

# EUROPEAN HEAT PUMP NEWS

issued by the European Heat Pump Association



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## EHPA NEWS

This edition of our newsletter considers current EU labelling initiatives which involve heating systems like heat pumps. The focus is moving away from white goods (like refrigerators and washing machines) to systems which are used for space heating and cooling and supplying hot water. This focus is timely following the first ad hoc working group meeting on eco-labelling of renewable energy systems and a presentation to the EHPA executive meeting in Bruxelles.

### Product labels

A product label provides information on the characteristics of a product to

- \* consumers wishing to buy a product
- \* retail staff willing to sell the product
- \* installers who select and install specific systems
- \* architects and building service engineers who design heating systems

As the information on a label is usually brief and not self explanatory, additional information is generally available via brochures, installation manuals or in the case of products that are EU labelled, the information fiche.

One feature of globalization is that there is now a worldwide market for products. Products may be designed in one country, manufactured in a second country and sold all around the world. Especially in European Union there is an agreed European market bringing standardization to the products and product labelling.

Of the various label types, the EU energy label provides comparative information whilst the EU eco-label is a threshold label which requires the product to meet specific criteria or standards. Both can be classified as environmental labels because they provide information on the use of resources.

### Types of labels

Labels help to

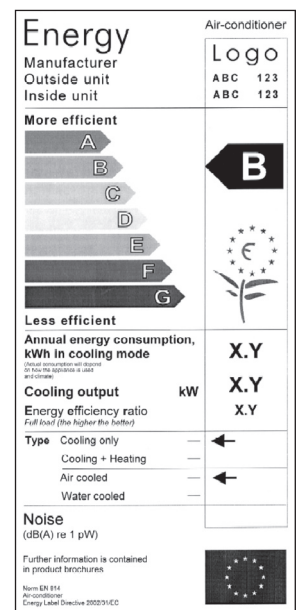
- choose a product closest to our needs
- identify products that have low environmental impact

- provide advice on usage and how to reduce environmental impact

There are many “green” labels that can be found on product. The principal ones are mentioned below:

### EU energy label

- European label which is mandatory
- Must be displayed on all labelled products at point of sale
- Provides comparative information
- indicates the energy efficiency class
- ‘A’ being the most efficient and ‘G’ being the least efficient class
- provide useful information such as volume, capacity
- performance criteria to define how well they function – also on a scale of A to G with A having the highest performance and G the lowest
- the most common label throughout Europe



The products carrying these labels include –

- fridges, freezers
- washing machines, tumble driers, washer driers, dishwashers
- ovens
- light bulbs
- room air conditioners (as illustrated)

### EU energy labelling of water heaters

At our executive meeting on September 16, Matthew Kestner, DG TREN described the status of the draft proposals for labelling water heaters. After space heating, water heating is the second largest user of energy in the home with the average EU family using up to 100 litres/day involving an annual energy consumption of ca 3000 kWh. There will be one label covering electric water heaters and another for gas/oil with each label covering all the available technologies

For electric water heaters, the following will be classified in increasing order of efficiency in terms of energy input to heat output –

- storage heaters
- night storage heaters
- solar/electric hybrid systems
- heat pump systems
- solar thermal

Under the current proposals only solar thermal systems and the more efficient heat pumps will attain the most efficient grading of A. Heat pumps are so efficient because they concentrate low grade heat present in the air, ground or water with the electricity only being used to run the compressor and the electronics.

### **EU Ecolabel**

- a voluntary label across the European Union, Norway, Liechtenstein and Iceland
- for goods and services, which have a lower environmental impact than similar products
- based on life cycle of the products, covers the all impacts of the product to the environment, from the extraction of raw materials to product use and disposal



### **Renewable heating systems**

The European ecolabelling board decided in 2004 to ecolabel renewable heating systems and awarded a contract to SIS Miljomarking to undertake a study on how such systems should be labeled. The first meeting of the ad hoc working group was held September 14 in Bruxelles hosted by Chris Maxwell, DG ENV.

The studies have considered three types of heating systems namely heat pumps, district heating systems and wood fired boilers of which the focus has been on heat pump system as the lead system. A principal consideration is whether to label the heat source or the heating system (which includes the source). Following consideration of the consultants' reports, the meeting agreed that the system should be labelled to ensure that the full benefits of using renewable heating sources could be attained in a dwelling.

The magnitude of the primary energy factor was also considered – that is the efficiency with which a fuel is converted to electricity, which varies in each country and region depending upon the mix of plant used

to generate the electricity. The simplest solution is to use the European average value in order for heat pumps systems to have a common label across Europe.

### **Qualified installers**

A further proposed criterion, which is likely to be common for all renewable heating systems, is that the system needs to be designed and installed by a qualified installer. This will be possible for heat pumps because the EHPA will host the European Board for certifying courses for installers; these requirements are currently being assessed by a EU funded SAVE project of which the EHPA and some of its members are partners.

### **Heat pump criteria**

For heat pumps, like refrigerators, there will be some restriction on the type of refrigerant used. The proposal put forward by the consultants is that HFCs should be restricted to a global warming potential no greater than 2000.

For heat pumps which are reversible and can cool as well as heat there should also be a criterion to assess the efficiency of the cooling output.

### **Next steps**

These recommendations will be reported to the EU eco-labelling board meeting on 28/29 September. Further work will now be undertaken on developing the criteria with a view to agreeing the criteria by June 2006. The process is open and transparent and interested persons are asked to contact Martin Forsen of SVEP ([martin.forsen@svepinfo.se](mailto:martin.forsen@svepinfo.se)), who chairs our labelling committee.

For further information go to:

[http://europa.eu.int/comm/environment/ecolabel/product/pg\\_heatpumps\\_en.htm](http://europa.eu.int/comm/environment/ecolabel/product/pg_heatpumps_en.htm)

### **European heat pump sales average 20% growth**

Sales of have averaged a compound growth of 20% per annum since 1992. Countries with large sales in 1992 have continued to expand such as Austria, Switzerland, Germany and France whilst Finland and Czechia have succeeded in transforming their markets for heat pumps. Other countries have had negligible growth because the conditions for growing the market are not present. Sales are for systems which provide space heating, some of which can also cool and include those which recover heat from exhaust air; systems only providing tap water are not included

## Sales Figures Space Heating

	2003	2004 units	1992
<b>Austria</b>	3.780	5.129	800
<b>Bulgaria</b>	15	25	
<b>Czech Rep.</b>	1.200	2.400	20
<b>Estonia</b>	510	750	
<b>Finland</b>	8.540	12.648	100
<b>France</b>	13.700	17.300	4000
<b>Germany</b>	15.838	20.636	2000
<b>Ireland</b>	1.300	1.800	
<b>Netherlands</b>	1.557	1.800	
<b>Norway</b>	55.081	35.390	1000
<b>Slovenia</b>	25	35	
<b>Sweden</b>	68.100	100.215	15000
<b>Switzerland</b>	8.695	9.796	2700
<b>Total</b>	<b>178.341</b>	<b>207.924</b>	<b>24100</b>

## News from Exco meeting

Robur S.p.A has become our first Italian partner and is a manufacturer of absorption heat pumps

The EHPA will join the ThERRA project being coordinated by Senter/Novem of the Netherlands. Its aim is to develop an accepted methodology for calculating and monitoring the total amount of renewable heating produced in the EU as current statistics only report electricity generated from renewable sources. For heat pumps, the contribution to renewable cooling should also be included

The vision statement of the strategy committee was approved

## EHPA website

The redesign of the website is under way at FIZ Karlsruhe with the aim of developing two separate but closely linked sites for the Association and European heat pumps news.

The site provides comprehensive information on items like news, markets, publications, best practice, EU projects and links. It also hosts two project websites EU-CERT and SHERHPA.

## SHERPHA project

This project is combining the industrial, scientific and training expertise from 13 European countries to develop and test the next generation of heat pump systems using natural refrigerants

The work part financed by the EU's 6th Framework program will hold its third project meeting in Stockholm hosted by the Bjorn Palm of the Royal Institute for Technology.

Working with 19 SMEs active in heat pump technology are 10 research and technical institutes who have the facilities and capabilities of designing and testing heat pump systems. The work includes new technologies aimed at heat recovery such as heat exchangers, expansion valves, compressors and flow rates which are optimal for refrigerants like ammonia, carbon dioxide and hydrocarbons

## EU-CERT

EU-CERT-HP (EU Certified Heat Pump Installer) is a project part funded by the European Commission and involving partners from Austria, Germany, Italy, Ireland, UK, Sweden, France, Czech Republic and Slovenia. The aims of the project are to have a common training methodology for heat pump installers, to ensure that quality is maintained and that the qualification is recognised in all EU countries.

The partners met in Harnosand – Sweden during June and an update of the project is as follows –

- A new partner has joined – ARE Liguria from Italy. They are a regional energy agency with particular interests in certification, educational systems, energy saving policies and renewable energies. They are represented by Chiara Tavella & Adriano Pessina
- The training manual was reviewed at the meeting and progress has been good. The proposed timetable is to have the final draft of the English language version completed by the middle of October. The translation of the manual into the partners national language is scheduled to be completed by the end of 2005
- Pilot courses are due to be held early in 2006, running in parallel to this activity is the need to 'train the trainer'. Germany, France, U K, Sweden, Ireland and Slovenia have identified the training institutes that will run these pilot courses. To support the trainers, a specification, trainer's handbook and other documentation is being prepared.
- The Certification Scheme was discussed with the proposal being that it should be modelled on EN 17024. Arsenal research are familiar with this model. The partners are charged with evaluating this scheme and checking the market requirements in their own countries. At the November meeting the scheme will be discussed further.
- Further discussions involved the basis of the theoretical examinations, the practical tests and the

potential of e-learning. The partners agreed on the basis of both the theoretical and the practical examinations.

- FIZ have updated the EU-CERT web-site and have installed AVISMA for content management of the restricted partner area. The website has a new address and new homepage. The address is as follows – <http://eucert.fiz-karlsruhe.de>

*Robert Garwood, BRE*

## Collaborative IEA Research Project for the EU Energy Performance Building Directive

Energy labels and the EU Directive on the Energy Performance of Building (EPBD) are effective measures to reduce primary energy consumption and thereby greenhouse gases. In addition, consumers obtain a rational purchase decision for innovative building technology equipment.

However, product testing and efficiency calculation methods have to be based on standardized methods and the consensus of participating countries.

Annex 28 has been launched as co-operative project in the Heat Pump Programme (HPP) of the International Energy Agency (IEA) with nine participating countries to develop uniform test and calculation methods. Annex 28 started in 2003 and will be completed by the end of 2005. The Institute of Energy (IFE) at the University of Applied Sciences Basel carries out the project management in charge of the Swiss Federal Office of Energy (SFOE).

Results of the IEA HPP Annex 28 were presented recently on a workshop in the framework of the 8th International Heat Pump Conference in Las Vegas in May 2005. Participants agreed on combined system test methods for space and domestic hot water heating. The calculation method for the seasonal performance factor (SPF) is based on the bin methodology which is built upon the results from the standard testing.

The results are meant as recommendations for international standardisation committees. The approach for the calculation has already been implemented on the European level in the new standard prEN14335 in the framework of the EPBD. The corresponding test procedure will be treated in the heat pump product working group of CEN, which will start working on this item soon.

Continuously updated information on the IEA HPP Annex 28 project can be found on the website at the URL <http://www.annex28.net>.

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## Forthcoming events

- European conference and cooperation exchange on sustainable energy systems – Vienna, October 5 to 8 – further information at [events@arsenal.ac.at](mailto:events@arsenal.ac.at)
- Ad hoc working group on eco labelling heat pump systems, Bruxelles, December 9
- EHPA executive meeting, December 14/15, Bruxelles

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Closing date for contributions to next issue: **November 30 2005** Theme: **Buildings**