
EUROPEAN
HEAT PUMP
SUMMIT
POWERED BY CHILLVENTA
SYMPOSIUM + EXPO
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Industrial | Commercial | Residential
Heating & Cooling | Components & Equipment
hp-summit.de
NÜRNBERG MESSE

IEA Heat Pumping Technologies - An overview of the programme and its activities

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IEA Heat Pump Centre

Research, Development, Demonstration and Promotion of Heat Pumping Technology

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

IEA Scenario for the Building Sector 2050

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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

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- Increase R& D effort
- Implement new polices 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 are energy efficient and renewable!

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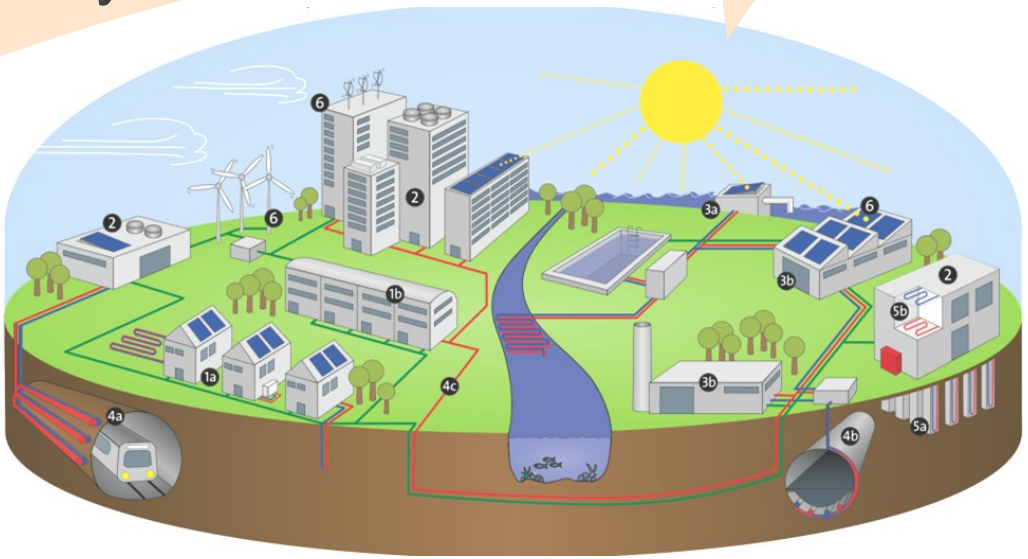
TARGETS THE CHALLENGES OF CREATING THE SUSTAINABLE AND SMART:

- Building
- Industry
- City
- Grid
- Future



Source: EHPA (2010)

Heat Pumps will play a major role in targeting GHG reductions!

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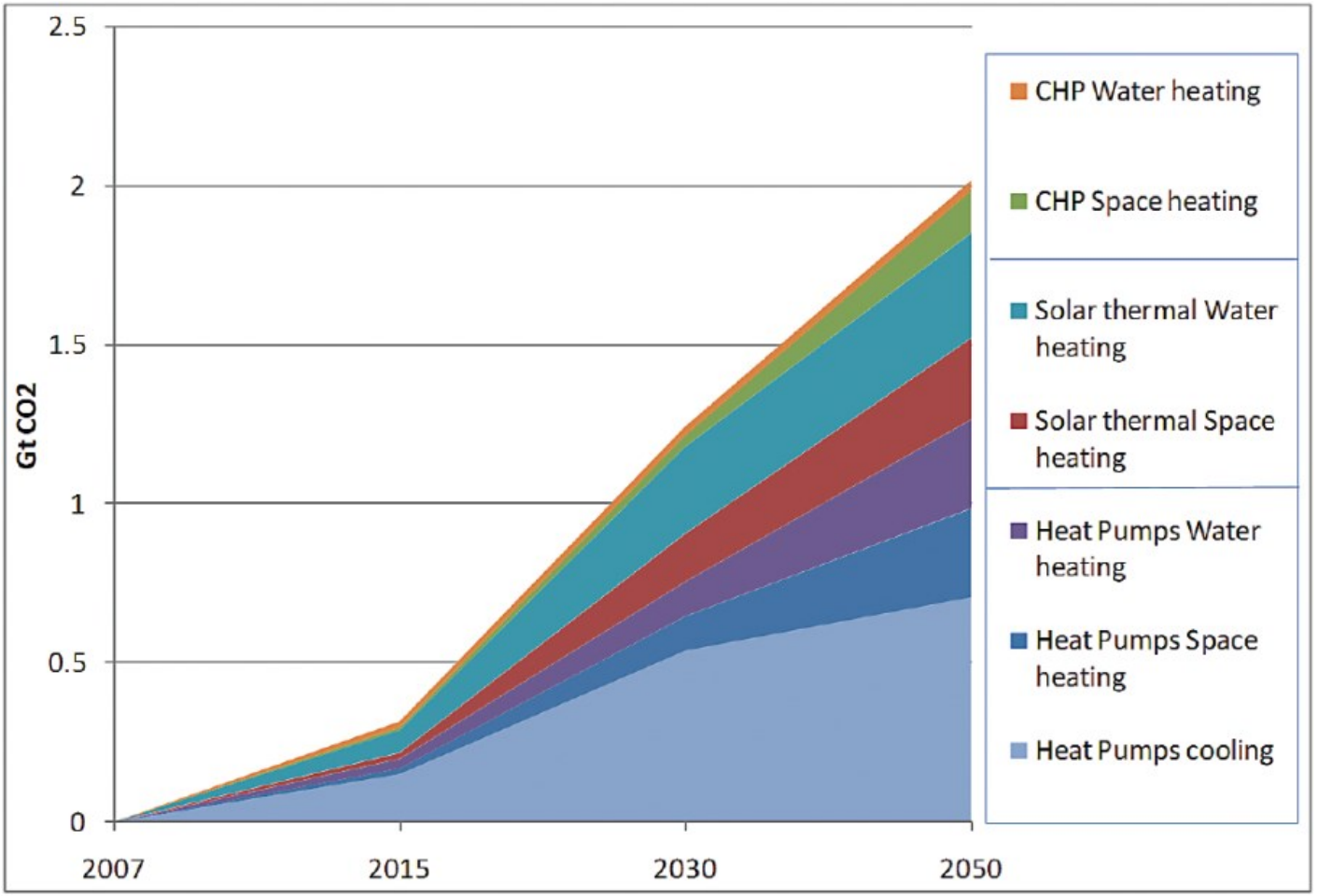

CO_2 emissions reductions in buildings from heating and cooling
- ETP 2010 from International Energy Agency

Much room for HP's

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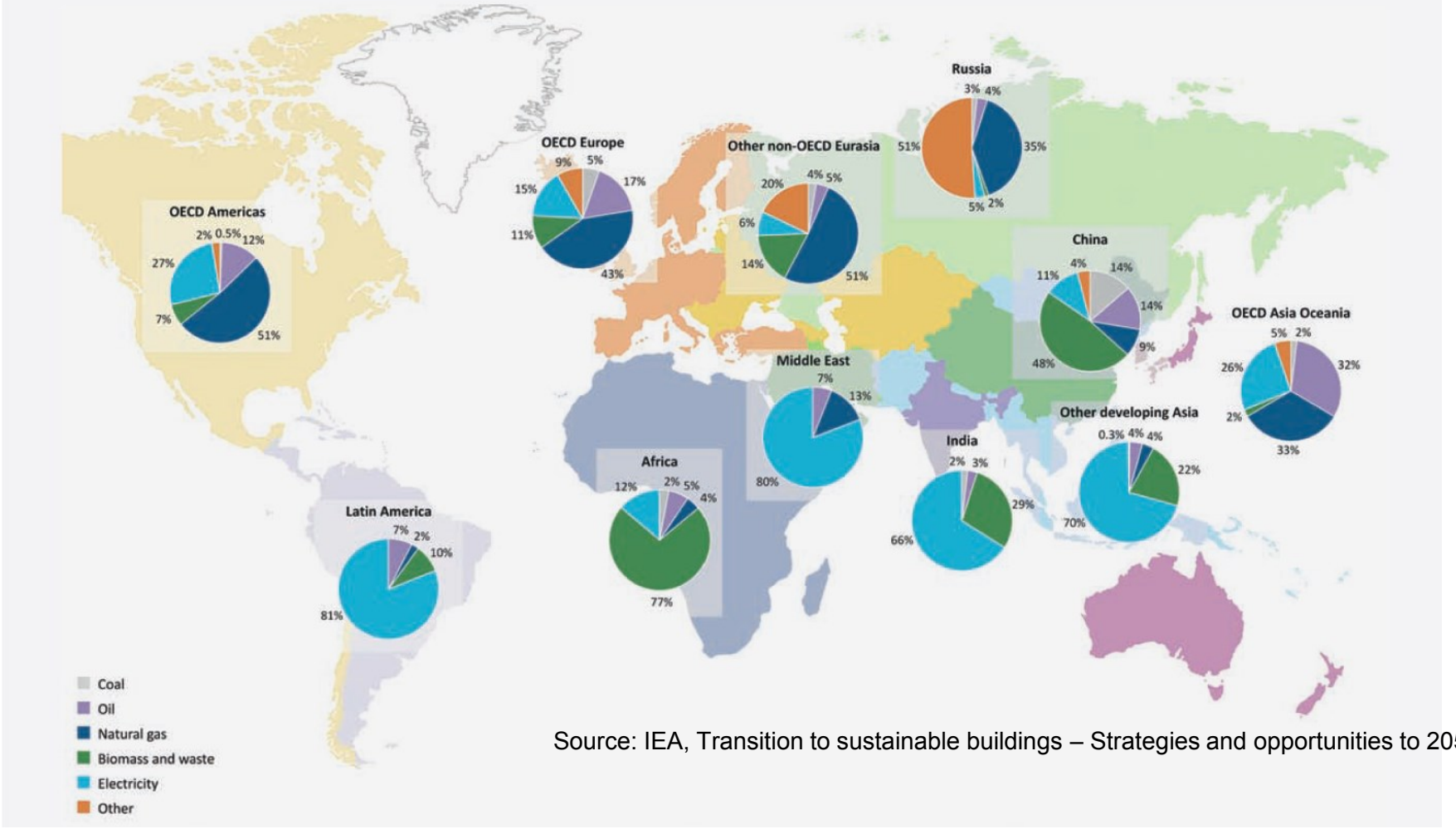
Figure 4.1 Heating and cooling consumption by region for different types of fuel in 2010



Source: IEA, Transition to sustainable buildings – Strategies and opportunities to 2050

Heat pumps could be utilised in many different positions in the region/city/consumer (Future Building Forum)

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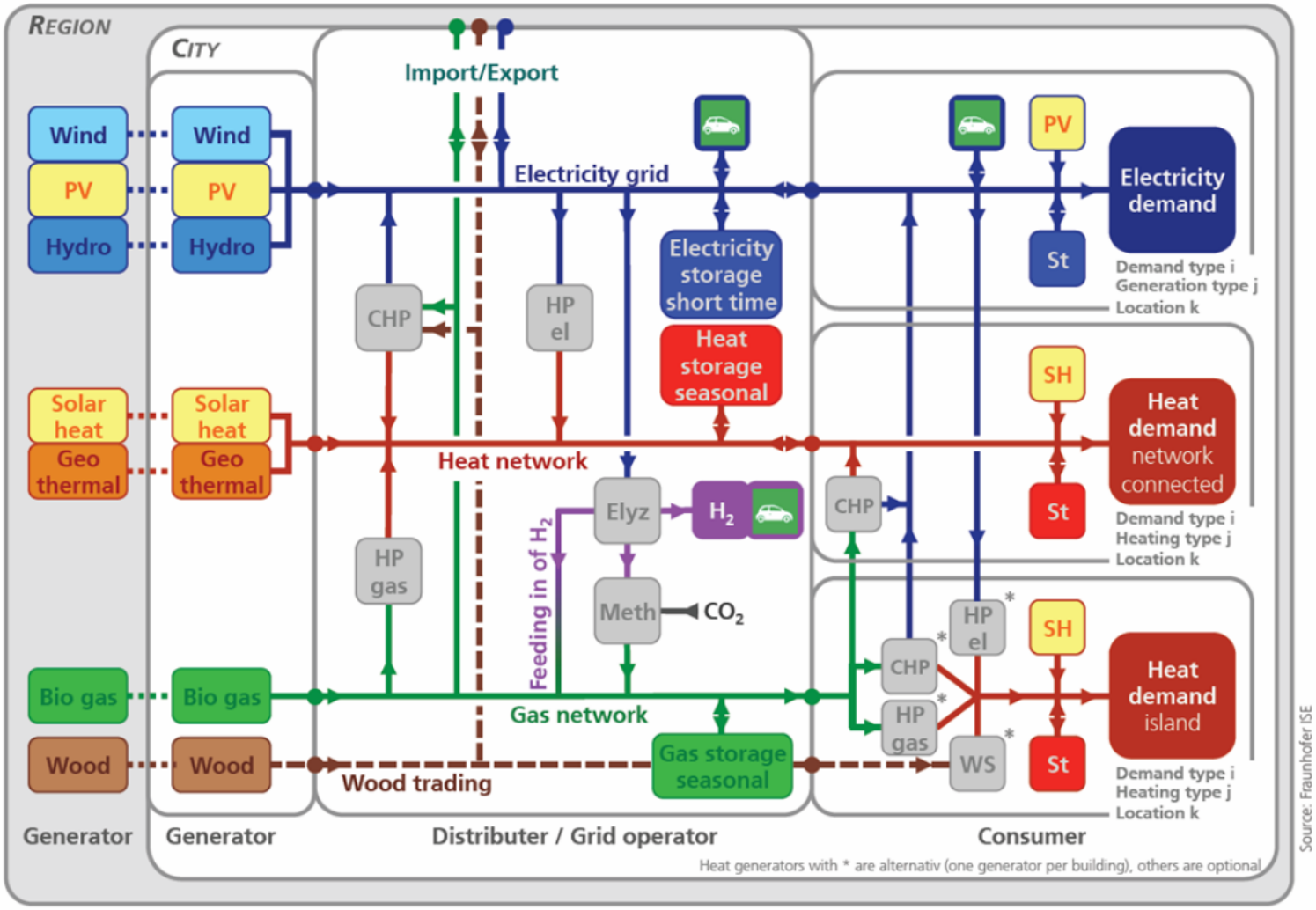
Urban Energy System based on 100% Renewable Energies



HP el/gas = Heat pump electric / gas driven, CHP = Combined heat and power, WS = Wood stove, St = storage, SH = Solar heat, Elyz = Elektrolyzer, Meth = Methanation

EU concludes:

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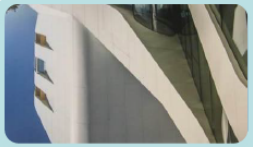
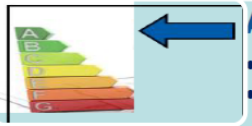
European Commission

The key barriers are both technological and non-technological



Technological

- Materials and components -design and design tools
- Deep renovation
- Industry (process industry and fabrication)

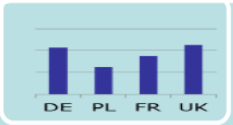


Administrative

- Building capacity and skills
- Exchange of best practice

Financial

- Creating favourable market conditions
- Replicating successful business models
- Preparing the ground for investments



Regulatory

- Shaping policy development and implementation
- Tackling regulatory barriers
- Informing stakeholders and fostering commitment

Performance

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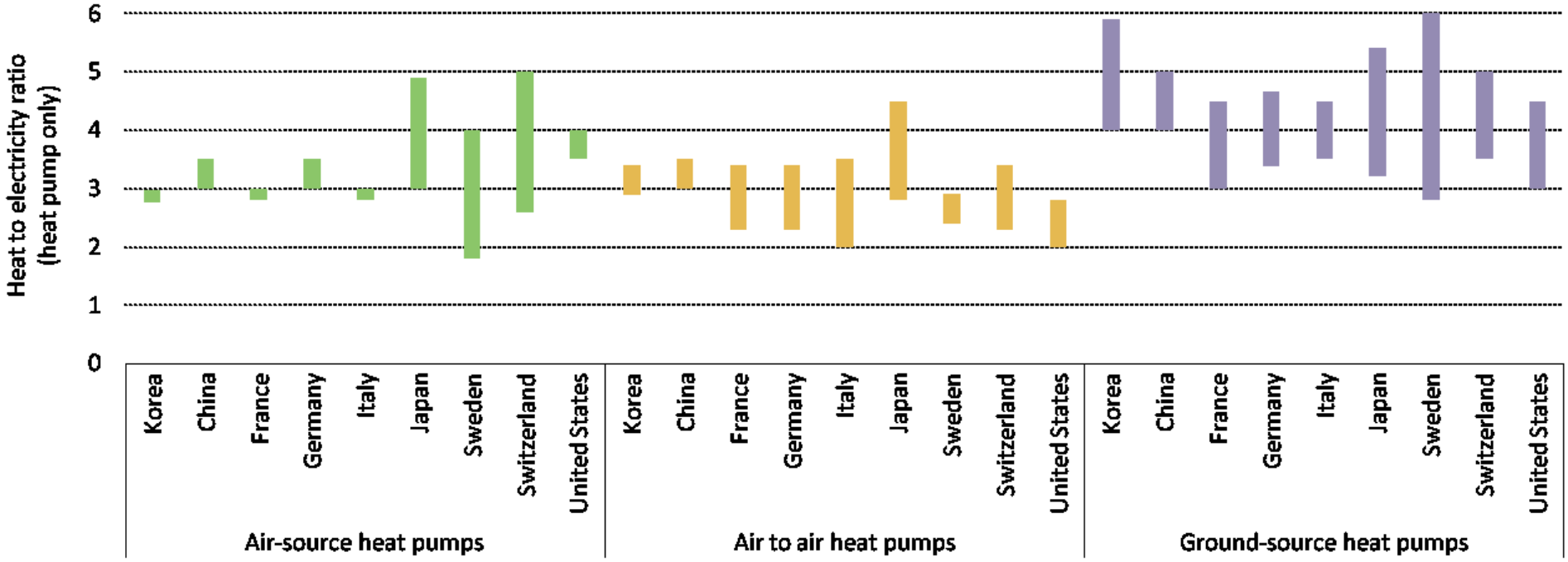
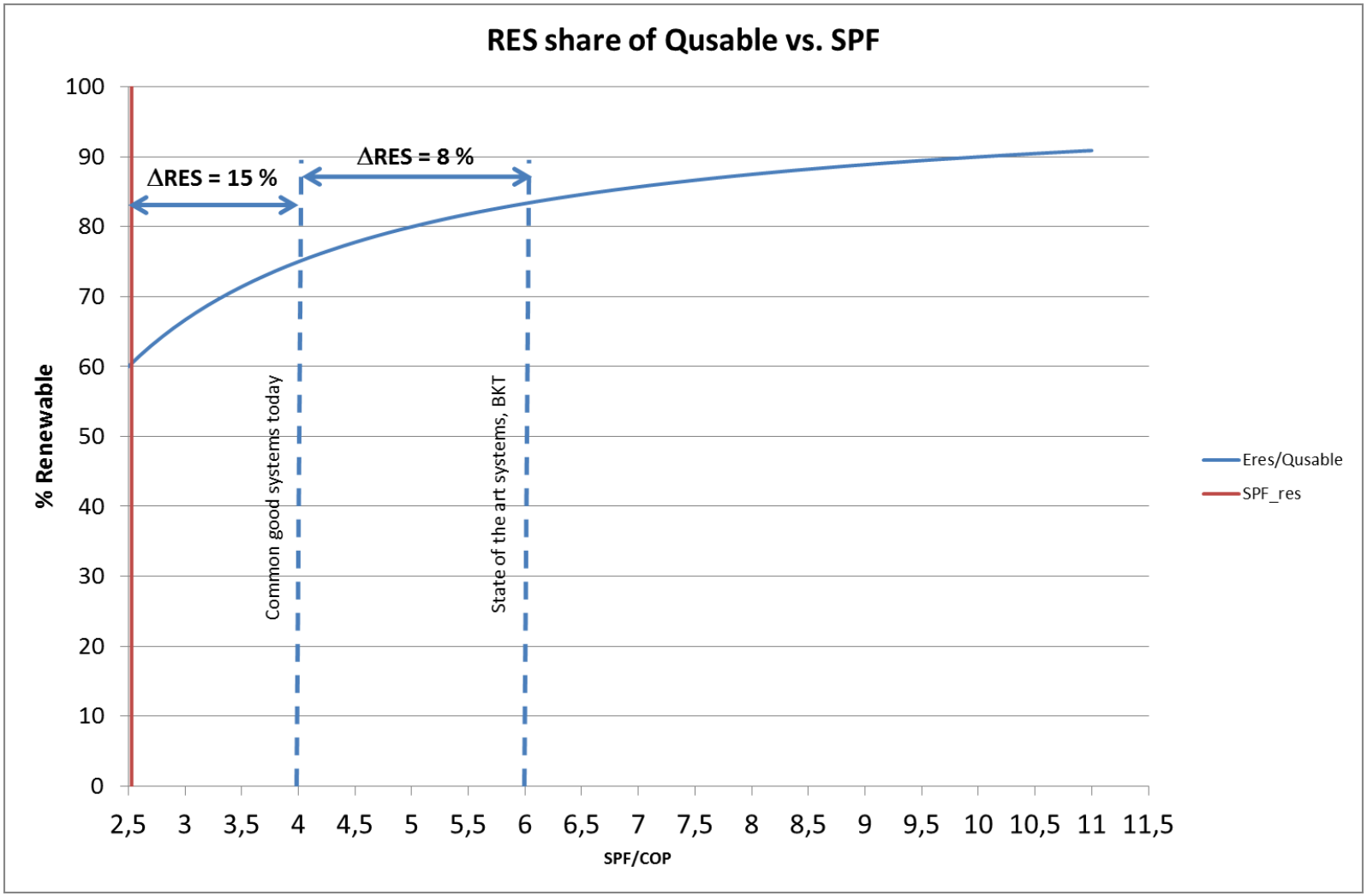


Source: IEA 2012 based on IEA Heat Pump Programme and US DOE/EERE (2009).

Performance important- but not all



Future measures

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Hybrid HP's (security of supply)

HPWH's (Especially in NZEB's)

Silent (low noise) ASHP's

Multi-source HP's

High efficiency comfort cooling and AC

High quality, reliable installations

MORE ABOUT…

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Current Participating Countries

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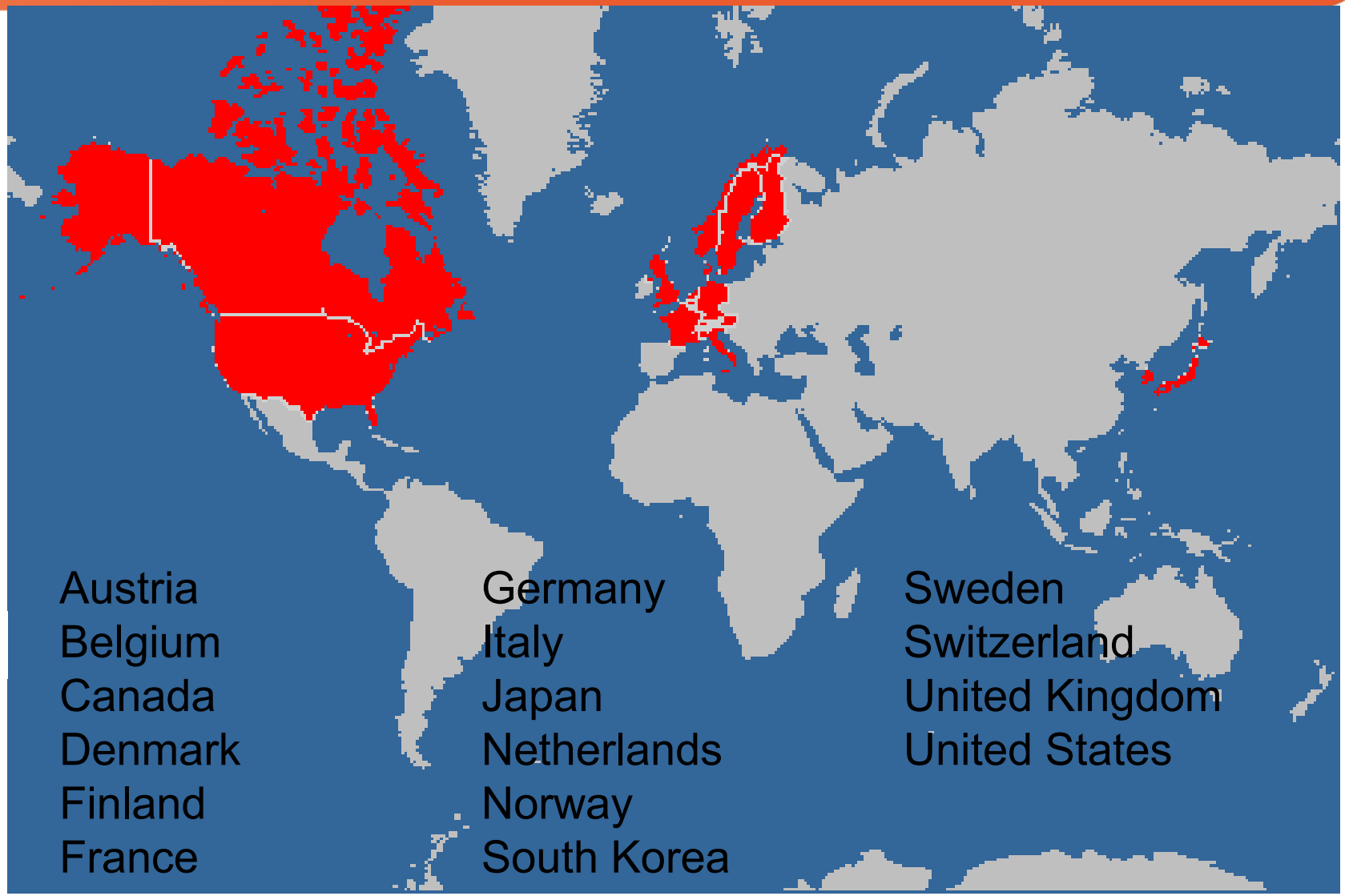

new

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 repor
- 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

Annex 47 – Heat pumps in District Heating and Cooling systems

(Operating agent: **DK**) **O***pen for new participants!*

Gather information and ideas for policy makers and decision makers and planners of energy systems in urban areas concerning the possibilities and barriers related to the implementation of heat pumps in DHC systems.

Suggest how heat pumps can be implemented in both new and old district heating systems in the best way. The different types of integration will be described.

Annex 46 – Heat Pumps for Domestic Hot Water

(Operating agent: **NL**) **O***pen for new participants!*

Analyse the information on DHW-heat pumping technologies and structure it to the market - ranging from end user to consultant, building constructor, and policy maker..

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Annex 45 – Hybrid Heat Pumps

(Operating agent: **NL**) **O***pen for new participants!*

Investigate the potential of energy and emission of greenhouse gases emission reduction by the increased implementation of hybrid heat pumps. Both through replacement of boilers, and by means of upgrading the systems' efficiency in existing running installations.

The focus of this Annex will be on the residential sector, as well as the light commercial sector, where the market overview shows potential.

Annex 44 – Performance indicators for Energy efficient Supermarket buildings

(Operating agent: **NL**) Creation of key performance indicators for energy efficient supermarket buildings and knowledge concerning the energy efficiency of supermarket buildings from measurements and monitored data

47 annexes started so far!

Annex 43 - Fuel-driven sorption heat pumps determined
(Operating agent: DE)

Field test of different fuel driven heat pumps

Compare different system configurations e.g. different sources

Evaluate different technologies for different applications e.g. retrofit versus new buildings

Classification of system schemes, generic system layout

Annex 42 - Heat Pumps in Smart grids
(Operating Agent: NL)

Arranging the information on heat pumping technologies in such a way that it will lead to better understanding of the opportunities and using these in the right way in order to reduce the use of primary energy consumption and the CO_2-emissions as well as energy costs.

Inventory of critical success factors for implementation smart grids and smart cities

47 annexes started so far!

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Annex 41 – Cold climate heat pumps (Improving low ambient temperature performance of air-source heat pumps) (Operating Agent: US)

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)

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

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The following ideas are under discussion:

Industrial heat pumps, phase II

Heat pumps in multi-family buildings

Air conditioning

Ground source heat pumps

Interested?

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Countries interested in joining the Programme are **welcome to join** an Executive Committee meeting **as observers**.

Next ExCo meeting is held in Basel, Switzerland in November 10-11 (worksop on the 9th)

National Teams' meeting (1)

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A forum for discussion, networking, and creation and development of new ideas.

National Teams from all member countries are welcome

Thursday October 22, (09.00-15.00)

Venue: Nürnberg (Messe), Germany, the day after the European Heat Pump Summit

National Teams' meeting (2)

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The main focus of the meeting will be to find and develop new interesting annex ideas, in discussion groups.

Do not miss our next conference in 2017!

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More info: HPC2017.org

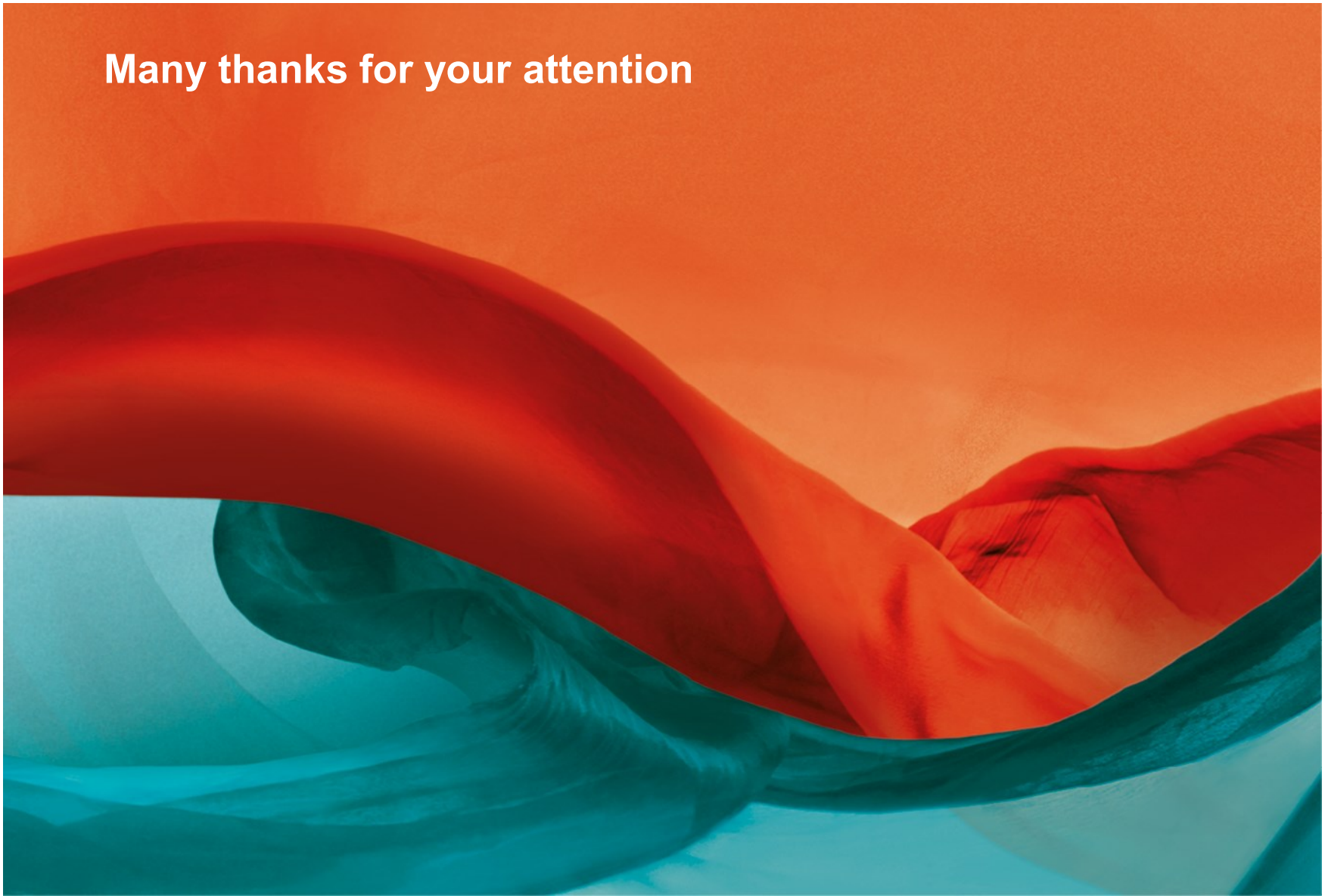
The 12th IEA Heat Pump Conference will be held from 15th to 18th May 2017, at the World Trade Centre in Rotterdam. The Conference will begin with a series of workshops on 15th May and a welcoming reception on the evening of 15th May.

The goal of the conference is to promote heat pumping technologies through discussions, networking, and information exchange.

The conference will pay attention to heat pumps, air conditioning and refrigeration equipment and systems for residential, commercial and industrial applications.

12th IEA HEAT PUMP CONFERENCE 2017 | ROTTERDAM

Many thanks for your attention

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