
EUROPEAN HEAT PUMP NEWS

issued by the European Heat Pump Association



Issue 6/1 April 2005

EHPA NEWS

This edition of our newsletter covers the 6th annual meeting of the Association held in Bruxelles on April 22, describes a project to develop the next generation of heat pump systems and the 10th anniversary of the German Heat Pump Association.

Carbon exposition, Koln 11 –13 May

The EHPA will be having a stand at this exposition for the first time and Karl Ochsner, Chair of our Strategy group, will give a key address on May 13 at midday with the title – *Environmental energy with heat pumps – possible contribution to carbon dioxide reduction and meeting the Kyoto targets for greenhouse gas reductions with green heat*

Good week for energy efficiency in Bruxelles

The Ecodesign directive was approved which will provide a framework for imposing minimum energy efficiency standards for products. Voluntary agreements will still be possible such as those between CECED and the Commission for white goods such as refrigerators and washing machines but if this is not possible then the Commission will be able to propose such standards.

The European parliament has voted for mandatory targets for the draft energy services directive which will require member states to increase energy efficiency savings by an additional 1 % per year.

How heat pumps can help meet Kyoto targets for greenhouse gas emissions

Heat pump systems are very efficient because they utilise ambient energy which is present in the air, water or ground and concentrate this energy into a useful form to provide heating. Likewise cooling can be achieved by removing heat and dispersing this into the surroundings.

The potential for energy, electricity and carbon dioxide savings is very high for the 20 million dwellings in the EU which are currently electrically heated either by resistance or convector heaters or electric boilers. The 1998 study suggested a potential savings of 100 TWh electricity (or 50 million tonnes of carbon dioxide) by 2020 provided that the insulation level of the dwelling was also brought up to 1998 standards.

EHPA

The European Heat Pump Association was formed in 2000 to promote the technology and diffuse knowledge about the potential for heat pump systems which can provide heating (or cooling) particularly for buildings. It undertakes a range of activities at European level rather than national or local level and these are fully described on our web site.

It provides impartial advice and undertakes strategic studies to promote the concept of energy efficiency in Europe and helps with implementing directives such as the Energy Performance in Buildings.

The EHPA is registered as a European Economic Interest Group and membership is open to all legally registered organisations within the EU. Its diverse membership includes utilities, national heat pump associations, consultancies and government agencies responsible for energy and the environment. It welcomes further members who are willing to help assist with expanding our activities and overcoming barriers to the uptake of this technology.

6th Annual General Meeting of the EHPA

The meeting was held at KOWI's offices in Bruxelles on April 22 and the various reports were approved including the audited accounts for 2004.

We welcomed three speakers who introduced a discussion on the uptake of renewable energy heating in buildings –

Kirsten Sahlen, *SIS miljo*;
Sabine Froning, *Euroheat and Power* and
Johann Zirngibl, *CSTB, France*

The introduction of such heating systems will be accelerated once the requirements of the new directive on Energy Performance in Building will come into force on January 4, 2006 whilst ecolabelling will help specifiers and sellers to identify the most environmentally friendly models and systems.

Chair report for 2004

The Association has had an active year with an increasing range of activities. This is both in response to the interests of our members and also to their willingness to provide their time to undertake such activities. In my opinion it is better to have a small number of active members rather than a large number of passive members particularly in the start up years.

The year has culminated with the coming into force of the Kyoto Convention on greenhouse gas reductions. This is now a binding treaty under international environmental law and the signatories are committed to achieve their reduction targets. A prime task for the EHPA is therefore to help Europe meet its targets by enhancing knowledge and diffusing information about renewable heating and cooling that heat pump systems can provide.

At the same time the price of oil continues to rise and is currently above \$50/barrel of oil and dragging the gas price along with it. If this trend continues then oil will no longer be economic or sensible to use as an energy source for heating and switching to gas would only be a short term solution for may be one more generation. Heat pump systems therefore will play an ever increasing role in the heating (and cooling) market.

Committees Education and training and strategy have been active and I would particularly like to thank Roar Rose for chairing the strategy committee for more than 4 years. The Association now needs to look forward at least 5 and maybe 10 years and decide what needs to be done and how we can work with other stakeholders to achieve our aims – Karl Ochnser and Brigitte Bach are putting together such a strategy.

Thanks In the world in which we live, time is a precious commodity and to all those who give their time willingly to the EHPA, I render my grateful thanks.

Rayner Mayer, Chair

EHPA activities

Information Our web site is a major information source and serves also as a gateway to national information sources. The number of hits indicates an increasing use of this site.

Training The EU-CERT project is concerned about specifying the needs for training installers of heat pump systems and how to certify the various European courses currently being offered
The EARTH project is involved with training of installers of renewable energy systems of which ground source heat pumps is one such system.

Labelling Discussions with DG Energy and DG Environment have resulted in a tender being awarded to SIS Miljo to develop criteria for awarding the European ecolabel for renewable heating systems. Heat pumps will be the first source to be considered followed by district heating systems and wood (pellet) fired boilers.

The DACH label is a trans-national label with criteria which have been developed by the Switzerland, Austria and Germany and is now widely used by manufacturers in those countries. The EHPA and DACH organisation have agreed that these labelling activities will in future be undertaken within the activities of the EHPA from some date still to be decided. How the DACH label will evolve will depend upon which criteria are proposed for the Eco-label.

SHERPHA project – the first steps

The global aim of the SHERPHA project is to develop the next generation of heat pump systems using natural refrigerants such as ammonia, carbon dioxide and propane. These refrigerants have zero ozone depletion and low global warming potential.

The project is an unusual partnership in that it is a collaboration between 19 small manufacturing enterprises and 10 research and technical institutions with two International Organisations as coordinators (GRETH and EHPA). Some 13 countries are represented with a good representation from southern Europe and CEE countries in addition to one accession country (Bulgaria) and 1 associate country (Ukraine). The total budget is euros 3.1 million and is being part funded by the EU's Framework 6 program.

The technical challenges are quite clear in that natural refrigerants have different thermodynamic and chemical properties to existing refrigerants. This requires redesigning the principal components

like heat exchangers and compressors to optimise the heat transfer. At the same time, appropriate control strategies will be developed considering both the application and the types of components used. Other challenges involve material compatibility and requirements imposed by EU regulations to minimise the amount of refrigerant in the system.

The initial performance of components will be checked in various laboratory rigs such as the heat transfer loop at CEA in Grenoble. This will help to determine parameters like mass flow rates, durability, leakage and control parameters and will also build confidence in the ability of the various components to be successfully integrated. As a result of various preliminary studies it is likely that as many as 8 prototype systems will be evaluated with sizes ranging from 3 to 100 kW.

The project will also cooperate with various compressor manufacturers who are not part of the project and who are developing prototype components which can be evaluated as part of the rig and field testing. The outputs of the project will be widely disseminated in order to build confidence in the use of natural refrigerants and reports will be released periodically including background studies. Some of these reports will have restricted circulation and only be available to EHPA and GRETH members.

German heat pump association celebrates its tenth anniversary

The Bundesverband WärmePumpe (BWP) e. V. [BWP – *Federal Association for Heat Pumps*] held a specialist congress "From the periphery into centre" in Dresden on 24th September 2004. The main topics at the congress were the technical refinement of heat pumps, developments on the market, the environmental situation and political acceptance since 1993. The event was organised in recognition of the successful work put in by the BWP and its members over the last ten years for greater deployment of heat pump technology in Germany. Despite falling figures in the heating market in Germany, the sales of heat pumps have been constantly positive for the last ten years.

Sales of heats pumps have increased ten-fold in the last ten years

The BWP first started to keep its own statistics on the number of heat pumps sold each year in 1994, thus one year after it was officially founded. At that

time 949 heat pumps for heating systems were sold in Germany. The number of heat pumps for heating systems sold in 2003 was reported at 9,745. If the heat pumps deployed to supply hot water are added to this figure, then in fact 13,521 heat pumps were sold in all.

The market research has been run jointly with the BDH, Bundesindustrieverband Haus-, Energie und Umwelttechnik e. V. [BDH – *Federal Industrial Association for Building Systems, Energy and Environmental Engineering*] in Cologne since 2004, and this has enabled yet more detail to be added to the sales statistics for heat pumps.

The BWP's information brochures for building owners, skilled tradesmen, architects and planners are well received among each of the target groups; many of the brochures are now being revised. The most comprehensive compendium on heat pump engineering, the Heat Pump Manual with over 250 pages, has now been available to skilled tradesmen, architects, planners and energy consultants since 2003 in a fully revised version with a new design. The BWP's Internet site is also used extensively by building owners, tradesmen and the press.

Departments as solid pillars for the successful work of the association

Five departments were established at the beginning of 2003 in order to be able to react faster and more flexibly to the ever growing demands faced by the association: These cover Marketing, Public Relations and Advertising, International, Domestic, Politics and Engineering and Science. The work put in by these departments ensures that the interests of members are represented in the optimum manner.

The Engineering department, for example, reacted immediately when the draft of the European standard DIN EN 12831 was issued. Together with other associations, it was thus possible to modify and tone down the basis of calculation for the renewable heat-up factors. The exemption from the additional heating burden was also attributable to these activities.

Sights set on modernising heating systems

One of our future aims is to exercise a greater influence on the modernisation of heating systems. Yet as the annual performance figures for air/water heat pumps is constantly rising, the stock of old buildings will soon also be able to enjoy all the benefits

of environmentally-friendly heating with heat pumps. A special information package for skilled tradesmen on the subject of "Modernising heating systems with heat pumps" is currently being developed, whilst courses for skilled tradesmen to train as heat pump installation engineers are also being increased. Those who graduate receive corresponding certification. As the BWP is an associate member of the SAVE project EU-Cert.HP, it will actively contribute to this project.

Greater force of persuasion in politics

The stubborn ignorance and, as ever, the awful lack of awareness amongst German politicians is another future task for the BWP. The "Politics" department is already organising appropriate actions such as meeting with MPs, forming discussion groups and arranging similar events. The basic information required for this purpose is being put together at present.

The successful work performed by the Association over the last ten years will count for nothing if the commitment shown to date and, above all, the united action of all the BWP's members is not set forth in the coming years. This is the only way to continue to build upon and expand the market share of heat pumps in heating systems in Germany. In this respect, the BWP looks forward to the next ten years of the Association's work with great optimism.

Joachim Ogorek, BWP

Webmaster Report 2004

Statistics, page ranking

The number of page requests again show a continued increase, from 40.300 requests in II/2004 to 44.200 in I/2005.

The EHPA homepage holds first place of most visited sites (internal ranking), followed by EHPN homepage, EHPA Publications, Market and News.

The "Google" ranking of EHPA homepage again shows a favourable position (number 8 of over 2 million heat pump related links in March 2005).

The results of a link check using the software program "Link Popularity Check" shows that around 290 websites have set a link to our homepages. It is important that all EHPA members install a link between their homepage and our website.

Advancement, Update

The project websites of two EU projects, EU-CERT and SHERHPA have now been implemented on the website and will be progressively improved.

There is a comprehensive update of the information contents with emphasis on the items News, Market, Publications, Best practice, EU projects and Links. More information from members will be welcome.

Axel Lehmann, Webmaster

Coming events

Euroheat and Power conference, Berlin 6/7 June at which all current issues of combined heat & power and district heating will be discussed – further information at www.ehpcongress2005.org

European conference and cooperation exchange on sustainable energy systems – Vienna, October 5 to 8 – further information at events@arsenal.ac.at

Environmental energy with heat pumps – possible contribution to carbon dioxide reduction and meeting the Kyoto targets for greenhouse gas reductions with green heat by **Karl Ochnser**, Chair, EHPA Strategy Group. Friday 13 May, room 1, 12.00, KoelnMesse Hall 14.1

Contacts

EHPA secretariat Robert Garwood,
Building Research Establishment,
Garston, Watford, WD25 9XX
United Kingdom
Tel +44 1923 664 621
Email: garwoodr@bre.co.uk
Internet: www.ehpa.org

Editor Rayner Mayer,
Sciotech Projects, Sciotech office,
Engineering Building, Reading University,
Reading RG6 6AY
United Kingdom
Email: rayner@sciotech.demon.co.uk

Closing date for contributions to next issue: **May 31 2005**
Theme: **Labelling**