Norway (> 0.25 € per kWh. An investment program of heat pumps was introduced – 20% of the cost would be paid by the government if a household invested in air-air heat pumps. The program was very popular and some 20 000 households invested in heat pumps.	

11.2 Country Highlights

1. Name of instrument	Enova: Heat pumps 2003
2. Country	Norway
3. Type	X Awareness- raising □ Regulatory X Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	Reduction of energy demand of Norway
5. Target Group(s) (please tick box)	x consumers / citizens (= individual) x households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ others
6. Size of target group *What is the size of the target group. Please give a number.*	2 000 000 households of Norway
7. Topic (please tick box)	X energy efficient appliances □ lighting X heating/cooling □ other (move from electric heating to other energy carriers)
8. Description *max. 5 sentences.*	
9. Start date -End date (dd-mm-yy)	
10. Budget (total, in €)	
11. Organisation *What type of organisation was*	X national government □ national, regional, local energy agency □ regional government

responsible?(please tick box)	□ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	X national government □ national, regional, local energy agency □ regional government □ local government □ utilities □ retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	Reduction of electric space heating
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	□ motivational factors (awareness, knowledge, social norms, attitude, intention) X facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated*?*(please tick box, more are possible)	X TV X Radio X Press □ other (please specify)
16. Goal achieved?	X yes □ no □ partly
17. Other comments or	Enova financed 20% of investment cost for installation of heat-pumps for

additional information about the instrument	households. Some 20 000 households made the investment. 100 GWh are saved every year due to the instrument.

12. HELLAS

12.1 Market Study

Country	Hellas
Author	CRES

Please state the **legislation** available in your country for energy efficient appliances

1. Presidential Decree No180/1994 (published in the official gazette of the Greek Government, FEK A'114 – 1994) for the transposition of the EU Directive 92/75/EEC into national law, setting the legal framework which concerns the indication by labelling and standard product information of the consumption of energy and other resources by household appliances.
2. Joint Ministerial Decision D6 (published in the official gazette of the Greek Government FEK B'943 – 1994) for the implementation of the EU Directive 94/2/EC, with regard to energy labelling of household electric refrigerators, freezers and their combinations.
3. Ministerial Decision D6 (FEK B'234 – 1996) for the implementation of the EU Directive 95/12/EC, concerning energy labelling of household washing machines.
4. Ministerial Decision D6 (FEK B'247 – 1996) for the implementation of the EU Directive 95/13/EC, with regard to energy labelling of household electric tumble driers.
5. Ministerial Decision D6 (FEK B'386 – 1997) for the implementation of the EU Directive 96/60/EC, with regard to energy labelling of household combined washer-driers.
6. Ministerial Decision D6 (FEK B'591 – 16/06/1998) for the implementation of the EU Directive 97/17/EC, with regard to energy labelling of household dishwashers.
7. Ministerial Decision D6 (FEK B'1792 – 28/09/1999) for the implementation of the EU Directive 98/11/EC, with regard to energy labelling of household lamps.
8. Ministerial Decision D6 (FEK B'267 – 5/03/2003) for the implementation of the EU Directive 2002/40/EC, with regard to energy labelling of household electric ovens.

9. Ministerial Decision D6 (FEK B' 266 – 5/03/2003) for the implementation of the EU Directive 2002/31/EC, with regard to energy labelling of household air-conditioners.

10. FEK B'1144 - 28/07/2004 for the implementation of the EU Directive 2003/66/EC, concerning energy labelling of household electric refrigerators, freezers and their combinations.

11. Presidential Decree No178 (FEK A'131 – 18/06/1998) for the implementation of the EU Directive 96/75/EC, on energy efficiency requirements for household electric refrigerators, freezers and combinations thereof.

12. Ministerial Decision D6/B/17682 (FEK B'1407 – 22/10/2001) for the implementation of the EU Directive 2000/55/EC, concerning energy efficiency requirements for ballasts for fluorescent lighting.

Please state the **fiscal instruments** available in your country for energy efficient appliances

Fiscal instruments for promoting rational use of energy / saving energy.

1. The ministry of Development implemented a program concerning the replacement of all incandescence lamps or fluorescent lamps of energy class lower to B in buildings of the public sector, with CFL light bulbs of energy class A. The program is about to be completed.

2. A Ministerial Decision by the Ministry of Development on the 28th of July 2006, concerning among other incentives and escalation of electricity prices, the lower electricity prices for the consumers in the residential sector, who will manage to reduce their electricity consumption.

Consumption 1.8.2005-31.7.2006	**Consumption 1.8.2006-31.7.2007**	**Return**
1-6000 kWh	Reduction by at least **4%**	**5%**
6001-12000 kWh	Reduction by at least **6%**	

3. A Ministerial Decision by the Ministry of Development on the 3rd of May 2007, giving monetary incentives to big commercial consumers to reduce their electricity consumption during July of 2007.

4. A Joint Ministerial Decision (FEK B'651) for saving energy in the Public sector through the regular maintenance of air-condition units in public buildings.
Supportive **instruments** (awareness campaigns , training schemes available)
The Ministry of Development together with the main electricity supplier DEH SA started a **campaign** in 2007 for introducing to consumers, measures for saving energy in the house, in the office and in transportation. In the leaflets, that were handed out mainly in big city centers (DEH SA included in the envelope of the energy bill the information leaflet), among other measures the importance of choosing energy efficient appliances was outlined. A campaign for supporting the replacement of incandescent lamps with CFL light bulbs was carried out by Phillips SA and the local TV network SKAI. In this campaign 50.000 CFL light bulbs were handed out in big city centers all over Hellas. The response from the citizens was very satisfactory.
Problems identified (awareness, technology available, target groups)
No tax incentive for choosing energy efficient appliances
Initial recommendations for successful market tranformation, what next?
Tax incentives Reduced VAT rate for energy efficient appliances.
Highlights (most successful instrument in the country so far)

12.2 Country Highlights

1. Name of instrument	Campaign with information leaflets
2. Country	Hellas
3. Type	☒ Awareness- raising □ Regulatory

	□Fiscal
4. Goal *Please state the goal of the instrument in 1 sentence.*	To introduce to consumers, measures for saving energy in the house, in the office and in transportation
5. Target Group(s) (please tick box)	☒ consumers / citizens (= individual) ☒households (= the group of people forming a household) □ retailers □ youngsters □ low income groups □ others
6. Size of target group *What is the size of the target group. Please give a number.*	The size of the target group is the residents in big cities (approximately 7 million people)
7. Topic (please tick box)	☒ energy efficient appliances ☒ lighting ☒ heating/cooling ☒ other (transportation)
8. Description *max. 5 sentences.*	The leaflet presented the importance of saving energy by changing our behaviour in the way we use domestic appliances, not only for environmental reasons but for economical reasons as well. The leaflet gives an example of the economic benefit (in euros/year) that will arise if simple steps for saving energy are followed. Among other measures/ suggestions, the importance of choosing energy efficient appliances is outlined.
9. Start date -End date (dd-mm-yy)	2007
10. Budget (total, in €)	Not known
11. Organisation *What type of organisation was responsible?(please tick box)*	☒ national government □ national, regional, local energy agency □ regional government □ local government ☒ utilities □ retailers

	□ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
12. Financier of the instrument *What type of organisation financed the instrument?*	☒ national government □ national, regional, local energy agency □ regional government □ local government ☒ utilities □retailers □ consumer associations □ professional associations (e.g. lighting, housing, etc.) □ NGO □ other (please specify)
13. Which type of appliance does the instrument want to influence?	All domestic appliances and office equipment.
14. *Which type of behavioural factors does the instrument want to influence?* (please tick box)	☒ motivational factors (awareness, knowledge, social norms, attitude, intention) □ facilitating factors (external financial resources, external technical resources, external organisational resources) □ reinforcing factors (feedback of peers / experts / authorities)
15. How was the instrument communicated?(please tick box, more are possible)	□ TV □ Radio □ Press ☒ other (leaflets were handed out and were send together with the energy bills to consumers)
16. Goal achieved?	□ yes □ no ☒ partly
17. Other comments or additional information about the instrument	