Technology Collaboration Programme
by iea

Technology Collaboration Programm on

Heat Pumping Technologies by iea

Driving Transition Through Innovation

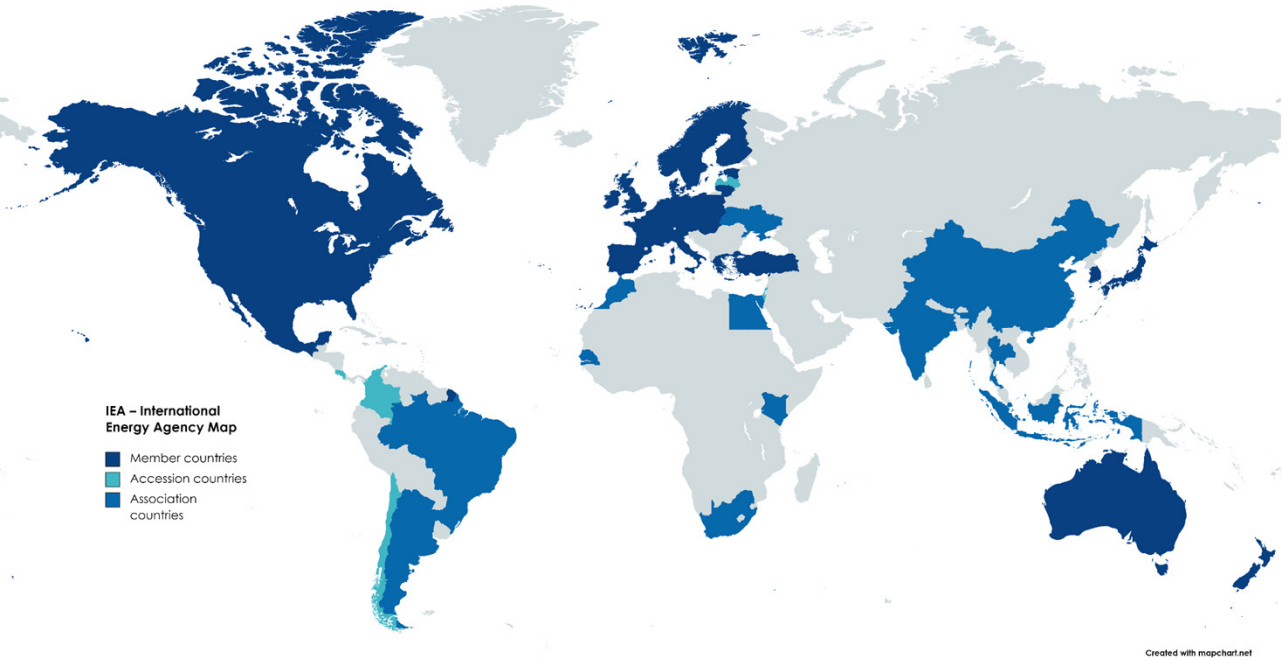
Research, Development, Demonstration, and Deployment of Heat Pumping Technologies

Stephan Renz, Chairman HPT TCP

The HPT TCP is part of a network of autonomous collaborative partnerships focused on a wide range of energy technologies known as Technology Collaboration Programmes or TCPs. The TCPs are organized under the auspices of the International Energy Agency (IEA), but the TCPs are functionally and legally autonomous. Views, findings, and publications of the HPT TCP do not necessarily represent the views or policies of the IEA Secretariat or its individual member countries.

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International Energy Agency



Source: https://en.wikipedia.org/wiki/International_Energy_Agency

The **intergovernmental organisation** that provides **energy data, analysis, and policy recommendations** to help countries **ensure energy security** and **accelerate the transition** to sustainable energy systems

The IEA TCPs



Image by qimono from Pixabay

38 **global networks** aiming to accelerate **energy innovation** through cooperation among **governments, industry and experts** since 1975**.**

- Lead by **independent expert groups**
- **Advance research, development and commercialisation**
- Delivering **pilots, databases** and **standards**.

The topics span over **renewables**, smart grids, hydrogen, carbon capture, fuels and **energy efficiency**.

IEA - Reports



IEA Reports are an international recognized and leading source of information, recommendation, and perspectives for a secure and sustainable energy future.

They are an important input for our strategy and we are happy to contribute with our expertise and advice in the field of heat pumping technologies. This makes them an important communication tool for us.

Latest reports: **Heat Pump Taxonomy** (May 2023); **Heat Pump Monitor** (July 2026)

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Heat Pumping Technologies TCP by iea

- A Technology Collaboration Programme (TCP) 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



Research, Development, Demonstration and Promotion of Heat Pumping Technologies

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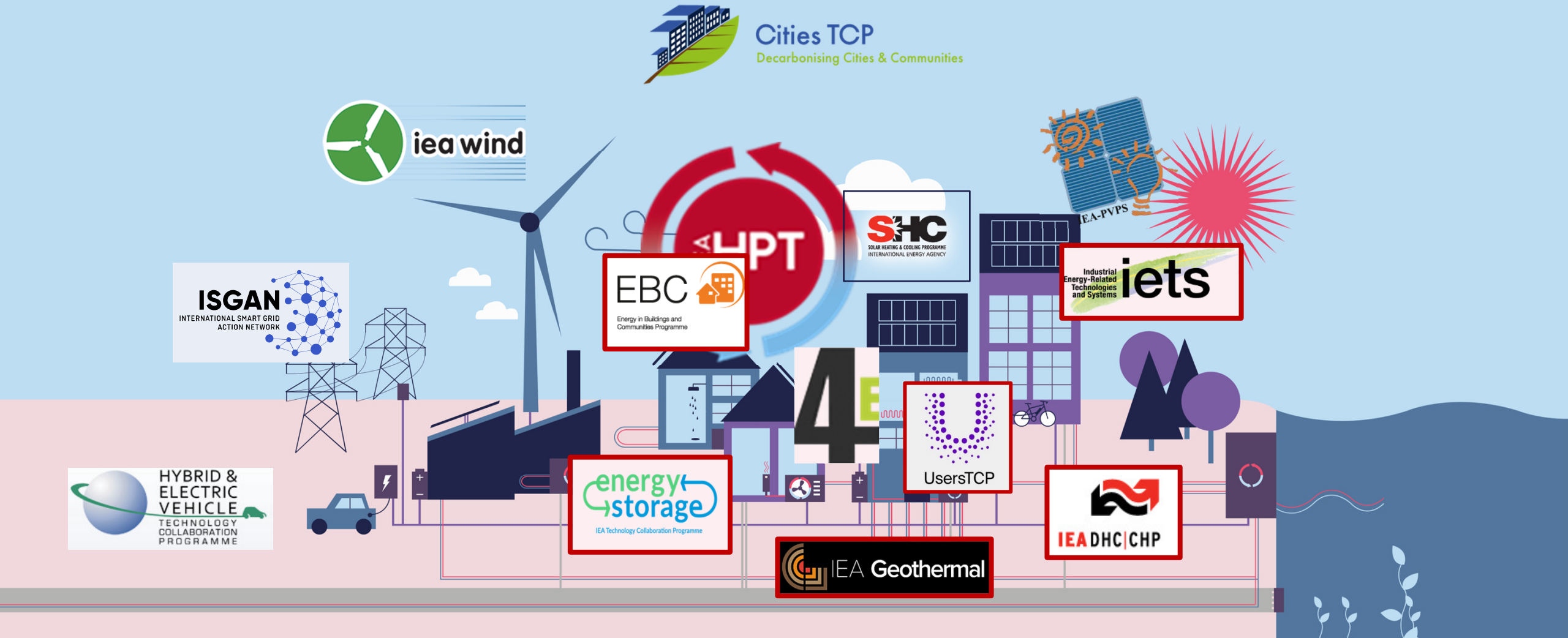
Heat Pumping Technologies Driving Transition Through Innovation

Heat pumps are the proven technology for electrifying the energy system; to make it efficient, zero emission and secure.



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Dialog and collaboration with other IEA TCPs



HPT TCP – Organisation & Management

Creating new Annexes



Ideas



mandate

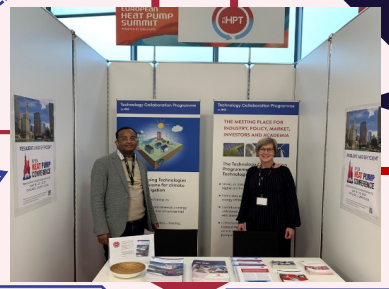






Elaborating knowledge in Projects

Propos



information/reports

management/control

better technology

Every 3 years





C
Co-
bers

Collaborating, Exchange Contribution to Conference

Technology Collaboration Programme by IEA

International Energy Agency Secure Sustainable Together

ehpa european heat pump association

EUROPEAN HEAT PUMP SUMMIT POWERED BY CHILLVENTA

International Institute of Refrigeration (IIR)

MISSION INNOVATION

Publications



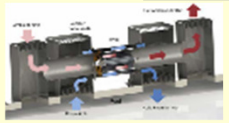
Police & Adminstration
Industry & Market











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Communication and Dialogues

Information dissemination and communication

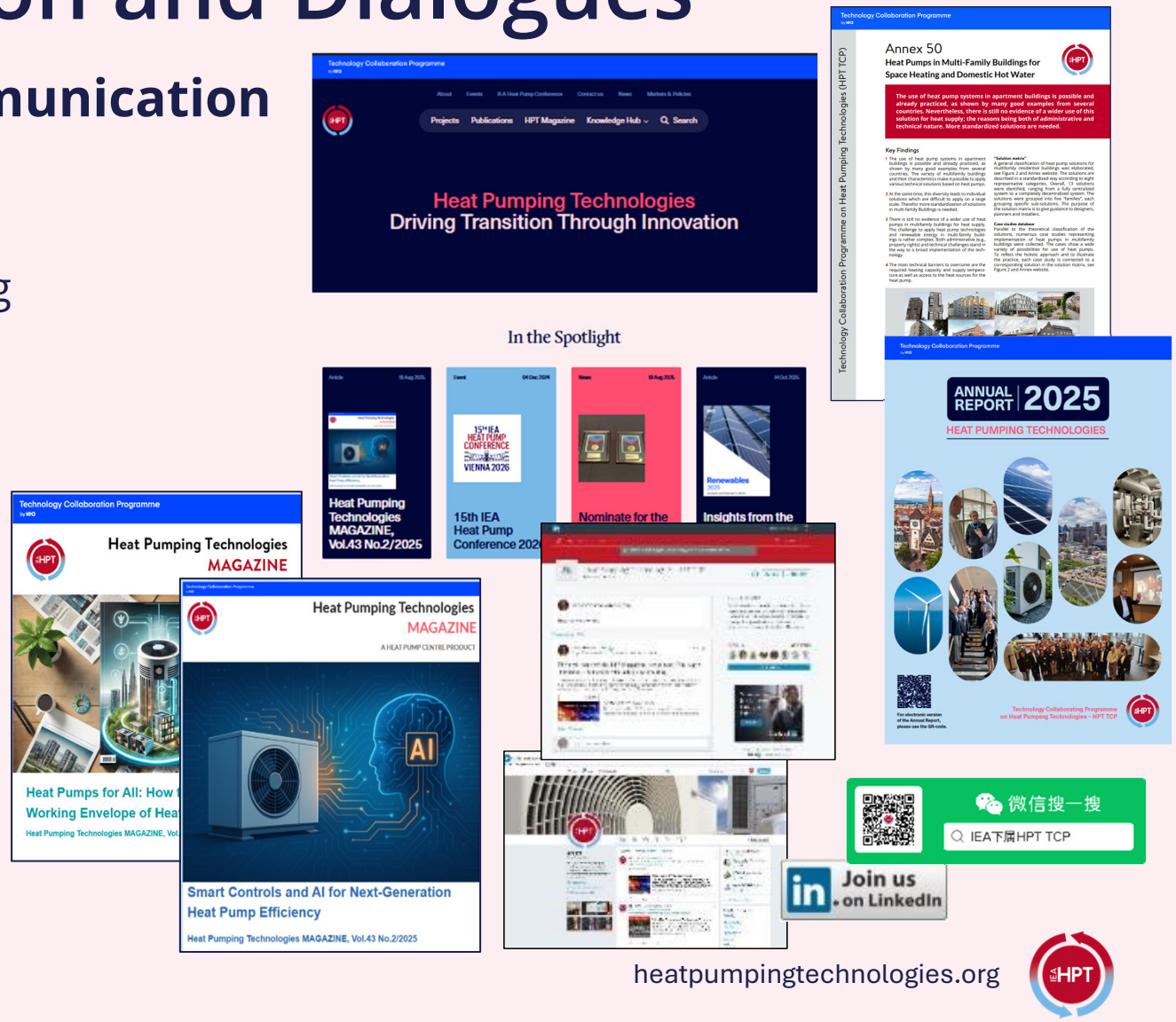
- Publications (e.g. project reports)
- HPT Magazine and Newsletter (digital)
- Website: www.heatpumpingtechnologies.org
- **Workshops and webinars**
- Social media: LinkedIn and WeChat

IEA Heat Pump Conference

- Organized every 3rd year
- **Next: 2029 in Copenhagen**

And

- National Experts meetings
- Support to IEA publications
- Outreach activities



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RDD&D Priority Areas 2023-2028

System integration	Robust, sustainable, affordable value chains	Extending operation range and applications	Refrigerants and new technologies
			 
Sector coupling, energy efficiency, flexibility, resilience, storage, digitalization, positive energy districts	Improving affordability, securing value chains, circular economy, removing barriers for mass deployment	To fulfill demand from all climate zones, new markets, new applica-tions and new demand. Refrigeration in emerging countries.	Non-traditional heat pumping technologies (heating and cooling) Refrigerants (low GWP, safety etc.)

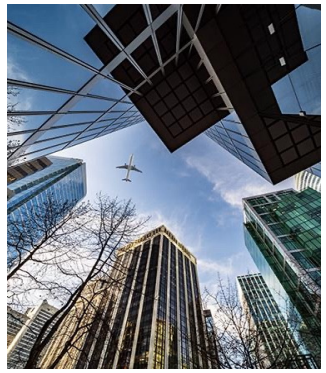
RDD&D Priority Areas 2023-2028 - International collaboration projects

System integration	Robust, sustainable, affordable value chains	Extending operation range and applications	Refrigerants and new technologies
			 
• **Project 61**: Heat Pumps in Positive Energy Districts • **Project 67**: Digital Services for Heat Pumps • **Project 70:** Flexibility from Large-Scale and Aggregated Heat Pump Systems **NEW** • Heat pumps for hydrogen and carbon capture • Climate-friendly Comfort Cooling focus on Natural Refrigerants	• **Project 63:** Placement Impact on Heat Pump Acoustics • **Project 65:** Heat Pumps in a Circular Economy • **Project 66:** Optimal Heat Pump Design and Operation for Broader Acceptance • **Project 69:** Enhanced Miniaturized Components **NEW** • New or alternative business models for heat pump	• **Project 59:** Heat Pumps for Drying • **Project 60:** Retrofit Heat Pump in Larger Non-domestic Buildings • **Project 62:** Heat Pumps in residential multifamily buildings in cities • **Project 68:** Industrial High Temperature Heat Pumps • Operating heat pumps in multi-family residential buildings	• **Project 54:** Heat Pump Systems with low GWP Refrigerants FINALIZED • **Project 64:** Safety Measures on Flammable Refrigerants • Monitoring of Advanced Vapor-Compression and non-Vapour-Compression Technologies for Heating, Cooling and refrigeration • Safe Use of Refrigerants in Heat Pumping Technologies

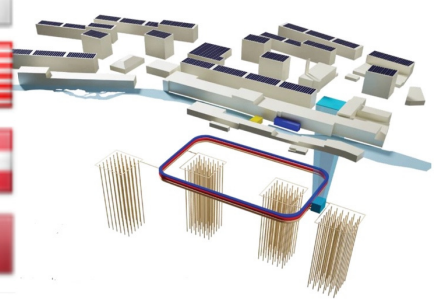
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The Projects

Project 60
Retrofit Heat Pump Systems in Large Non-domestic Buildings



Project 61
Heat Pumps in Positive Energy District



Project 62
Heat pumps for multi-family residential buildings in cities



Project 63
Placement Impact on Heat Pump Acoustics



Project 64
Safety measures for flammable refrigerants

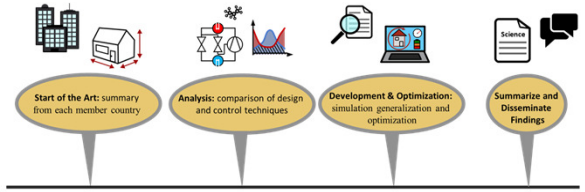


The Projects

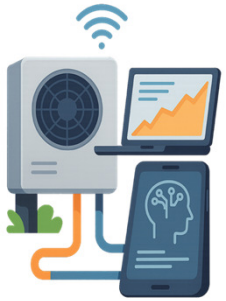
Project 65
Heat Pumps in a Circular Economy



Project 66
Optimal Heat Pump Design and Operation



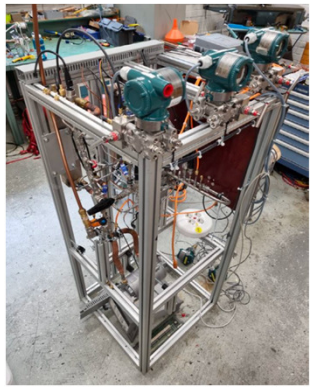
Project 67
Digital Services for Heat Pumps



Project 68
Industrial High-Temperature Heat Pumps



Project 69
Enhanced Miniaturized Components



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The Projects

… just launched



Project 70
Flexibility from Large-Scale and Aggregated Heat Pump Systems



…. and more to come …

Project ??
Heat Pumps in action!
Operating heat pumps in multi-family residential buildings

Idea …
Energetic Optimization of Multi Use Waste Energy Heat Pumps focussing on residential as well as light commercial buildings

Project ??
Heat pumps for hydrogen production and carbon capture

Idea …
Advancing HP circularity: business potentials and technological requirements/ needs/challenges

Project ??
CliCo-Nat
Climate-friendly Comfort Cooling focus on Natural Refrigerants

Idea …
Safe Use of Refrigerants in Heat Pumping Technologies

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IEA Heat Pump Conference is our Flagship Event

1984Graz1987Orlando1990Tokyo1993Maastricht1996Toronto
1999Berlin2002Beijing2005LasVegas2008Zurich2011Japan and …



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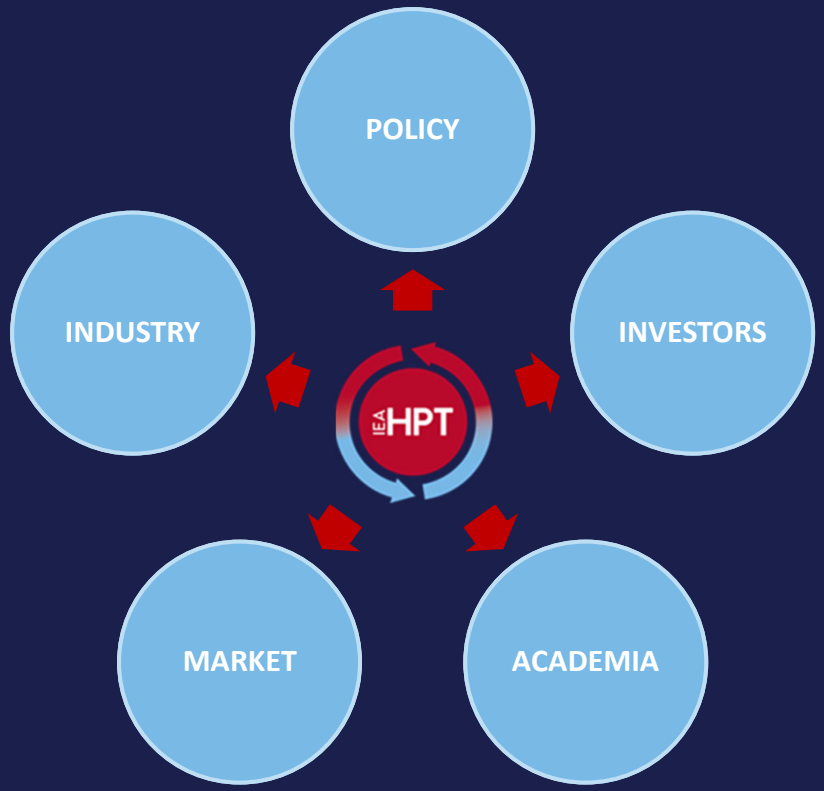
…. 2029: 16th IEA Heat Pump Conference in



Copenhagen

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Who we are and what we do ...



We are a member of the Technology Collaboration Programme by IEA

We are 22 (Membe)r Countries from around the world

We are collaborating in 10 ongoing projects

We collaborate with IEA an contribute to their reports

We collaborate with other TCPs and develop together projects

We collaborate with other science and commercial organizations

We have a management and communication office (Heat Pump Center)

We communicate via Website, LinkedIn, X, WeChat,

We communicate via Newletter, Magazin and Reports

We communicate via Webinars, Workshops, Conferences

We elaborate knowledge

We are a platform for innovation

We are the front runner in novel heat pumping technologies

The worldwide key player in generating and communicating independent knowledge on heat pumping technologies

Contacts



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Thanks for your attention

