

Supported by



Energy saving concepts for the European ceramic industry

CERAMIN

Contract number
EIE/06/222/SI2.444565

Judgement of existing labels supporting low energy consumption

in relation to the new  - Label

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.



Introduction

The objective of this report is to prepare or to identify the principles and rules for a label and trophy awarding of intelligent energy use (low energy consumption) in the European ceramic industry. Therefore general possibilities of influence on energy use are discussed briefly and existing labels or trophies are analysed further on.

CERAMIN, the name of the project comes from ceramics and minimum. The name of the proposed label is: EEE – which shall be awarding Extraordinary Energy Efficient ceramic products and production.



During the last years a lot of action has been carried out in the EU to decrease the consumption of primary energy use. This has been done

- To become more independent from the countries who deliver most of the primary energy carriers, used in Europe and
- To stop or to slow down the climate change in the world by decreasing the amount of CO₂-emissions, which result from the use of fossil energy sources.

Possible ways to reach these objectives vary:

1. Benchmarks or regulations created and forced by national or EU-authorities (e.g. CO₂-limits for branches or countries)

Advantage:

- The objectives will be reached for sure

Disadvantage:

- Distortion of competition with regions or countries who are not under the power of the regulations



- All companies will be treated mostly the same, with no consideration about specialities of their situation.
 - Takes money to force the regulation
 - Strong and/or modern companies do not do as much as they could and weaker ones might be overtaxed.
2. Voluntary self obligation of whole industry branches, worked out by associations or representatives (e.g. obligation of producers of passenger vehicles to decrease the average CO₂-emissions of cars to 140 g/km until 2008)

Advantage:

- The respective branch will not take any damage by this obligation. The power, the annual turnover or the jobs are not endangered

Disadvantage:

- The public can not be sure that the obligation represents the best possible figures for the whole branch
 - Some or more companies will not join the voluntary obligation and will not change anything for this reason
3. EU-Authorities or representatives of the EU or private associations create labels for low energy consumption. (similar to ISO 9001 regulations)

Advantage:

- Participation is optional
- The companies that apply for the label or the ones that are awarded, are well controlled. It is approved for these companies, that the objective numbers are reached.
- Getting or keeping the label could be part of the marketing strategy of the companies.

Disadvantage:

- Only a limited number of companies will take part
- The “black sheep” can waste energy as before



- Success of such a label depends on the choice of not to restrictive criteria.
4. Organizing championships for low energy consumption together with labels and/or trophies.

Advantage:

- Participation is optional
- The companies that apply for the label/trophy or are awarded are well controlled. For these companies it is approved that the objective numbers are reached
- Getting or keeping the label/trophy could be part of marketing strategy of the companies
- One can be sure that the companies among the top ten or top twenty of the intelligent energy use competition do their best to become the champion
- No criteria necessary
- Information about the smartest energy use can be collected.

Disadvantage:

- Only a limited number of companies will take part
- The “black sheep” can waste energy as before
- Organising a championship takes more effort than simple label awarding

In the following some labels/trophies used in Europe that reward intelligent energy use are listed and analysed. Main view will be on the principles of the labels/trophies regarding their advantages and disadvantages, if used in the European ceramics industry.



Different Labels

ECO-Label



Established in 1992, the EU Eco-label "Flower" is a **unique certification scheme aimed** to help European consumers distinguish **greener, more environmentally friendly**, products and services (not including food and medicine).

According to <http://www.eco-label.com/default.htm> : "There are currently twenty-three different product groups, and already more than 250 licences have been awarded for several hundred products."

Eco-Label: Given by EU-Authorities, governmental, voluntary obligation, with fixed regulation for each product or process or branch	
Advantages	Disadvantages
<ul style="list-style-type: none"> • The Label is organized and accepted on a EU-basis • Same regulations for all companies that want to apply --> no distortion of competition • Clear published criteria for products and processes. • Energy consumption limitation for hard floor coverings (=floor tiles) are ambitious compared to BREF Ceramics Industry. • Long term effects if the regulations are updated regularly 	<ul style="list-style-type: none"> • From the CERAMIN-Partners only two report the Eco-label --> poor public dissemination • Same regulations for all companies that want to apply --> only a few companies are forced to do the best that they can • The regulations (paper and hard floor coverings were checked) are difficult to understand for end users

**Conclusion**

CERAMIN should take the advantages of ECO label, but make sure that national specialities are taken into consideration and that the public dissemination is better. Last but not least the energy consumption level defined for floor tiles have to be considered.

Energy Star

According to <http://www.energystar.gov> : “ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.”



In 1992 the US Environmental Protection Agency (EPA) introduced ENERGY STAR as a voluntary labelling program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions. Computers and monitors were the first labelled products. Through 1995, EPA expanded the label to additional office equipment products and residential heating and cooling equipment. In 1996, EPA partnered with the US Department of Energy for particular product categories. The ENERGY STAR label is now on major appliances, office equipment, lighting, home electronics, and more. EPA has also extended the label to cover new homes and commercial and industrial buildings.

Through its partnerships with more than 9,000 private and public sector organizations, ENERGY STAR delivers the technical information and tools that organizations and consumers need to choose energy-efficient solutions and best management practices. ENERGY STAR has successfully delivered energy and cost savings across the country, saving businesses, organizations, and consumers about \$14 billion in 2006 alone. Over the past decade, ENERGY STAR has been a driving force behind the more widespread use of such technological innovations as LED traffic lights, efficient fluorescent lighting, power management systems for office equipment, and low standby energy use.”

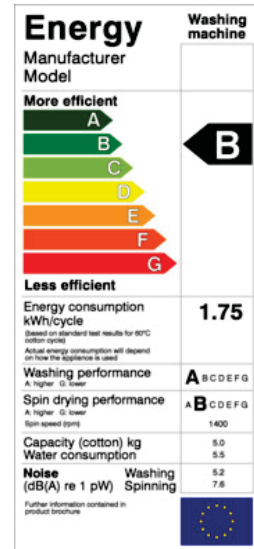


<p>Energy-Star Label: Given by US-governmental authorities, voluntary obligation, with fixed regulations for each product</p>	
<p>Advantages</p> <ul style="list-style-type: none"> • Well known all over the world • End-user and product orientated • Same regulations for all companies that want to apply --> no distortion of competition • Clear published criteria for products and processes. • Available for a broad range of products, that is steadily enlarged 	<p>Disadvantages</p> <ul style="list-style-type: none"> • Concerning temperature insulation in buildings quite weak regulations, all other regulations can't be judged • No regulations for production processes
<p>Conclusion</p> <p>Successful Label concerning its spread all over the world. Poor transparency for end-users. Can't give an example for CERAMIN label, because of its dimensions the governmental organization and product orientation</p>	



European Union energy label

“According to several different EU Directives (92/75/CEE, 94/2/CE, 95/12/CE, 96/89/CE, 2003/66/CE, et alia) most white goods, light bulb packaging and cars must have an EU Energy Label clearly displayed when offered for sale or rent.” The energy efficiency of the appliance is rated in terms of a set of energy efficiency classes from A to G on the label, A being the most energy efficient, G the least efficient. The labels also give other useful information to the customer as they choose between various models. The information should also be given in catalogues and included by internet retailers on their websites.” From Wikipedia, the free encyclopedia. Between 1995 and 2000 0,75 Mill tons CO₂ were saved by new techniques used for whiteware.



European Union energy label: Given by EU-Authorities, governmental, urgent obligation for fixed types of products (e.g. washing machines, refrigerators), with fixed testing principles for each product group

Advantages	Disadvantages
<ul style="list-style-type: none"> The Label is organized and accepted on a EU-basis Well known by end users, high transparency due to classification into groups of energy-consumption Same regulations for all products that have been applied for --> no distortion of competition Clear published criteria for products, makes it easy for producers to define objectives of further product 	<ul style="list-style-type: none"> Regular need for updating Label-regulations to cover the technical progress Due to the status of a fixed European decree, the Label is presumable not as flexible as non governmental labels or labels on voluntary obligation might be



<p>development</p> <ul style="list-style-type: none">• Producers are able to justify higher prices if their product has a low energy consumption• The testing costs increase costs of all products	
<p>Conclusion</p> <p>Very effective tool to increase the awareness of energy consumption. Organized on European decree basis – for that reason not comparable with CERAMIN. Expensive to define the parameters for the different classes to compare products.</p>	

The European Energy Trophy

According to <http://www.energytrophy.org/en-home>:



“The European Energy Trophy is an EU-wide competition for companies and public administrations for saving energy in office buildings. The Energy Trophy was organised and implemented by a consortium of 6 partners and started officially on 01.01.2004.

The aim was to award the Energy Trophy to participants who saved the most energy in one office building in one year using cost-free measures only (i.e. behavioural changes such as turning off lights, turning down the heating etc. no investments in new equipment or energy saving light bulbs etc.). With 38 participating companies and public administrations, the project was a complete success: 22 of the 38 participants were able to reduce their energy consumption and achieved energy savings of up to 30 %.The main founders of the project were the European Commission in the framework of the SAVE II programme and the Ministry of Economic Affairs and Energy of the State of North Rhine-Westphalia”.



<p>Energy-Trophy: Organised by European NGO's, Voluntary obligation, championship between the participants about saving the highest amount of energy in office buildings, only companies are addressed</p>	
<p>Advantages</p> <ul style="list-style-type: none"> • The Label is organized and accepted on a EU-basis • Companies with the highest energy consumption have the best chance to win the championship, if they are engaged because the highest amount of energy saving is awarded --> value of energy saving increases • No negotiations about limits of e.g. CO₂-waste rights necessary. • Easy to handle, because of simple rules • Possibility to have national and international winners of the championships at the same time 	<p>Disadvantages</p> <ul style="list-style-type: none"> • Short term effects, after winning the championship there is no guarantee that the low energy consumption remains • Sponsors for the trophy are necessary • It is only proofed that the energy consumption (or CO₂-emission) are lowered, it is not proofed that they are lowered the most possible amount • The winning company has cost saving effects and the honour of winning, but it has no marketing effects for their products.
<p>Conclusion</p> <p>The principle of "Energy Trophy" is quite near to the objectives of CERAMIN, the missing label weakens the tool concerning his long-term effects and concerning the marketing benefits for the participating companies.</p>	



ECO-Test by FIA Foundation¹

According to <http://www.ecotest.eu/default.html>: “Whether it's pollutant or greenhouse gas emissions: EcoTest shows you the environmental strengths and weaknesses of passenger cars. This independent and fair programme puts vehicles with petrol, diesel, natural gas or hybrid drive-trains to the test.”



“EcoTest is meant to comprehensively inform you - the environmentally aware motorist and car buyer - and provide you with neutral data about the environmental soundness of vehicles across all vehicle classes. In order to obtain such data, EcoTest uses the New European Driving Cycle (NEDC) as well as its own measurement procedures to cover a wide range of aspects not included in the NEDC.”

¹ The FIA Foundation has been established in the United Kingdom as a registered charity with a donation of \$300 million made by the Fédération Internationale de l'Automobile (FIA), the non-profit federation of motoring organisations and the governing body of world motor sport. The FIA Foundation manages and supports an international programme of activities promoting road safety, environmental protection and sustainable mobility, as well as funding specialist motor sport safety research. The FIA Foundation is an NGO in Roster Consultative Status with the Economic & Social Council of the United Nations and a regular participant in the Working Party on Traffic Safety and the World Forum on Harmonisation of Vehicle Standards at the UN Economic Commission for Europe. The Foundation also works with international agencies including the World Health Organisation (WHO) and the UN Environment Programme on road safety and environmental issues.



<p>ECO-Test: Organised by European NGO's, ECO-Test choose the products (cars) they want to test.</p>	
<p>Advantages</p> <ul style="list-style-type: none"> • The Label is organized and accepted on a EU-basis • Same regulations for all cars that apply --> no distortion of competition • Clear published criteria for products • Beside the figures on energy consumption, a 5 star system is established that gives a fast view on the environmental impact of each car • Sometimes lists with the best cars of each class are published • Independent testing 	<p>Disadvantages</p> <ul style="list-style-type: none"> • Expensive testing • Best companies are the ones with the best results for e.g. CO₂-emissions, companies with poorer techniques are not really forced to improve their products.
<p>Conclusion</p> <p>A system with high potential to promote the products with best energy-consumption figures. Expensive to realize. Weaker companies are stressed and might be excluded from further competition, with poor impact on national or regional economic situation (loss of jobs).</p>	



KlimaHaus/CasaClima

According to <http://www.klimahauseragentur.it/en/casaclima/klimahausercasaclima.html>: “KlimaHaus/CasaClima” is a term developed to describe energy-saving construction and dynamic living. In a time when oil and gas reserves are being depleted, economic factors are increasingly important in building and renovation.

KlimaHaus has found a way to fuse well-being and savings. The category of energy saving, rather than architectural style, determines whether a building is classified as a KlimaHaus. A practical calculation system is used to determine a building’s energy requirement, making the KlimaHaus programme simple and user-friendly.



The energy index and KlimaHaus placard are the fundamental pillars of the organisation, and the positive image associated with KlimaHaus has inspired builders’ imitation. Significantly, KlimaHaus not only focuses on new construction, but also on the lasting renovation. Furthermore the Label itself



defines the degree it is awarded for: All buildings certified with KlimaHaus categories Gold, A or B may display the corresponding KlimaHaus placard directly at the entrance, testifying to its low energy class. This increases the image, not to mention the value, of the property. The placard is provided by an independent authority, namely the KlimaHaus Agency!”



<p>KlimaHaus/CasaClima: Organised by a regional governmental organisation, labelling the energy consumption of houses in 3 Levels, voluntary obligation</p>	
<p>Advantages</p> <ul style="list-style-type: none"> • The Label is organized and accepted on governmental regional Basis • Label awarding by proofed specialists • Clients can be sure to get an energy efficient building • Offer is been completed with championships to architects and technicians to erect the building with lowest energy consumption and with education offers. • High level of public dissemination e.g. testing and betting of how long a block of ice will exist in a well temperature insulated building 	<p>Disadvantages</p> <ul style="list-style-type: none"> • The label has to adapt from time to time to cover the momentary available techniques. • The organisers of the championships or bets need prizes for the winning company or person
<p>Conclusion</p> <p>Perfect mixture of labelling, championship and dissemination to promote low energy consumption of complex and complicated products. CERAMIN can learn a lot from this label.</p>	



Summary

Successful labels need a lot of effort to disseminate them. The most successful label is presumably the European Union energy label and the Energy Star. The European Union energy label is successful because it is obligatory in all EU-countries for whiteware – and has a good level of valued information for end users about energy consumption. Due to its obligatory basis also products with poor energy consumption have to be labelled.

The Energy Star is well known all over the world from the use of computer equipment. The criteria are not really transparent, therefore the end user can only trust the EPA or not. The European-Eco-label is similar to the Energy Star, concerning its criteria, but it is not as well known as the Energy Star. All three labels cannot give an example for CERAMIN because of its governmental basis. The transparency of the European Union energy label is exemplary.

The ECO-Test Label for cars has a presumably expensive testing system with an easy labelling from one to five stars. The effort to implement such a system is too high to use a similar one for CERAMIN.

Energy Trophy and Klimahaus are two labels that shall give example for the CERAMIN label. The character of a championship of both labels can be easily used in CERAMIN in a national and an EU-wide championship.

The idea of CERAMIN label awarding to label only the top-third or the top-quarter of products of enterprises could not be found in use by another label: This procedure should be as transparent as the European Union energy label is. One advantage of the Energy Trophy should be kept in mind in the CERAMIN project. It is to create championships in 2 disciplines:

1. absolute lowest specific energy consumption per product or branch
2. greatest decrease of specific energy consumption per product or branch