

IEA HEAT PUMP PROGRAMME

Research, Development, Demonstration and
Promotion of Heat Pumping Technology



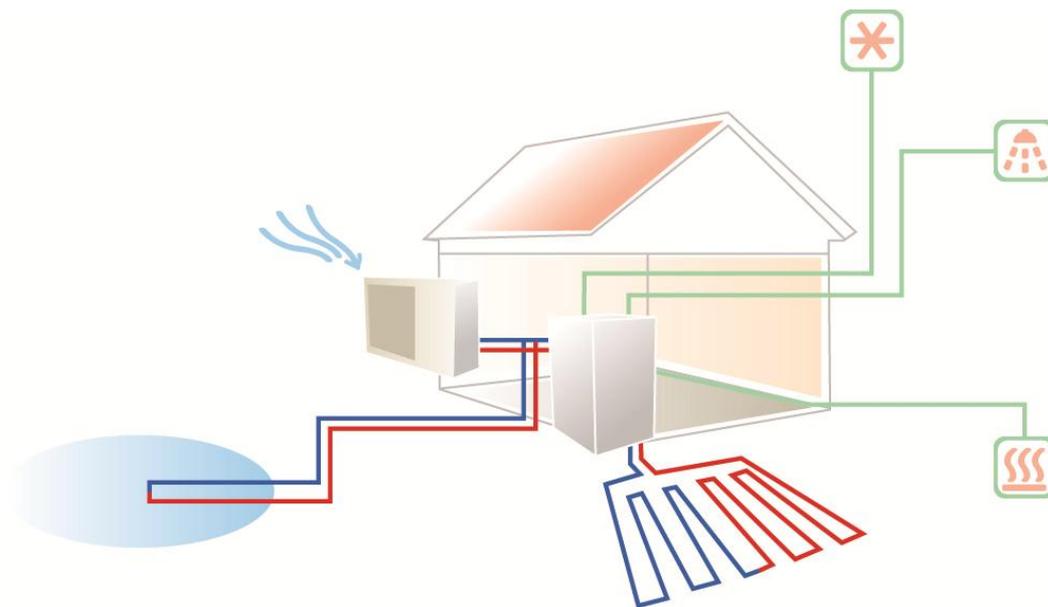
www.heatpumpcentre.org



HEAT PUMPING TECHNOLOGY

Includes

- Heating
- Air conditioning
- Refrigeration



Covers applications in

- Residential and commercial buildings
- Industry

What is the IEA Heat Pump Programme?

An Implementing Agreement within **the IEA** since 1978

An international framework of **cooperation** and **networking** for different HP actors

A forum to exchange **knowledge** and **experience**

A contributor to **technology improvements** by RDD&D projects



THE HEAT PUMP PROGRAMME IS

The foremost worldwide source of **independent information and expertise** on environmental and energy conservation benefits of heat pumping technologies



www.heatpumpcentre.org



HOW DO WE WORK?

Executive Committee

The board of HPP; one vote per member country

National Teams

Organisations representing national HP activities.

A forum for discussion networking and creation of new ideas.

The Heat Pump Centre

The central information activity of HPP



THE HEAT PUMP CENTRE

Information dissemination

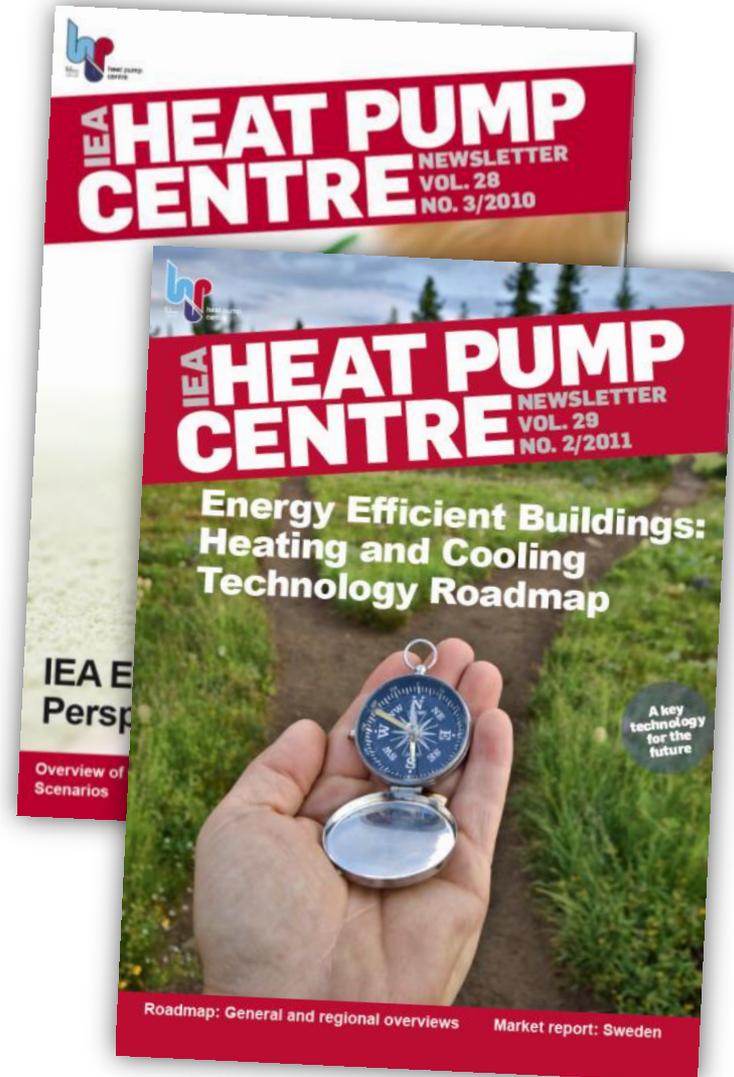
- Publications (e.g. project reports)
- Electronic newsletters
 - short version: abstracts
 - long version: articles
- Website: www.heatpumpcentre.org

Program Support

- to ExCo, NTs and Project leaders

And

- Generation of new activities
- National Teams meetings



AS A MEMBER COUNTRY YOU WILL

- Participate in an international network on HP technology
- Exchange knowledge with other countries
- Participate in international projects (HPP Annexes) to increase national knowledge
- Influence the work of the Programme
- Access the independent and worldwide information services of the Heat Pump Centre
- Be apart of the meeting place for researchers and industry in the HP field

CURRENT PARTICIPATING COUNTRIES



Austria
Canada
Finland
France
Germany

Italy
Japan
Netherlands
Norway
South Korea

Sweden
Switzerland
United States
United Kingdom



41 ANNEXES STARTED SO FAR!

Annex 41 - Improving low ambient temperature performance of Air-Source Heat Pumps (Operating Agent: US)

Still open for new participants!

Identify technology solutions leading to efficient and reliable systems and equipment for buildings in cold climates

Annex 40 - Heat pump concepts for near zero-energy buildings (Operating Agent: CH)

Still open for new participants!

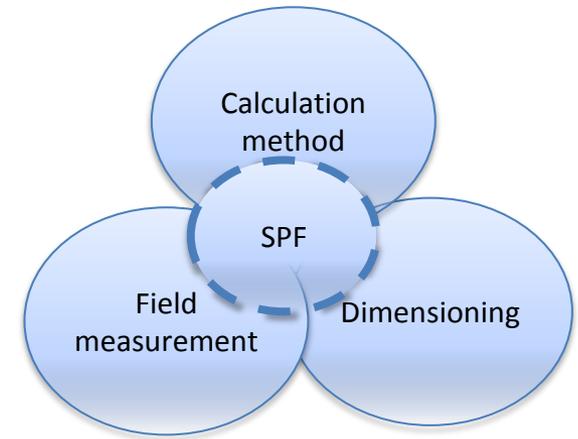
Optimisation of concepts for buildings in order to reach Nearly Zero Energy consumption applying heat pumps as core component of the building technology



41 ANNEXES STARTED SO FAR!

Annex 39 - A common method for testing and rating of residential HP and AC annual/ seasonal performance (Operating Agent: SE)

Establish common calculation and test methods for SPF using a generalised and transparent approach. The focus is on a fair comparison between different heat pump types, but also for comparison between different competing technologies, such as pellet boilers and gas boilers



Annex 38 - Systems using solar thermal energy in combination with heat pumps (Operating Agent: CH)

The aim is to analyse solar and heat pump configurations with respect to energy savings and total cost of ownership (TCO) for investment and operation. Joint Annex with IEA SHC.



41 ANNEXES STARTED SO FAR!

Annex 37 - Demonstration of field measurements on heat pump systems in buildings - Good examples with modern technology (Operating Agent: SE)

Demonstrate and disseminate the economic, energy and environmental potential with HP technology for all types of buildings from already performed field measurements. The focus will be on the best available techniques.



Annex 36 - Quality installation and maintenance (Operating Agent: US)

Produce reliable data to position each participating country to evaluate its pertinent industry standards and practices to ensure optimum heat pump performance. Reduce usage of energy and emissions of greenhouse gases by encouraging use of quality heat pump installation and maintenance practices.



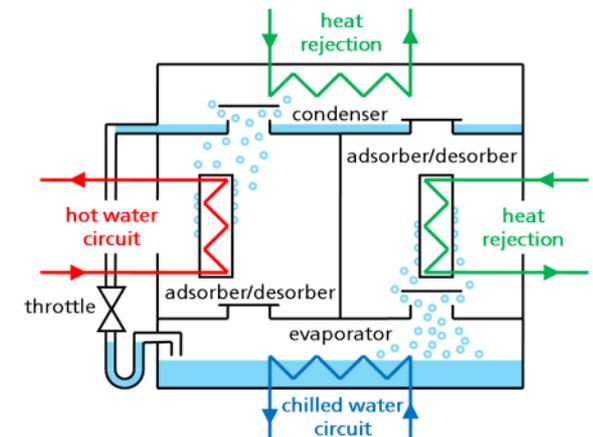
41 ANNEXES STARTED SO FAR!

Annex 35 - Application of Industrial Heat Pumps (Operating Agent: DE)

Reducing the use of energy and emissions of greenhouse gas emissions by the increased application of heat pumps in industry. Development of information that will lead to better understanding of the opportunities and increased deployment.

Annex 34 - Thermally Driven Heat Pumps for Heating and Cooling (Operating Agent: DE)

The economic, environmental and energy performance of integrated thermally driven HPs in cooling and heating systems in a range of climates, countries and applications will be quantified. Those areas and applications with the greatest environmental benefit, the best economics and the greatest market potential will be identified.



...AND STILL MORE TO COME

The following ideas are under discussion:

- Fuel-driven heat pumps
- Heat pumping technologies in the Smart Grid context
- Performance indicators for energy efficient supermarket buildings
- Zero Leakage, minimum charge
- Efficient and cost-effective latent cooling methodologies

EXAMPLES OF OTHER ACTIVITIES OF HPP

Position Papers

Placing HP technology higher on the political agenda

Workshops and symposium

For example in conjunction with conferences, fairs, ExCo or Annex meetings

Coordination with other bodies

E.g. ASHRAE, other IAs, UNEP, ARI/ARTI, EU related Cooperation agreements with IIR and EHPA

Participation at special events

Promotion of HPP



11th International Heat Pump Conference

Montreal, Canada

May 12-16, 2014

<http://www.iea-hpc2014.org/>

IEA SCENARIO FOR THE BUILDING SECTOR 2050

Population, household numbers and service sector activity will grow significantly faster in developing countries than in the OECD

In developing countries, cooling loads are much more important than heating.

Residential buildings in OECD countries are very long-lived and have significant space heat loads



IEA ROAD MAP KEY ACTIONS – TRANSFORM THE FUTURE HEATING AND COOLING MARKET

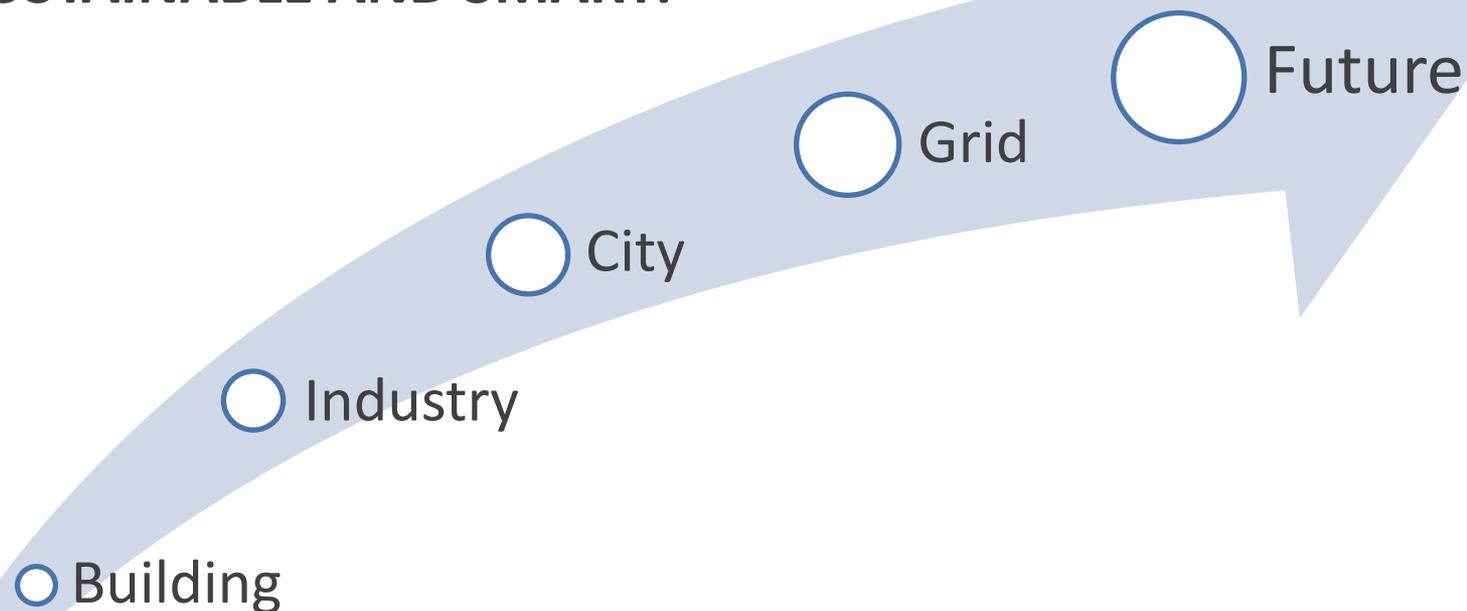
- Increase R& D effort
- Implement new policies to transform the market for heating and cooling technologies.
- Address policy and industry needs at a national or regional level.
- Improve data collection, metrics and standards.



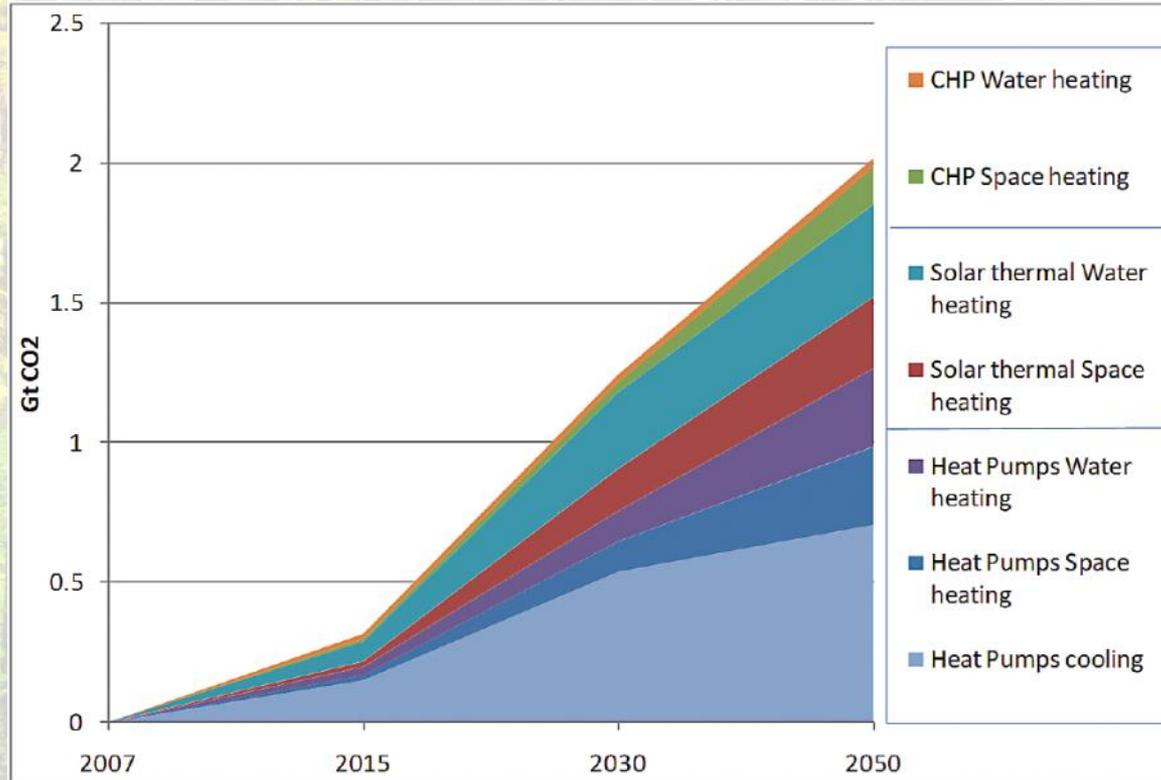
**Heat Pumps –
A key technology for
the future**

HEAT PUMPS ARE RENEWABLE!

TARGETS THE CHALLENGES OF CREATING
THE SUSTAINABLE AND SMART:



HEAT PUMPS WILL PLAY A MAJOR ROLE IN TARGETING GHG REDUCTIONS!



CO₂ emissions reductions in buildings from heating and cooling
- ETP 2010 from International Energy Agency

HEAT PUMPS CAN:

Cut CO₂ emissions from buildings by 30%!

Reduce exposure to supply risk

Reduce infrastructure costs for energy supply networks



FOR MORE INFORMATION...

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www.heatpumpcentre.org



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