



**Workshop: “The importance of heat pump data for policy-making and innovation.”  
Part I Heat pump trends and international experiences**

23 January 2025, IEA Headquarters

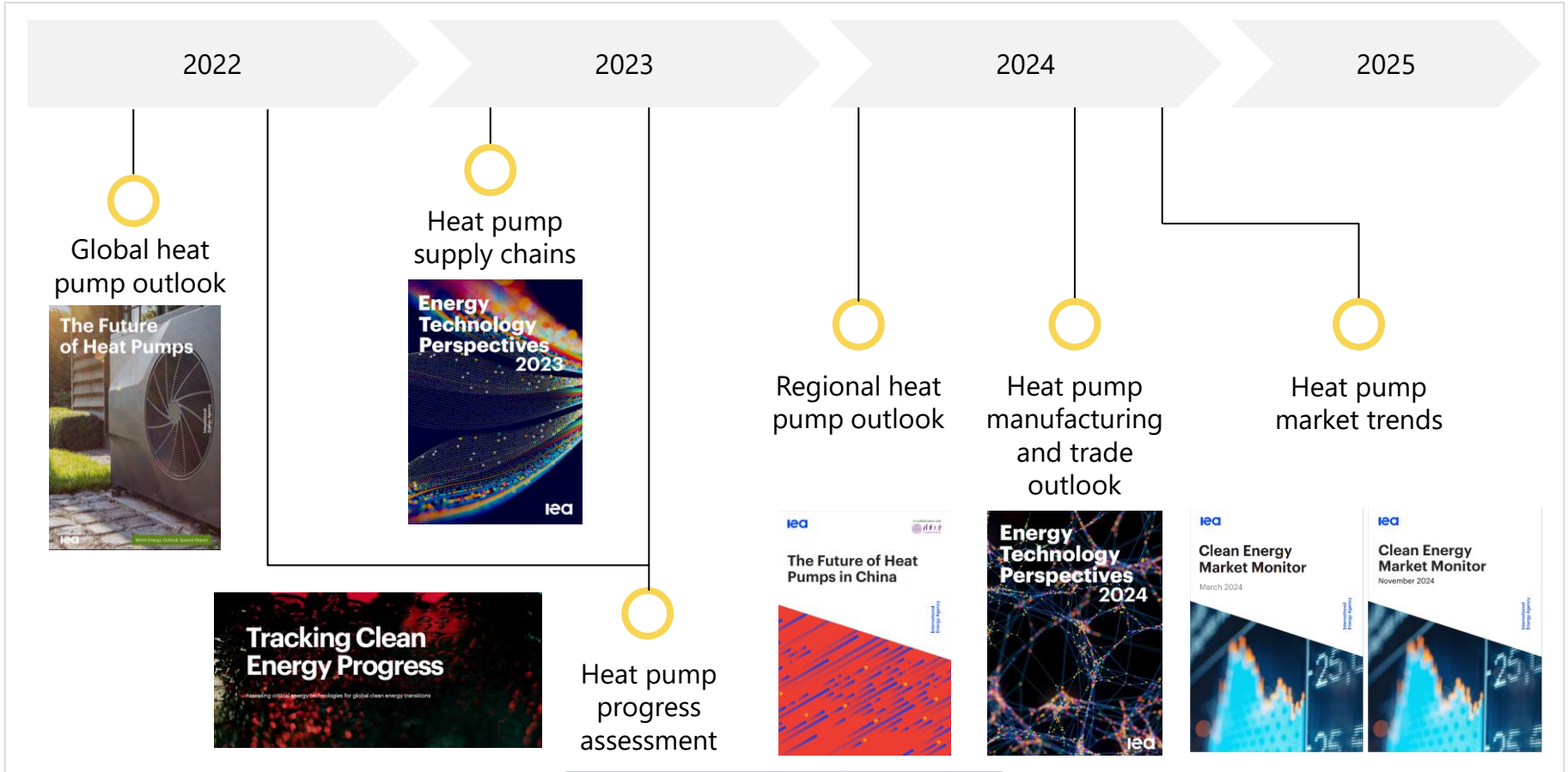


# Global perspectives on heat pump deployment

Araceli Fernández, Head of Technology Innovation Unit

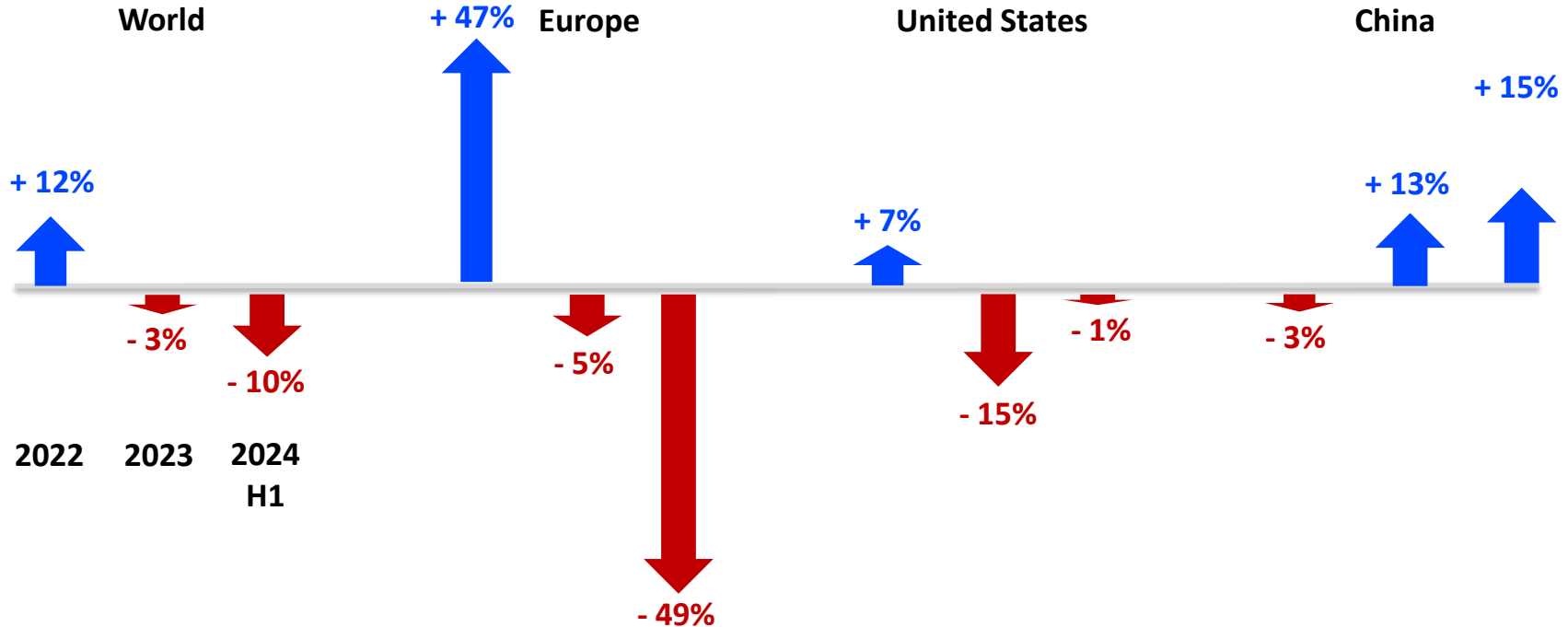
The importance of heat pump data for policy-making and innovation, January 2025

# A central technology for secure and sustainable heat



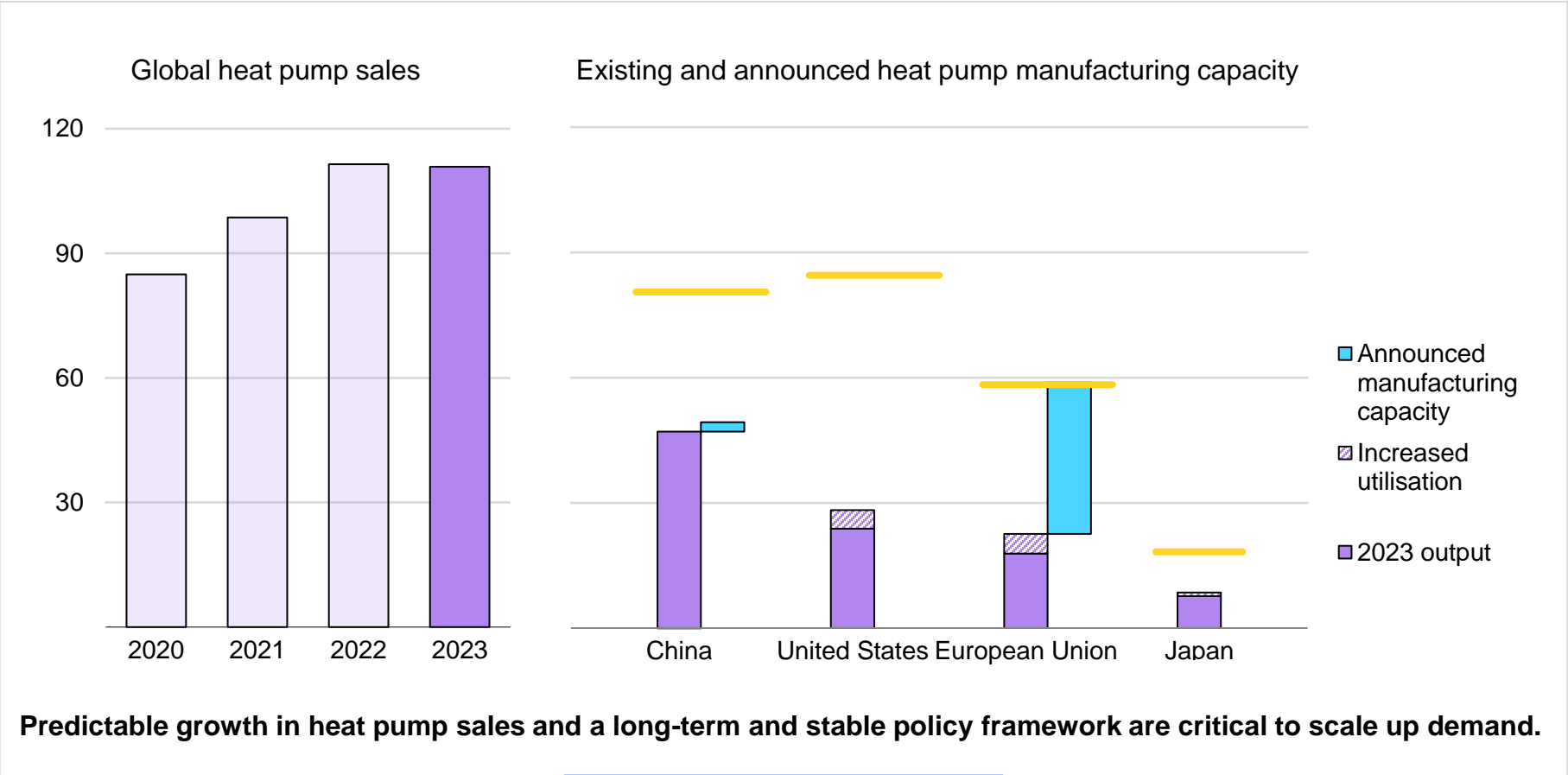
# After years of growth, heat pump sales are slowing down...

Annual growth in sales of heat pumps in buildings, 2022, 2023 and first half of 2024



Global heat pump sales surged in 2022, but have since slowed amid lower consumer spending, policy uncertainty and falling natural gas prices.

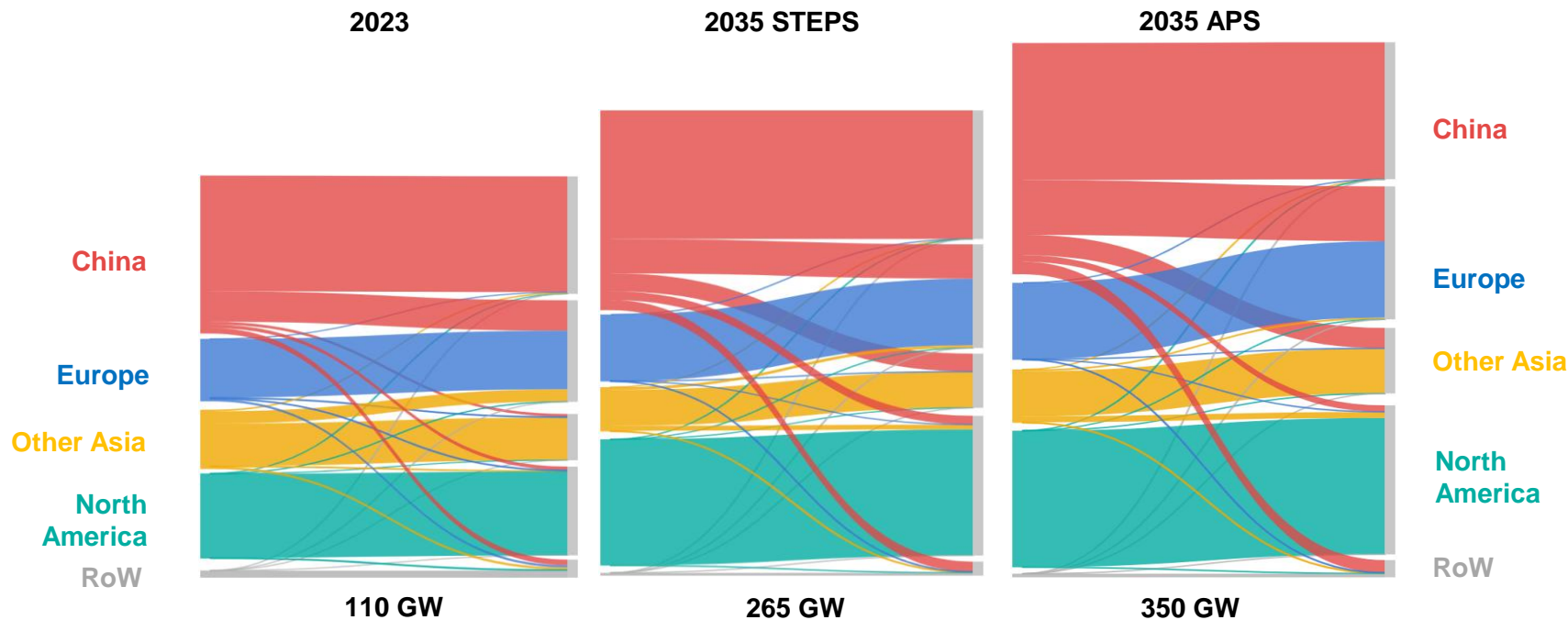
# ... bringing uncertainty to heat pump supply chains worldwide



**Predictable growth in heat pump sales and a long-term and stable policy framework are critical to scale up demand.**

# Heat pump supply is largely domestic, but trade is surging

Global manufacturing and trade flows of heat pumps, 2023, and in the STEPS and APS, 2035



**Both, under current policy settings and in an outlook based on climate pledges, heat pump trade activity increases, and major markets continue to source most of their demand domestically.**

# Session I: Heat pump market trends, data collection and reporting

Moderated by Thomas Nowak, Vice President Government Relations and Public Affairs, Quantum International



# European heat pump market data

IEA workshop on heat pump market data

Jozefien Vanbecelaere, 23 January 2025, Paris



# About EHPA

## Our vision:

In a fully decarbonised Europe, heat pump technologies are the number one heating and cooling solution. They are a central part of a renewable, sustainable and smart energy system.

More: [ehpa.org](https://ehpa.org)

## **Founded in 2000**

### **230 members representing the entire value chain**

- Heat pump and component manufacturers
- National associations
- Test labs
- Utilities and consultancies
- Research institutes and universities

### **33 countries**

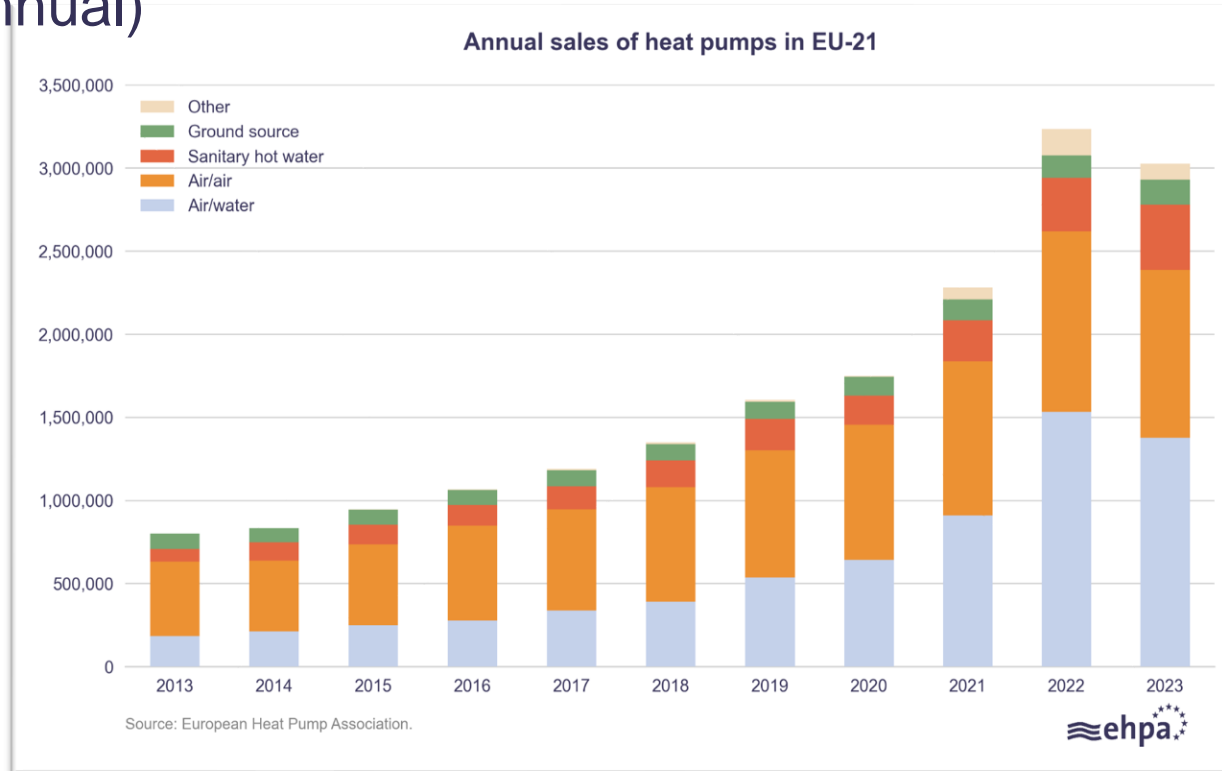
#### **International cooperation with**

Comprehensive Economic Cooperation Agreement (CECA)  
International Energy Agency - Heat Pump Centre (IEA HPC)  
International Renewable Energy Agency (IRENA)  
Heat Pump and Thermal Storage Centre of Japan (HPTCJ)

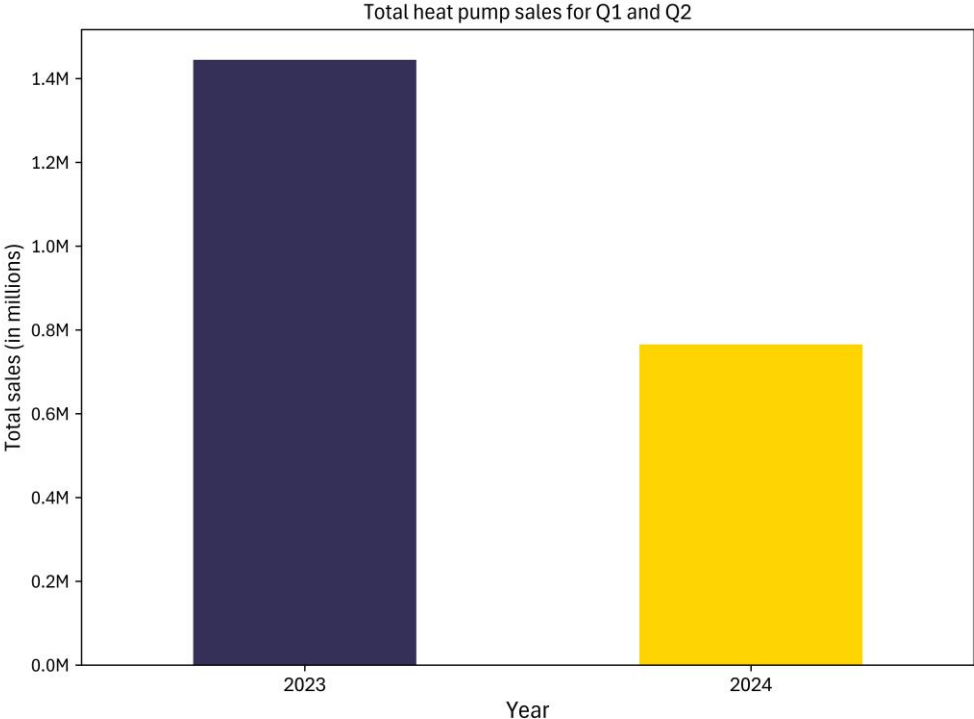
 **ehpa**  
Av. de Cortenbergh  
120, 1000 Bruxelles,  
Belgium



# Heat pump sales in Europe slow down after decade of growth (2023 Annual)



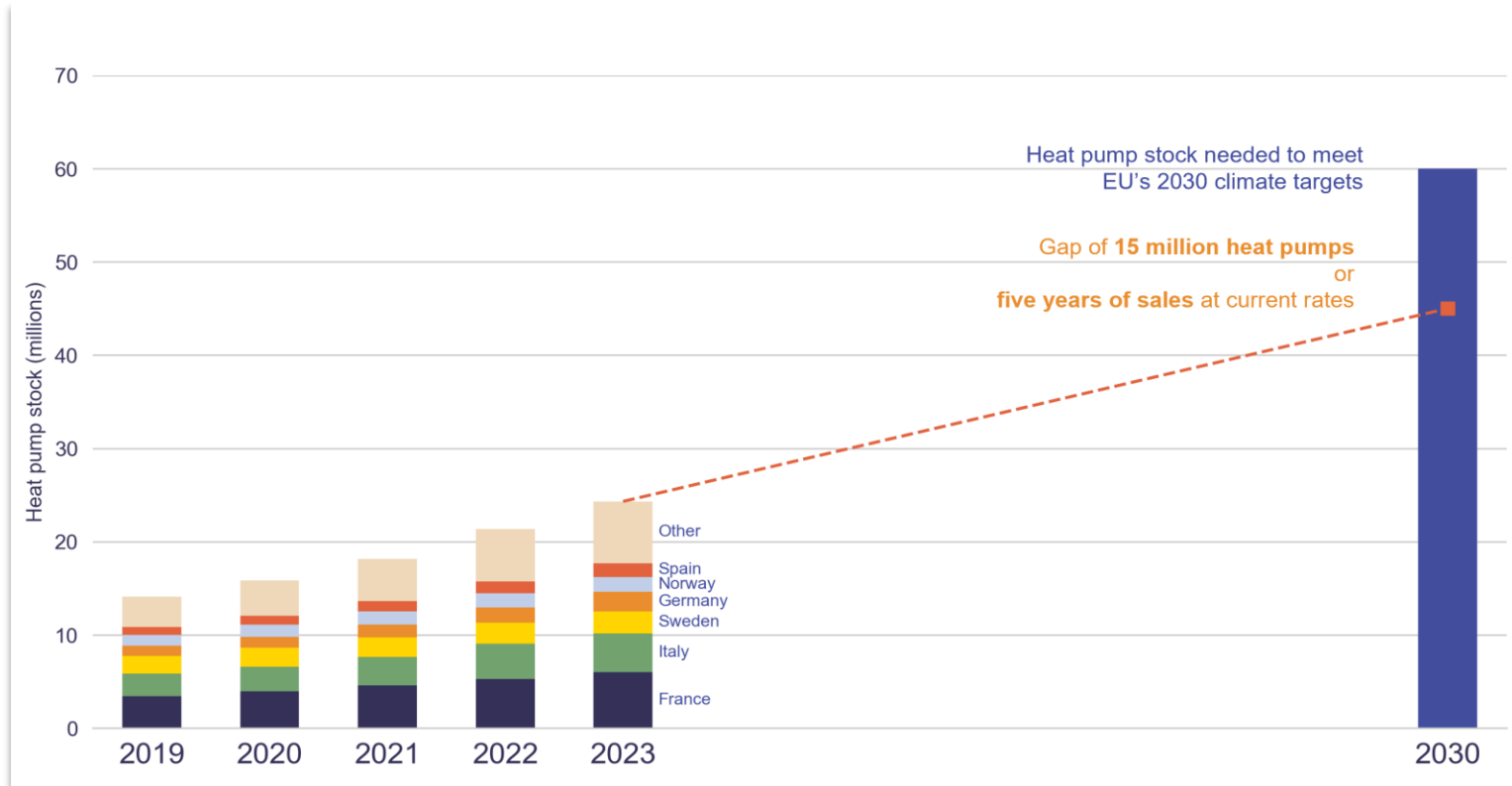
# Heat pump sales in Europe continue to slow down this year (2024 First Half)



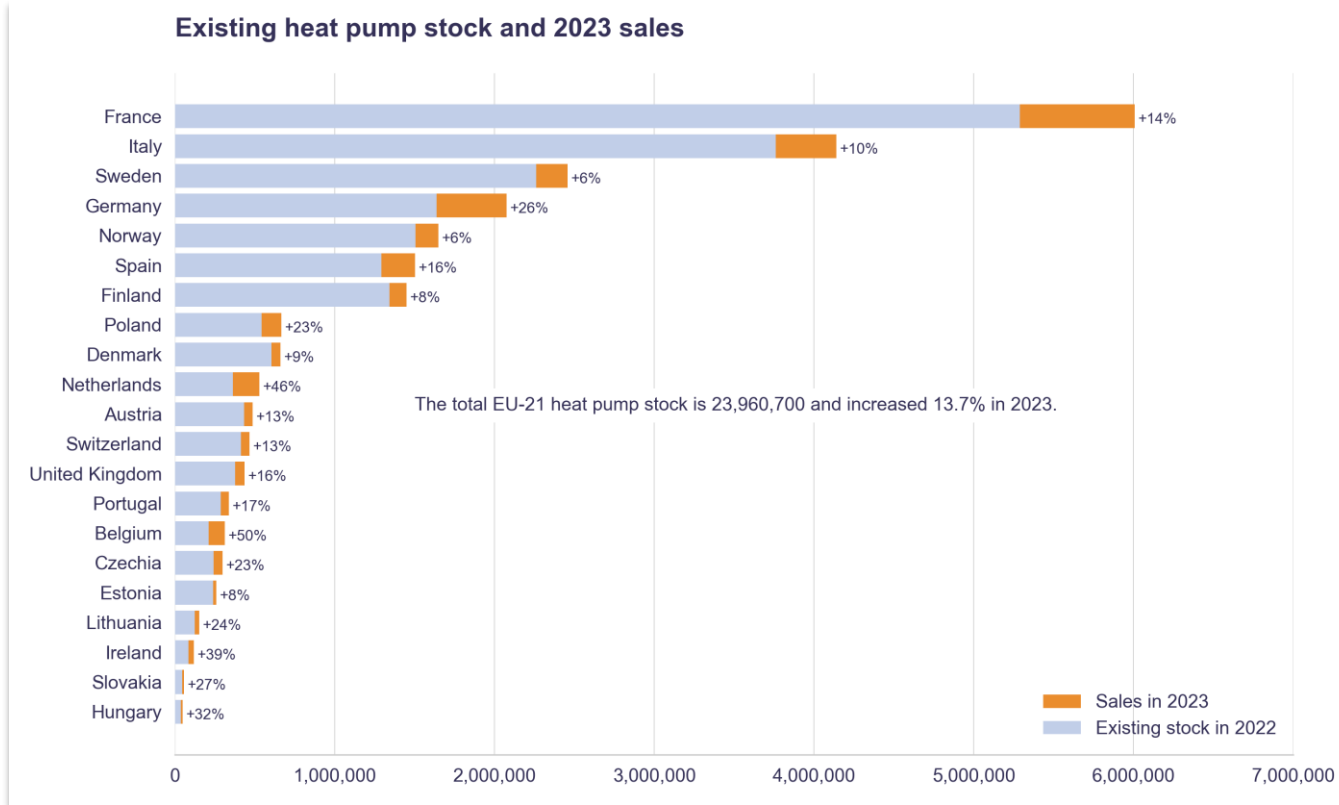
EHPA Preliminary results of H1 2024 sales, comprising Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, Italy, Netherlands, Norway, Portugal, Sweden. Which cohort represented close to 90% of EHPA coverage sales in yearly report for 2023 totals



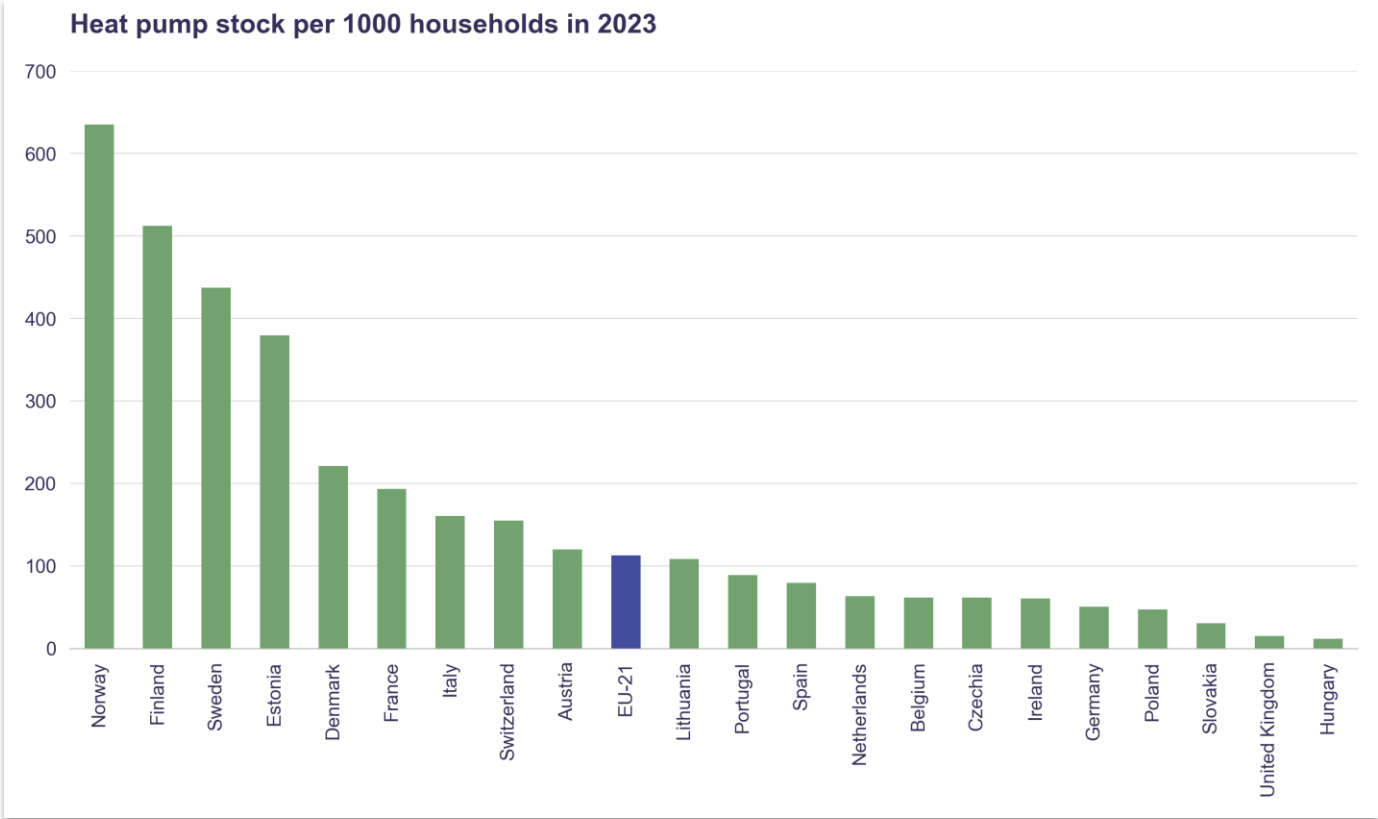
# Missed opportunity to build momentum for a complete shift (?)



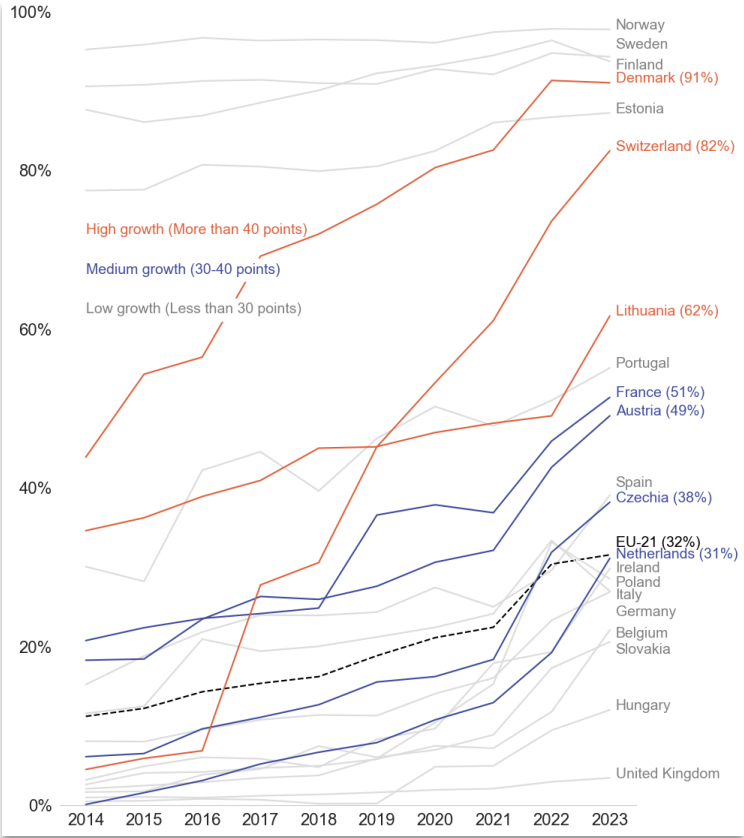
# Larger countries generally represent most sales...



# ... But colder climates are the most mature markets



# Despite market morosity, heat pumps see continuous increase in market shares vs. Gas boilers



# How to create demand?



## Long term policy clarity:

- Clear communication from policy makers
- Clear targets & long term planning



## Affordability:

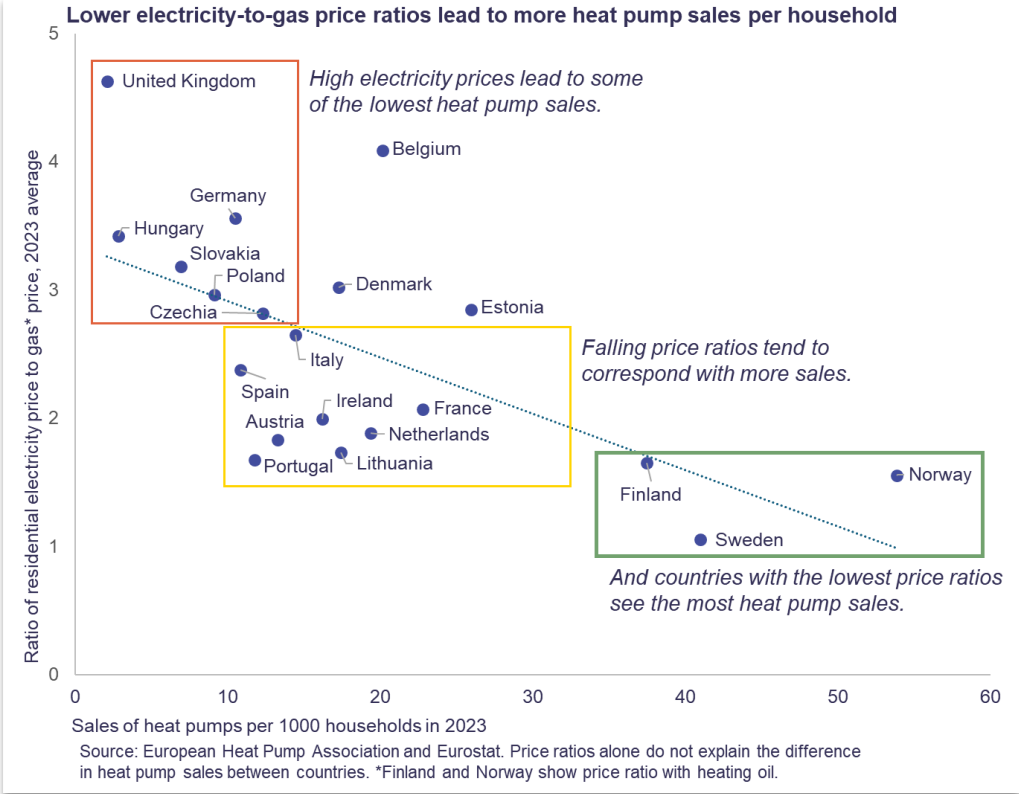
- Opex: electricity to gas price ratio & ETS2 & ETD
- Capex: VAT to 0% & dedicated funding for low income households



## Information & skills:

- Correct info on opportunities and cost savings
- Train installers

# Elec-to-Gas price ratio is key to electrification roll-out



# EHPA Market Intelligence: Strengths, Opportunities & Challenges

## Strengths

- Established relationship between EHPA & National Heat Pump Associations
- Strong and sustained interest in market data from various stakeholders
- Permanent Market Intelligence staff since mid-2024

## Opportunities

- Launch of Industrial & Commercial Heat Pumps market survey, covering the entirety of the technology
- Collect more insights from National Associations:
  - HPs in new build vs. retrofit
  - Collect data from actual usage via connected devices for enhanced in-situ analysis
- Serve as a central hub for market research insights on heat pumps at the European level, servicing policy making better
- Development of a new and improved interactive web platform

## Challenges

- Sales reporting through National Associations varies in format, posing a challenge for standardization / harmonization / data quality
- Incorporation of air-to-air systems in market reports is challenging due to ongoing debates about their role as a primary heating source across geographies
- Collecting data directly from manufacturers across Europe is a complex and intricate process (IChP)

## The Heat Pump Accelerator Platform

The Platform is a dynamic EU-wide initiative that aims to speed up the roll-out of heat pumps in buildings, industry, and district heating.

### Objectives

To identify barriers to the deployment of heat pumps across the EU, and suggest targeted policy measures to address them, the Heat Pump Accelerator Platform will

- bring together heat pump people from across the EU to work together and accelerate heat pump deployment
- create a network dedicated to sustainable heating solutions
- track policies that impact heat pump deployment, especially at national level
- align strategies on energy, industry, research, and education so they all support heat pump deployment
- tackle barriers through the expertise of platform members to identify and solve them



@AdobeStock/AndreasK

### Deliverables on market data:

- Data for 9 additional Member States
- Capacity classification
- Data on commercial and industrial heat pumps
- Data for district heating

# Thanks!

Jozefien Vanbecelaere – [jozefien.vanbecelaere@ehpa.org](mailto:jozefien.vanbecelaere@ehpa.org)  
Guillaume Uguen – [guillaume.uguen@ehpa.org](mailto:guillaume.uguen@ehpa.org)



[@helloheatpumps](https://twitter.com/helloheatpumps)



[European Heat Pump Association](https://www.linkedin.com/company/european-heat-pump-association)



[@EuropeanHeatPumpAssociation](https://www.youtube.com/channel/UC...)



[www.ehpa.org](http://www.ehpa.org)



2025年1月23日

JAN.23. 2025

# 中国热泵市场概况

# CHINA PUMP MARKET OVERVIEW

中国节能协会热泵专业委员会  
China Heat Pump Alliance (CHPA)

**FOR MORE INFORMATION ON THIS PRESENTATION PLEASE CONTACT THE PRESENTER**

# Panel discussion

Eric Devin – Association Française du Froid

Stanislas Quenehen – Ariston Group

Eloi Piel – Euroheat & Power

Souhir Al-Hammami – International Institute of Refrigeration

**Break – we will be back in a few minutes**

# Session II: Turning data into policy recommendations

Moderated by Duncan Gibb, Senior Advisor, Regulatory Assistance Project



23 January 2025

# Policy and data: Two pillars for advancing heat pumps around the globe

IEA Workshop: The importance of heat pump data for policy-making and innovation

Duncan Gibb, Senior Advisor  
dgibb@raponline.org  
Regulatory Assistance Project

# Clean Heat Forum

- Global platform on clean heating policy collaboration.
- Launched at COP26.
- Quarterly meetings with all members and government-only sessions.
- A presence at key global events.
- Situated within the GlobalABC and is a supporting initiative of the Buildings Breakthrough Agenda.



<https://globalabc.org/clean-heat-forum>



# Clean Heat Policy Tracker

- Up-to-date overview of clean heat policies around the world.
- Factsheets that provide governments with best practice in all types of clean heat support policy.
- 2025: developing an overview of clean heat policies around the world.
- Potential to work towards a clean heating pledge.



# Traffic light classification of the heat pump policy mixes of chosen jurisdictions

- Sufficient
- Attention needed
- Significant gap

		Victoria, Australia	Chile	Spain	France	India	Ireland	Vermont, USA
Regulation	Heat planning and zoning	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: yellow;">●</span>	<span style="color: green;">●</span>
	Building codes, appliance standards	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>
Economic and market instruments	Carbon taxation	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: green;">●</span>	<span style="color: red;">●</span>	<span style="color: green;">●</span>	<span style="color: red;">●</span>
	Taxes and levies (pricing)	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>
	Obligations and portfolio standards	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: green;">●</span>	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: yellow;">●</span>	<span style="color: green;">●</span>
Financial Support	Grant and tax rebates	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>	<span style="color: red;">●</span>	<span style="color: yellow;">●</span>	<span style="color: green;">●</span>
	Loans	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: green;">●</span>	<span style="color: yellow;">●</span>	<span style="color: green;">●</span>	<span style="color: green;">●</span>
	Heat as a service	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>
Communications and coordination	Communication	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: green;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: green;">●</span>
	Installer training and certification	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: yellow;">●</span>	<span style="color: red;">●</span>	<span style="color: yellow;">●</span>	<span style="color: yellow;">●</span>
Broad equity support	Low-income support	<span style="color: yellow;">●</span>	<span style="color: green;">●</span>	<span style="color: red;">●</span>	<span style="color: green;">●</span>	<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: yellow;">●</span>

# Stand-out gaps in heat pump data

## Most glaring



**Cost:** Equipment and installation.



**Market:** Harmonized data on all types of heat pumps, air-to-air heat pumps for heating, industrial heat pumps, fossil fuel heating appliance sales.



**Heating demand:** How much energy is used for space heating and water heating? How can this be collected in real time and without relying on consumption surveys?

## Nice-to-have

**Real-world performance of heat pumps:** COP at various outside temperatures and seasonal COP.

**Installations of heat pumps:** Existing vs. new buildings.

**Fossil fuel replacement:** gas grid disconnections, heating oil tank removal, etc.



# About RAP

Regulatory Assistance Project (RAP)<sup>®</sup> is an independent, global NGO advancing policy innovation and thought leadership within the energy community.

Learn more about our work at [raponline.org](https://raponline.org)

Duncan Gibb

[dgibb@raponline.org](mailto:dgibb@raponline.org)



"© European Union, 1995-2025  
The Commission's reuse policy is  
implemented by the [Commission Decision of  
12 December 2011 on the reuse of  
Commission documents](#).

**Delivering on the European  
Green Deal and Fit for 55**

# **IEA Workshop – HP data & Policy making**

## **Perspectives from the European Union**

*Disclaimer*

*The information and views expressed in this presentation do not necessarily reflect the official position of the European Commission.*

European Commission – DG  
ENERGY  
Philippe Riviere, Unit B3 -  
Buildings and Products

# Official heat pump statistics in the EU

- Renewable Energy Directive (RED): contribution of « ambient heat »?
- Development of a common methodology for Member States to assess « ambient » heat
- 2013: Commission decision 2013/114/EU -> « ambient heat for RED »
- 2017: « ambient heat for energy balance »
  - Slight difference: while RED only includes efficient heat pumps (above a certain SPF threshold), energy balances includes all heat pumps

## Disclaimer

The information and views expressed in this presentation do not necessarily reflect the official position of the European Commission.

# Outline of RED methodology

## Calculation of the quantity of ambient energy

Renewable energy supplied by heat pumps ( $E_{RES}$ )

$$E_{RES} = Q_{usable} * (1 - 1/SPF)$$

$$Q_{usable} = H_{HP} * P_{rated}$$

Where:

- $Q_{usable}$  = the estimated total useful heat delivered by heat pumps [GWh]
- $H_{HP}$  = equivalent full load hours of operation [h]
- $P_{rated}$  = capacity of heat pumps installed [GW]
- SPF = the estimated average seasonal performance factor

Default values for  $H_{HP}$  and SPF ( $SCOP_{HP}$ ) for electrically driven heat pumps

## Default values

Heat Pump Energy source:	Energy source and distribution medium	Climate conditions					
		Warmer climate		Average climate		Colder climate	
		$H_{HP}$	SPF ( $SCOP_{HP}$ )	$H_{HP}$	SPF ( $SCOP_{HP}$ )	$H_{HP}$	SPF ( $SCOP_{HP}$ )
Aerothermal energy	Air-Air	1 200	2,7	1 770	2,6	1 970	2,5
	Air-Water	1 170	2,7	1 640	2,6	1 710	2,5
	Air-Air (reversible)	120 ◀	2,7	710	2,6	1 970	2,5
	Air-Water (reversible)	120 ◀	2,7	660	2,6	1 710	2,5
	Exhaust Air-Air	760	2,7	660	2,6	600	2,5
	Exhaust Air-Water	760	2,7	660	2,6	600	2,5
Geothermal energy	Ground-Air	1 340	3,2	2 070	3,2	2 470	3,2
	Ground-Water	1 340	3,5	2 070	3,5	2 470	3,5
Hydrothermal heat	Water-Air	1 340	3,2	2 070	3,2	2 470	3,2
	Water-Water	1 340	3,5	2 070	3,5	2 470	3,5

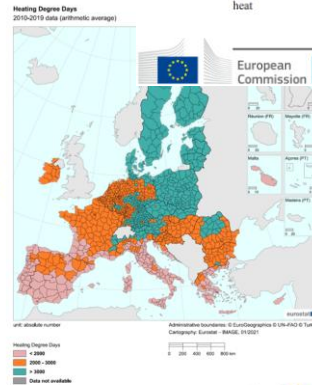
18

eurostat 

### Climate zones:

- Warmer climate
- Average climate
- Colder climate

Map extracted from [SHARES tool Manual](#)



19

eurostat 

20

eurostat 

# Raw data

**TABLE 3b. TECHNICAL CHARACTERISTICS OF HEAT PUMPS INSTALLATIONS AT THE**

END OF THE YEAR				
Country	Menu			
2022				
NET MAXIMUM CAPACITY				
CLASSIFICATION BY TECHNOLOGY		Thermal Capacity (MWh)	Average SPF	Average time usage (hours)
Total	1	0.000	0.000	0.000
Aerothermal	2	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	3	0.000	0.000	0.000
Air-Air	4	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	5	0.000	0.000	0.000
Air-Water	6	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	7	0.000	0.000	0.000
Air-Air (reversible)	8	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	9	0.000	0.000	0.000
Air-Water (reversible)	10	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	11	0.000	0.000	0.000
Exhaust Air-Air	12	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	13	0.000	0.000	0.000
Exhaust Air-Water	14	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	15	0.000	0.000	0.000
Geothermal energy	16	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	17	0.000	0.000	0.000
Ground-Air	18	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	19	0.000	0.000	0.000
Ground-Water	20	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	21	0.000	0.000	0.000
Hydrothermal heat	22	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	23	0.000	0.000	0.000
Water-Air	24	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	25	0.000	0.000	0.000
Water-Water	26	0.000	0.000	0.000
of which from heat pumps with SPF above the threshold	27	0.000	0.000	0.000

© European Union, 1995-2025  
 The Commission's reuse policy is implemented by the [Commission Decision of 12 December 2011 on the reuse of Commission documents](#).

Renewables and wastes questionnaire  
 Table 3b. Infrastructure for heat pumps

[https://doi.org/10.2908/NRG\\_INF\\_HPTC](https://doi.org/10.2908/NRG_INF_HPTC)

More input and less default values in the recent years, especially for SPF

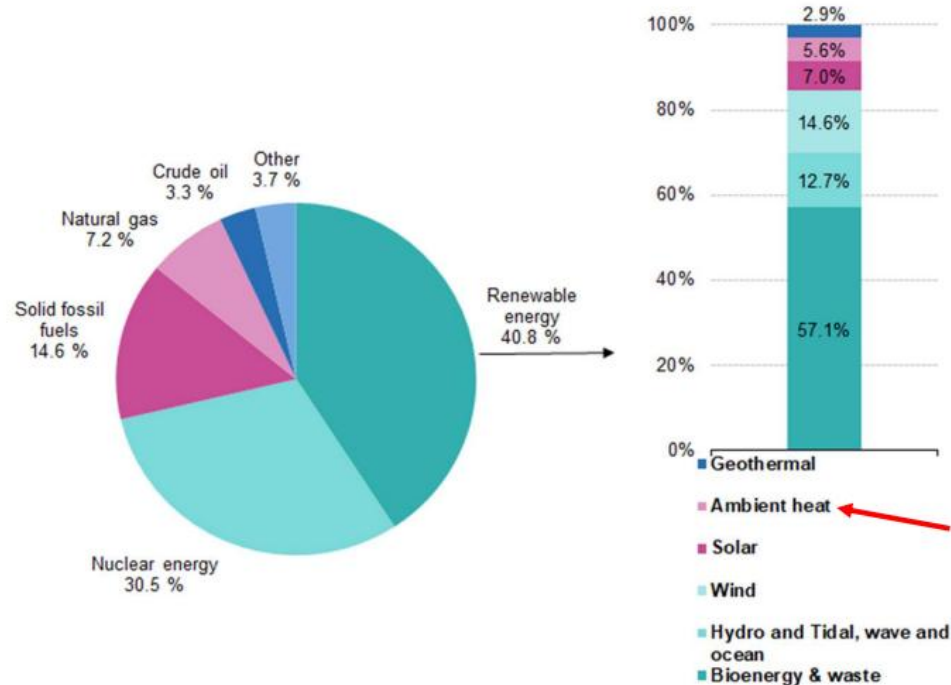
*Disclaimer*

The information and views expressed in this presentation do not necessarily reflect the official position of the European Commission.



# Share of ambient heat, energy balance

Production of primary energy, EU 2020

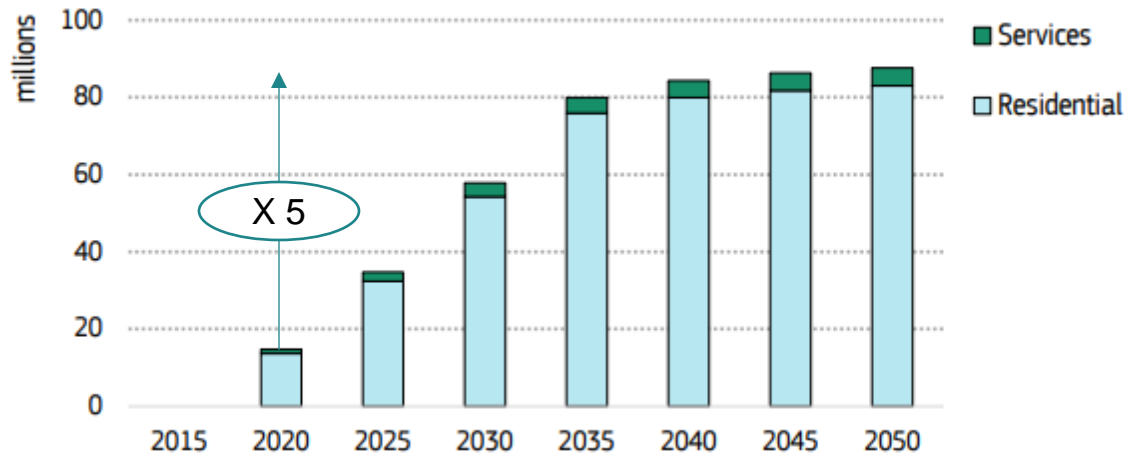


*Disclaimer*

The information and views expressed in this presentation do not necessarily reflect the official position of the European Commission.

# EU scenario 2040 climate target

**Figure 44: Stock of heat pumps in the residential and services sector, 2015-2050**



Source: PRIMES.

*Heat pumps are central to the reach climate target in the building sector in the EU, strong growth planned.*

**Disclaimer**

The information and views expressed in this presentation do not necessarily reflect the official position of the European Commission.

# Alternative data sources

*More information required for various policies!*

- Prodcum / Trade statistics  
(category definitions seldom match needs)
- Product information - > EPREL  
(not linked to sales)
- Manufacturer associations
- Buying private data collection
- HP data monitoring  
(today for large systems, tomorrow?)

Regulation 626/2011 labelling air conditioners  
EPREL <https://eprel.ec.europa.eu/>  
A/A heat pumps below 12 kW

Energy Efficiency Class	SCOP
A+++	SCOP ≥ 5,10
A++	4,60 ≤ SCOP < 5,10
A+	4,00 ≤ SCOP < 4,60
A	3,40 ≤ SCOP < 4,00
B	3,10 ≤ SCOP < 3,40
C	2,80 ≤ SCOP < 3,10
D	2,50 ≤ SCOP < 2,80

Average 22 251 models			Colder 7 616 models			Warmer 13 833 models		
Class	Entries	%	Class	Entries	%	Class	Entries	%
A+++	654	2,9	A+++	11	0,1	A+++	9 120	65,9
A++	2 713	12,2	A++	5	0,1	A++	3 782	27,3
A+	15 623	70,2	A+	144	1,9	A+	606	4,4
A	3 257	14,6	A	709	9,3	A	322	2,3
B	4	0,0	B	777	10,2	B	2	0,0
C	0	0,0	C	5 931	77,9	C	1	0,0
D	0	0,0	D	39	0,5	D	0	0,0

**EU Ecodesign & Energy Label program**

[https://energy-efficient-products.ec.europa.eu/index\\_en](https://energy-efficient-products.ec.europa.eu/index_en)

**EU HEAT pump page**

[https://energy.ec.europa.eu/topics/energy-efficiency/heat-pumps\\_en](https://energy.ec.europa.eu/topics/energy-efficiency/heat-pumps_en)

[Contact: philippe.riviere@ec.europa.eu](mailto:philippe.riviere@ec.europa.eu)

Thank you!

# Panel discussion

Justin Tamasauskas – Natural Resources Canada

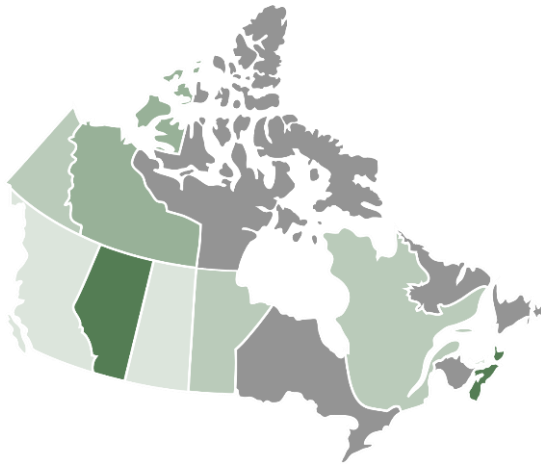
Fernando Díaz Alonso – Eurostat

Takahiro Asahi – Daikin Industries

Pengcheng Li – China National Institute of Standardization

Federica Sabbati – European Heating Industry

# Canada: What data is needed?



## Canadian Context

Heating-Dominated: Mild to very cold winters

Regional Variation:

- Climate (mild to arctic)
- Energy markets (\$ NG vs. elec)

Data needs:



## Present Perf. at Common Conditions

Not all HPs have same cold climate capabilities  
Canada: Adding 5°F (-15°C) reporting for ASHPs



## Reflect Regional Perf. Variations

HPs do not perform the same across Canada  
CSA C700: In development, load-based

- Reflect in-field perf., new tech., regional perf.



## Capture Elec. Demand Implications

Elec. load critical for widespread adoption  
A growing need for future policy/planning

# Session III: Data beyond deployment

Moderated by Ezilda Costanzo, Senior Researcher, ENEA

# Panel discussion

York Ostermeyer – ChillServices

Johan Carlsson – Joint Research Center

Laurens Rutten – BEUC

Caroline Haglund Stignor – HPT TCP

Helmut Strasser – Cities TCP

Andrej Jentsch – DHC TCP

# Closing remarks