

# Heat pumps in figures: 2021 EU market and global outlook

Online seminar

12 July 2022 | 10:00 - 11:30 (CEST)



# Meet our speakers



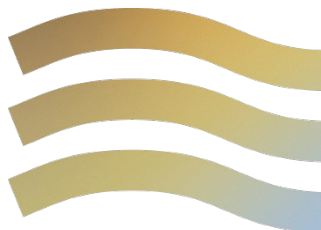
Rana Adib  
Executive Director  
REN21



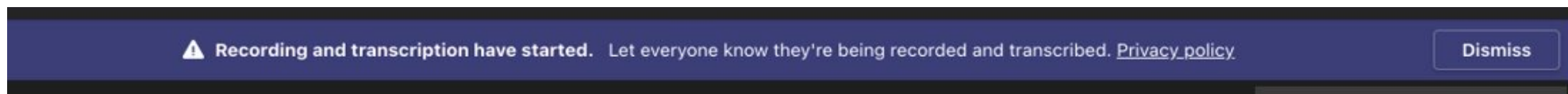
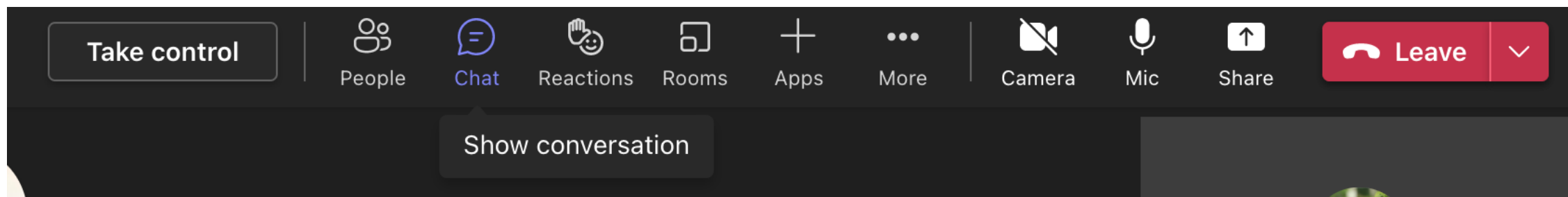
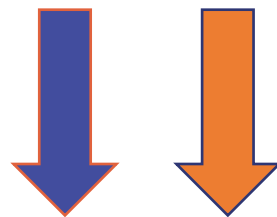
Thomas Nowak  
Secretary General  
European Heat Pump Association



Jozefien Vanbecelaere  
Head of EU Affairs  
European Heat Pump Association



# Asking questions



# The global outlook



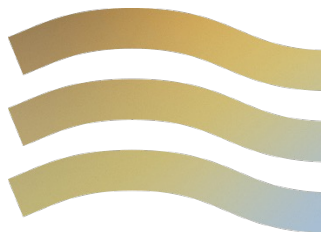
**Rana Adib**  
**Executive Director**  
**REN21**



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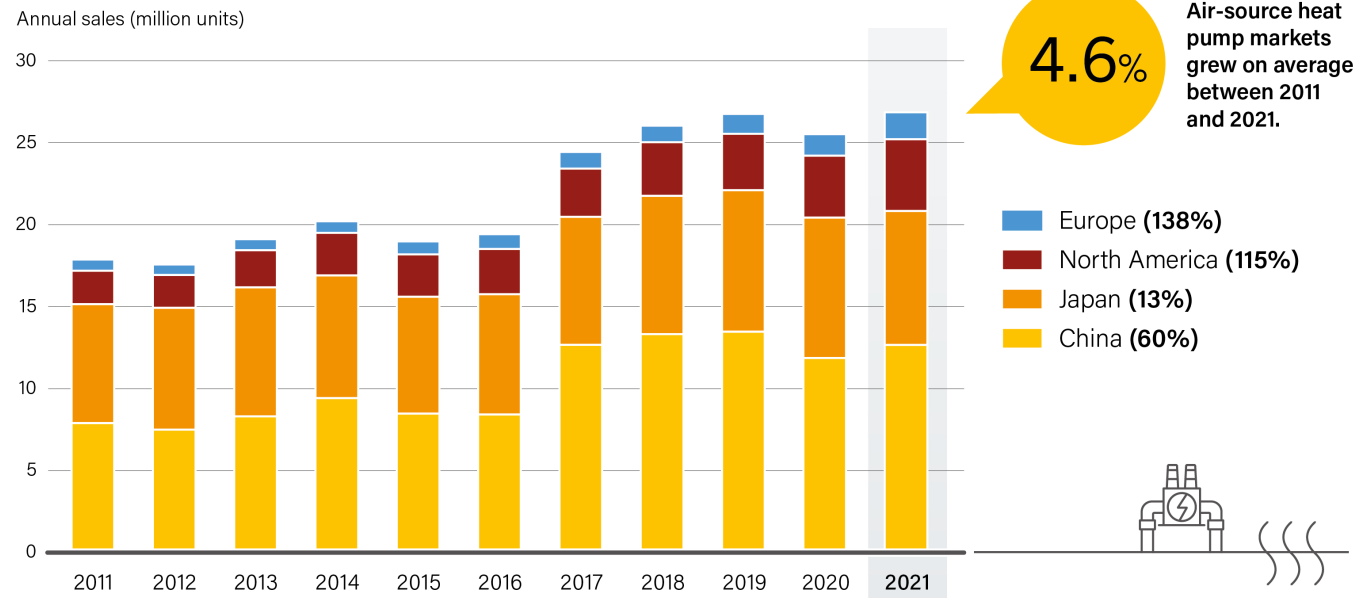
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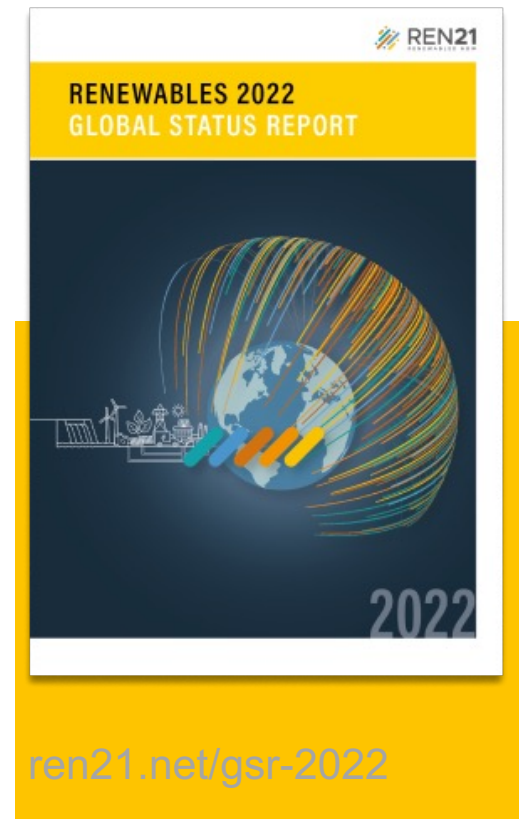
# The role of heat pumps in the energy transition

- Global heat pump markets

 **Air-Source Heat Pump Annual Sales, Selected Markets, 2011-2021**



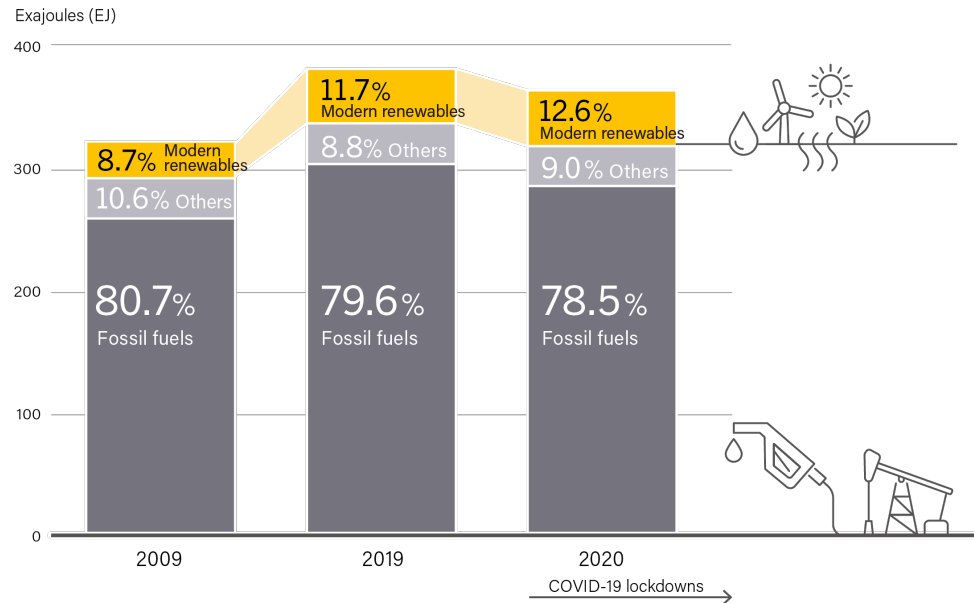
Source: China total from ChinaIOL. Europe total from EHPA.  
 Note: For China, data for 2011-2013 do not include air-water heat pumps.



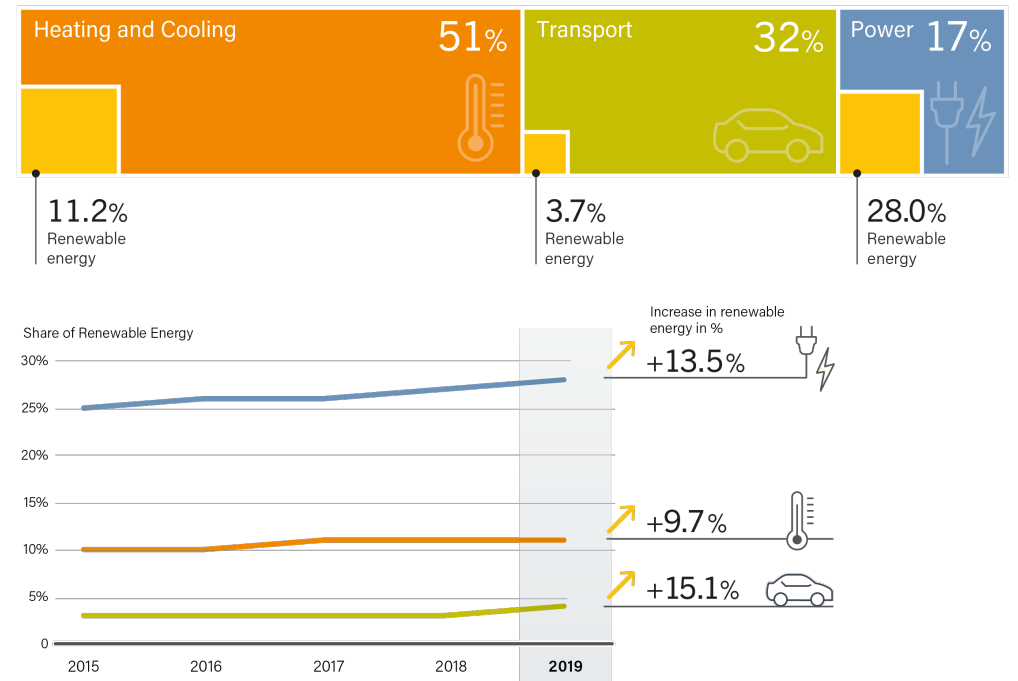
# The energy transition is not happening

- Deep structural transformations needed

**Share of Modern Renewable Energy**  
2009, 2019 and 2020



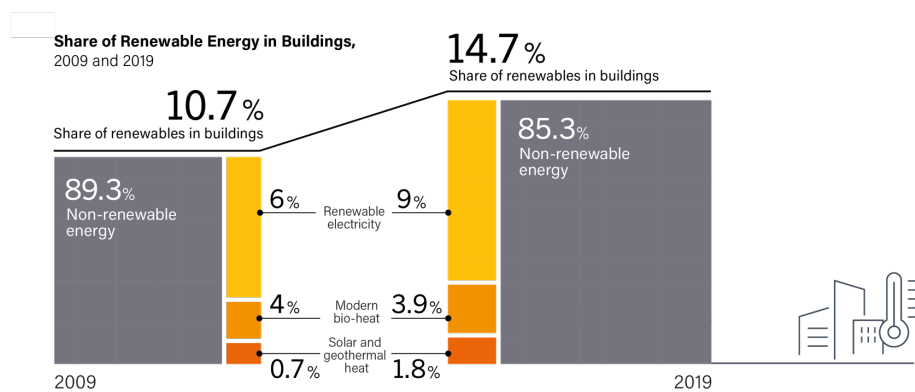
**Renewable Energy in Total Final Energy Consumption, by Final Energy Use, 2019**



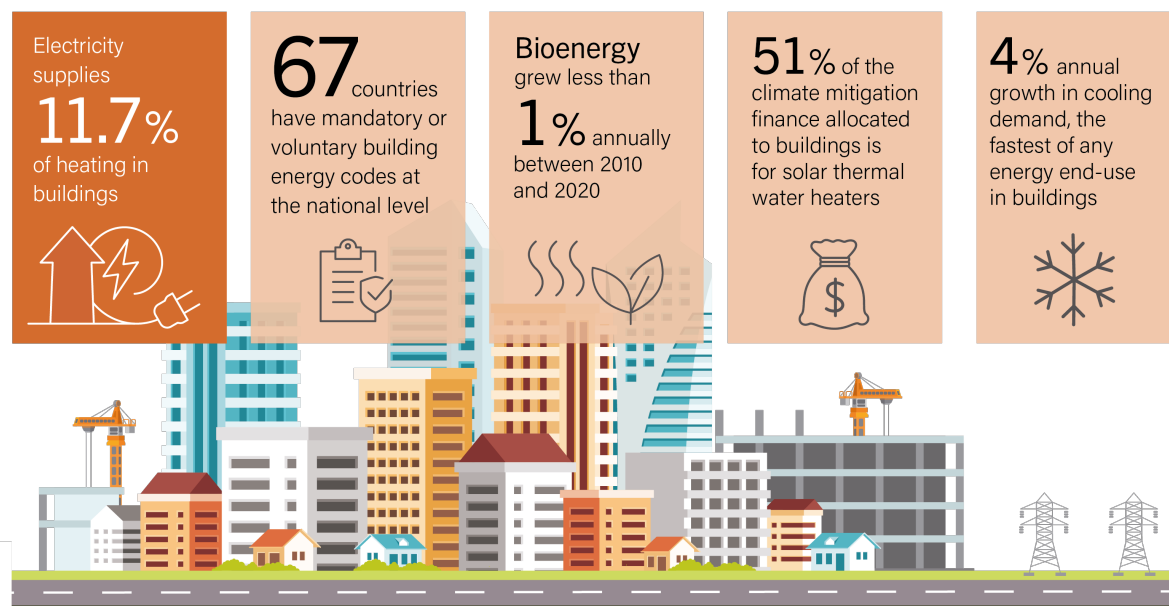
# Renewable Energy in the building sector

- More policies needed for Energy saving, Efficiency and renewables

## Renewables in Buildings



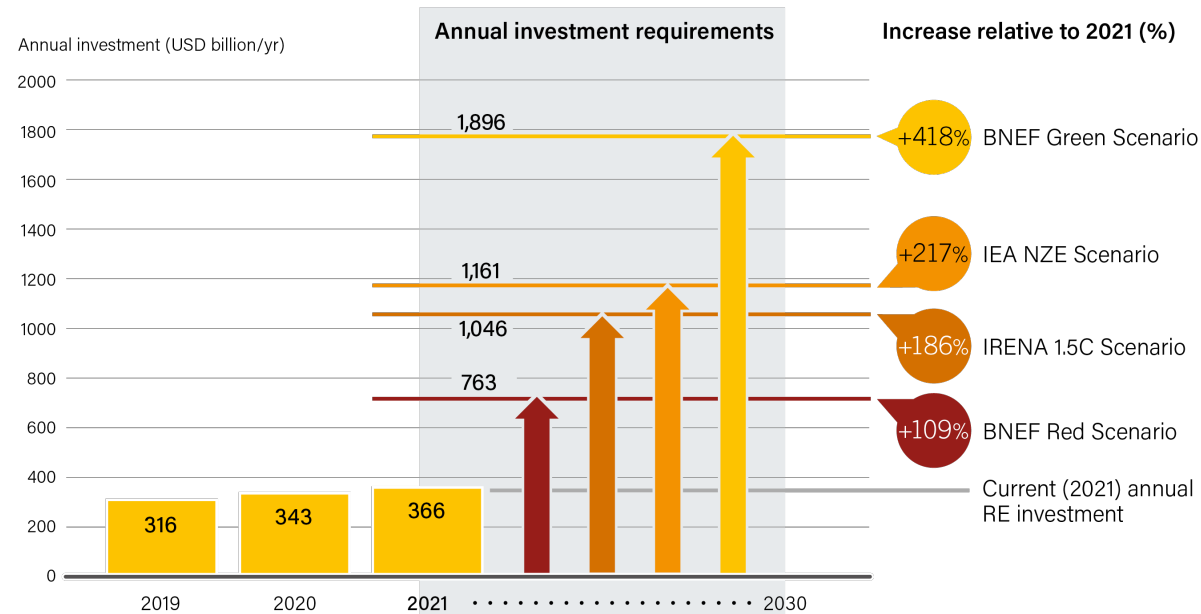
## Renewables in Buildings



# Where do we put our money?

- USD 1.9 trillion versus USD 5.9 trillion

## Range of Annual Renewable Energy Investment Needed in Climate Change Mitigation Scenarios Compared Against Recent Investments



Note: These scenarios quantify renewable energy differently than the BloombergNEF historical basis used in this chapter. The BloombergNEF scenario estimates here include only investment needed in wind power and solar PV, while the International Energy Agency and International Renewable Energy Agency estimates include only investment needed in renewable power technologies.

Source: Based on BloombergNEF and CPI.

### Fossil fuel subsidies

In 2020, USD 5.9 trillion spent for fossil fuel subsidies, 7% of the global GDP



# 2021 European heat pump data



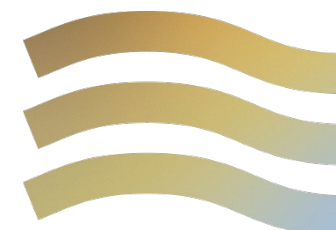
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# Heat pumps are mature and used everywhere - today



White goods &  
cars

Commercial  
Applications



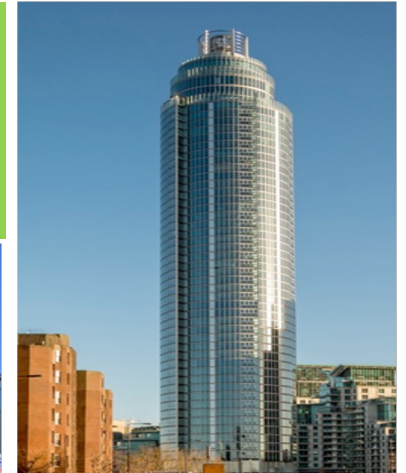
Residential  
Applications



Industrial  
Applications &  
District Heating

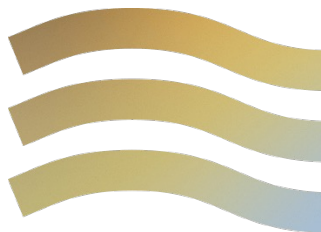


Big  
buildings



# A few comments on procedure

- 21 Markets covered: AT BE CH CZ DE DK EE ES FI FR HU IE IT LT NL NO PL PT SE SK UK
- Data is collected by national heat pump associations
- Data collection is based on a joint questionnaire
- Categories counted
  - Air-air used for heating
  - VRF system
  - Air-water, water-water and ground-water used for heating
  - Sanitary hot water units
- Calculation of renewables contribution according to EU methodology, energy savings according to EHPA assumptions: <https://stats.ehpa.org/home/annex/>
- Comparison against EU heater market:
  - about 7 million units sold per year
  - 115 – 120 million residential and commercial buildings

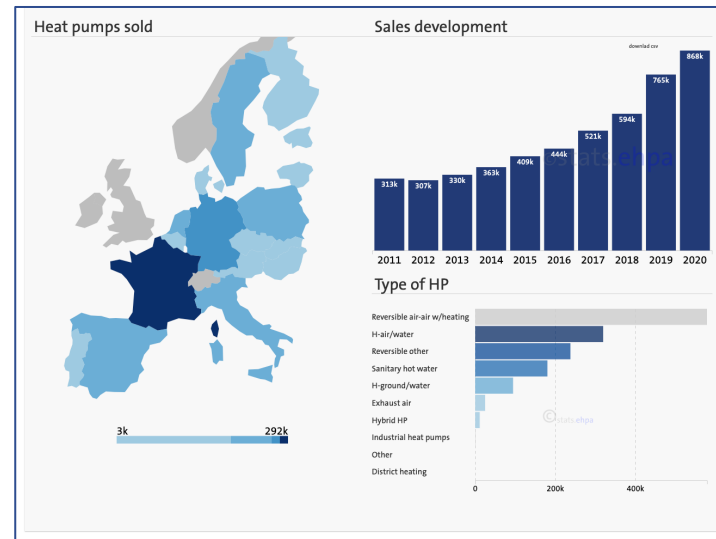




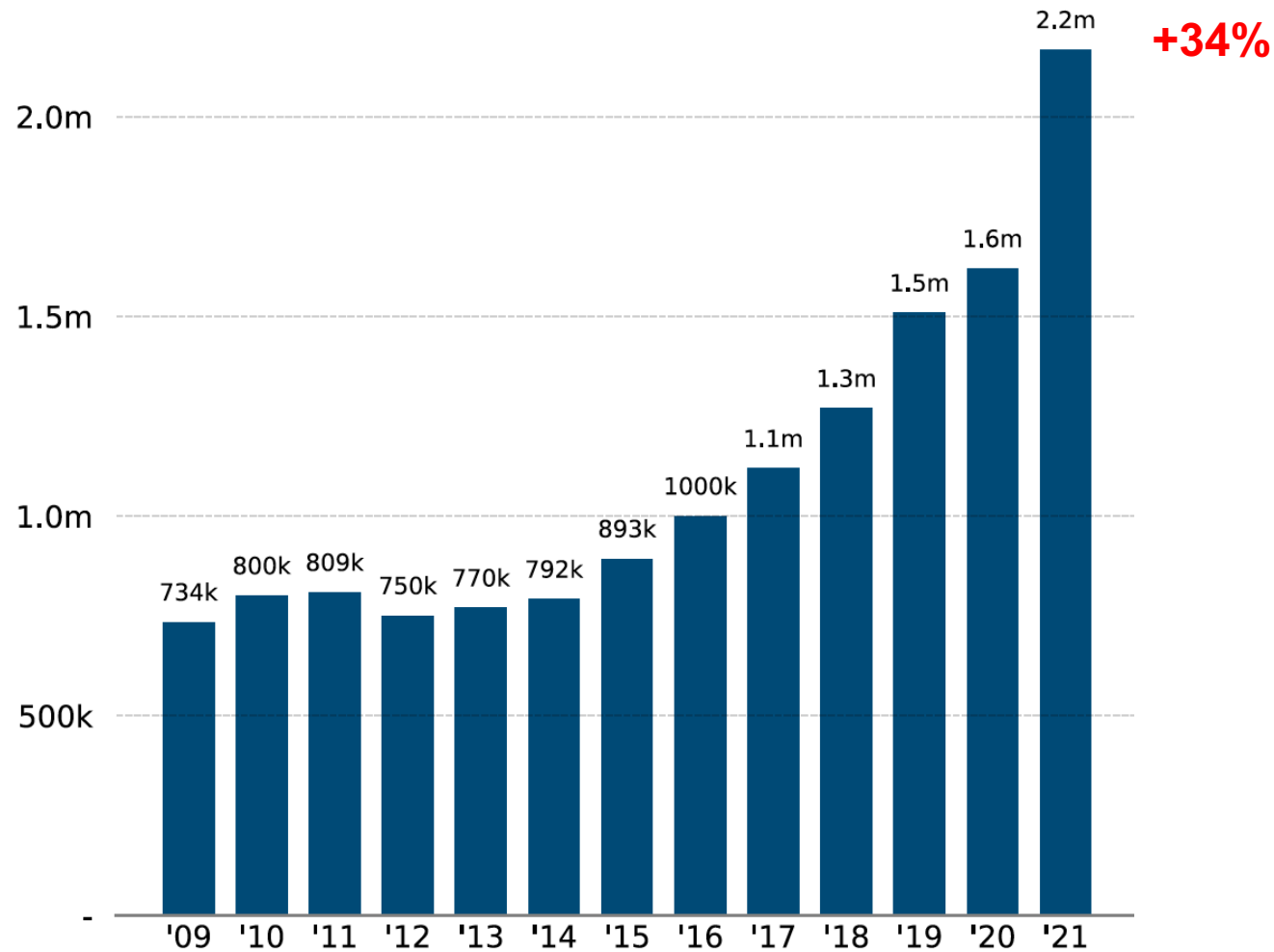
## European Heat Pump Market and Statistics Report 2022



- 21 countries covered
- An online tool for dynamic evaluation [stats.ehpa.org](https://stats.ehpa.org)

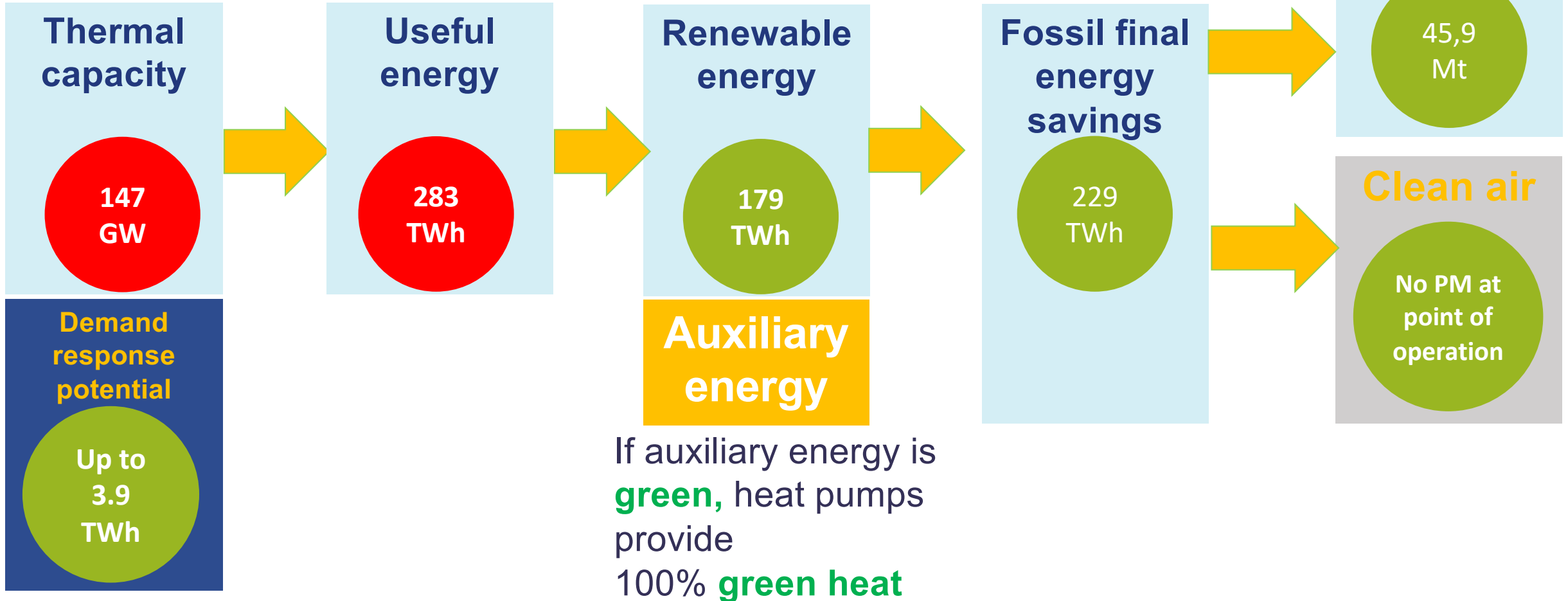


# Heat pump sales in 21 European markets 2.2 million units

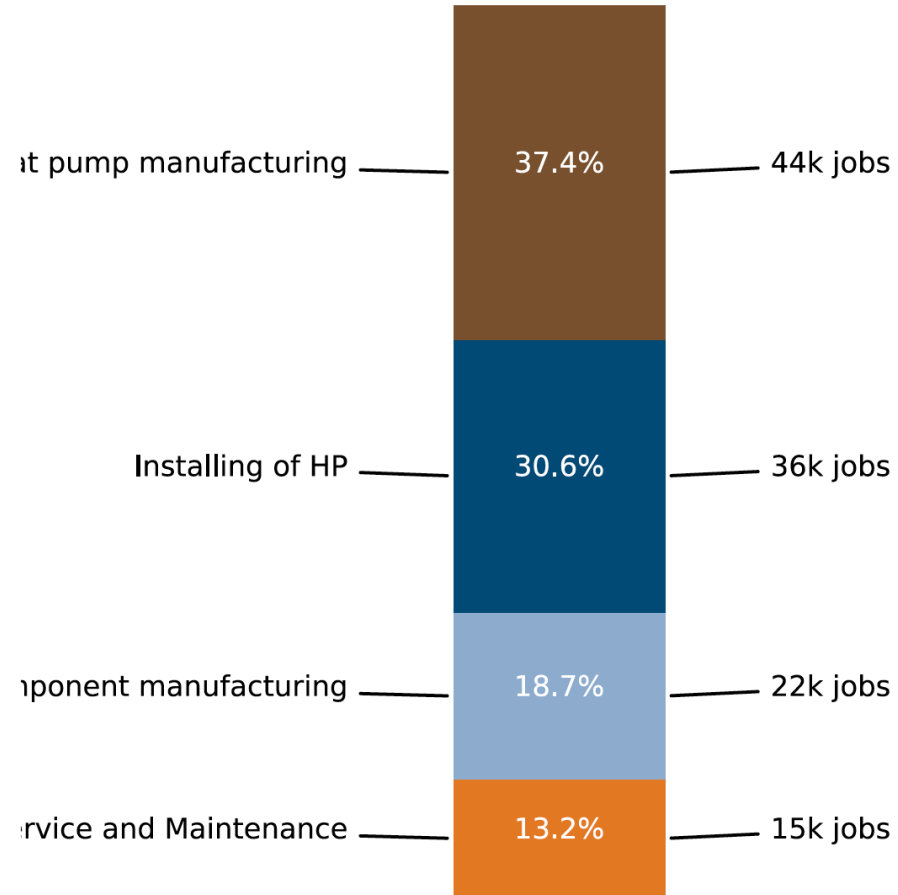


# Heat pump benefits 2021

Based on 17 million heat pumps installed



# Employment impact of heat pumps (116 679FTE)



# Heat pump manufacturing happens across Europe

- 170+ sites
- SME based
- Often located in rural/remote areas
- Turnover of 14.5 billion €  
(of which about 1.7 billion € VAT)

➔ Jobs

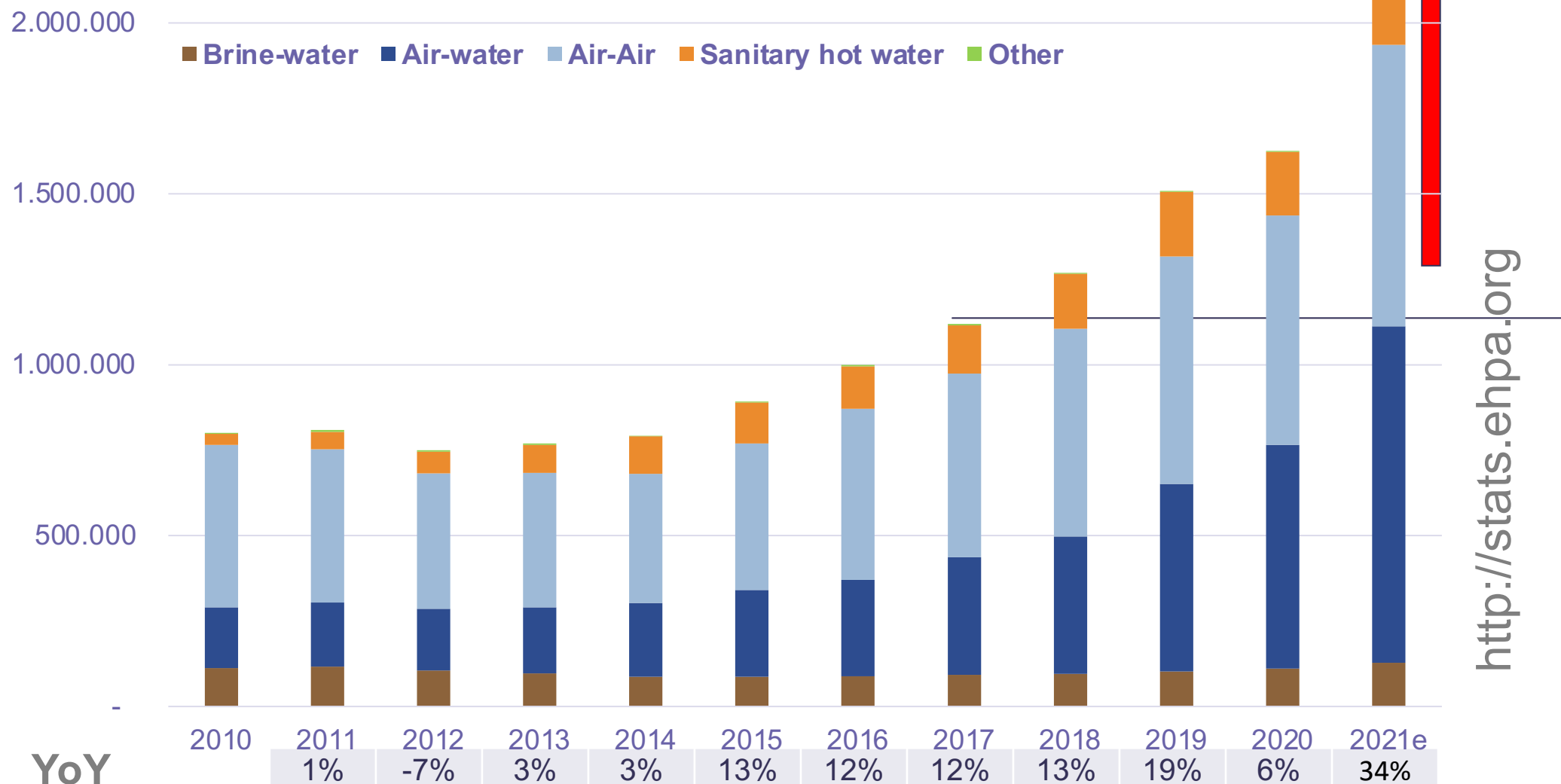
➔ Export potential

➔ Perspective



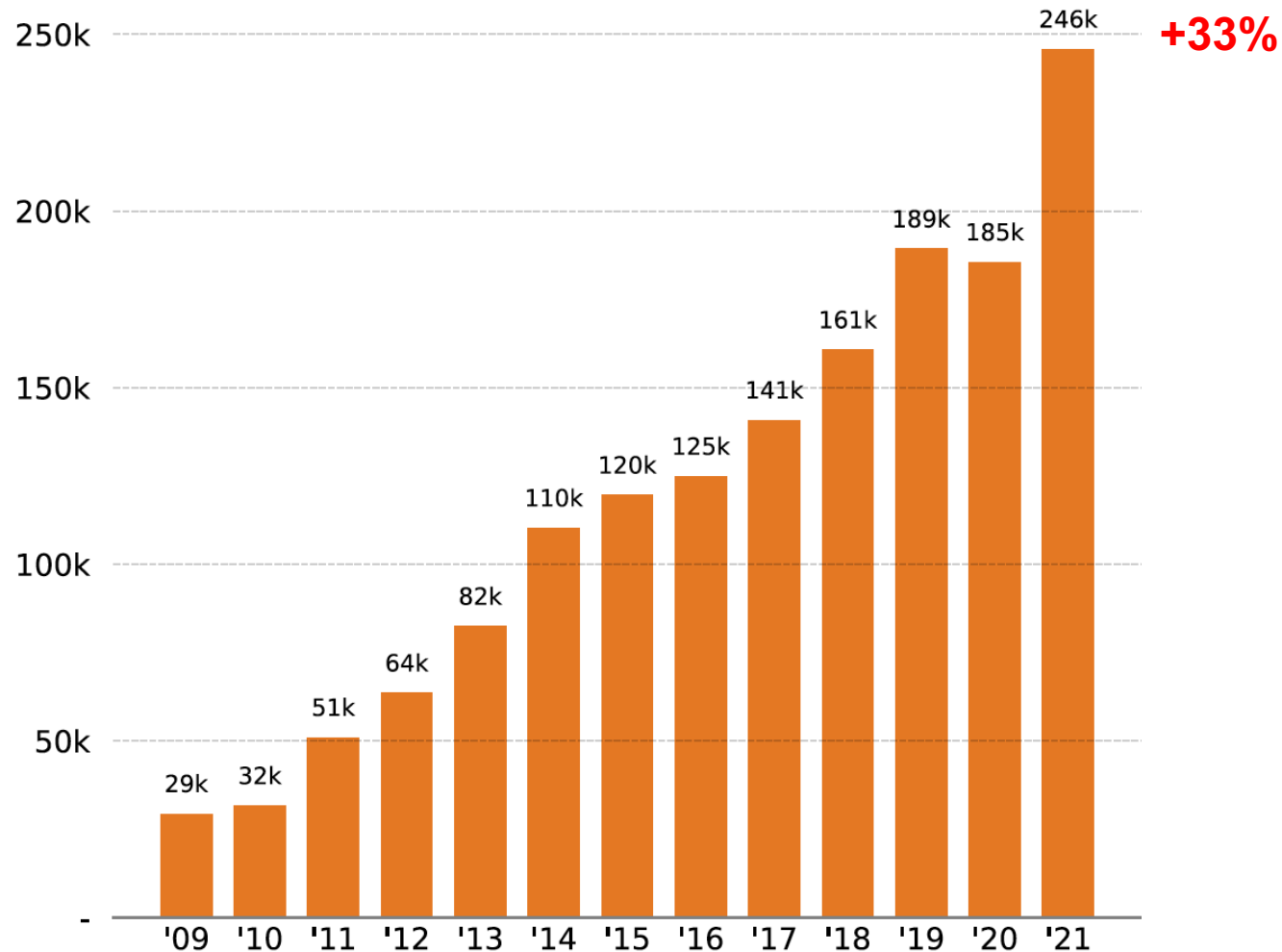


# Market growth '10 – '21 | HP stock<sup>2021</sup>: 17 mill. installed



<http://stats.ehpa.org>

# Sales of sanitary hot water heat pumps 2008 - 2021

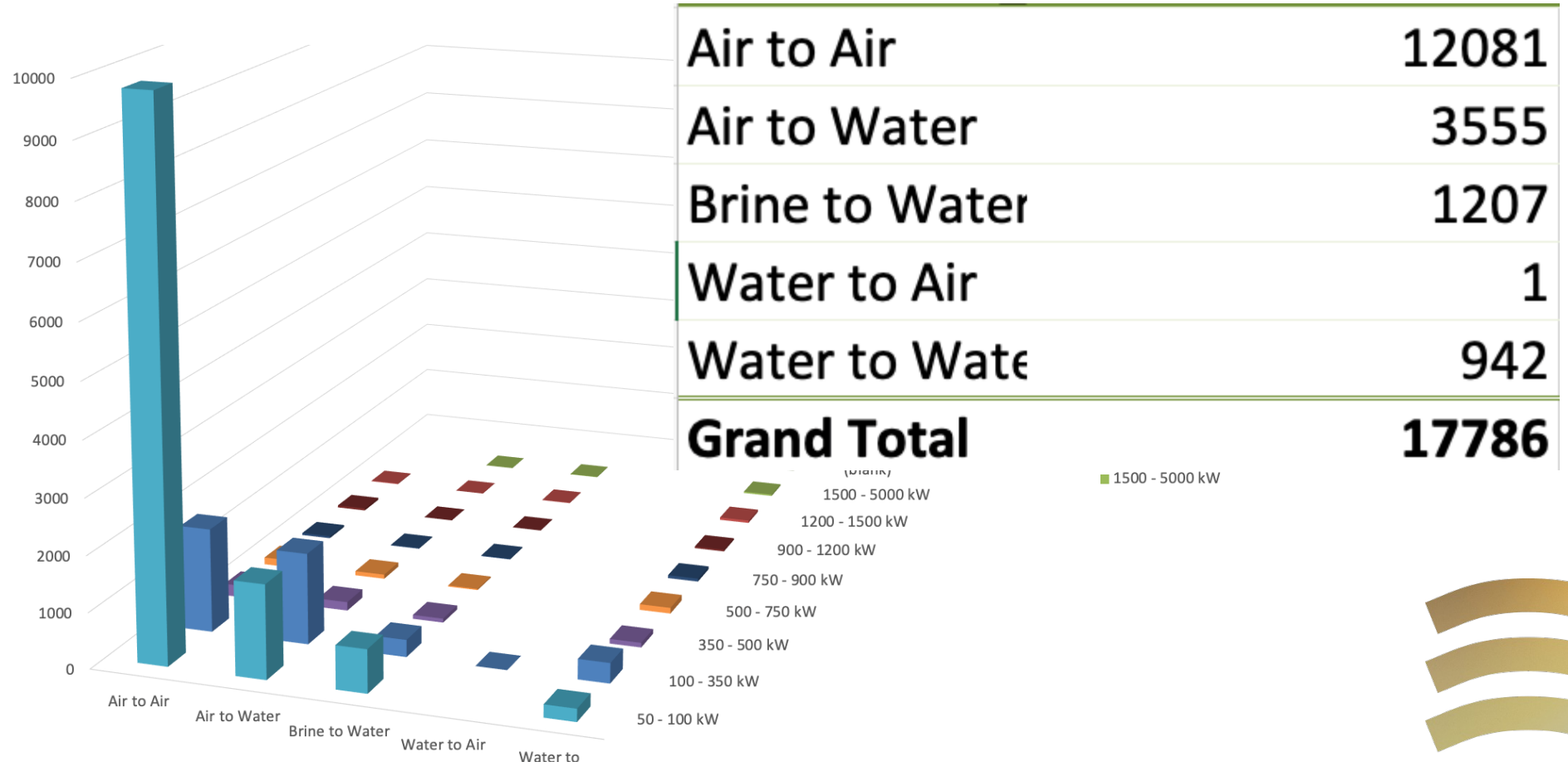


A great entry  
solution,  
immediate  
savings

More research needed

# Excursion: Industrial HP?

## Numbers not integrated with the rest of statistics



| 50 - 100 kW | 100 - 350 kW | 350 - 500 kW | 500 - 750 kW | 750 - 900 kW | 900 - 1200 kW | 1200 - 1500 kW | 1500 - 5000 kW |
|-------------|--------------|--------------|--------------|--------------|---------------|----------------|----------------|
| 12472       | 4158         | 525          | 334          | 119          | 75            | 66             | 36             |

<http://stats.ehpa.org> | Data for 2019

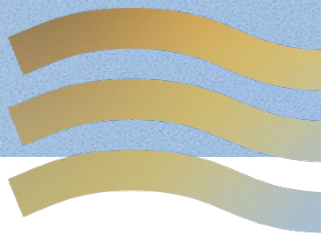


# 2021

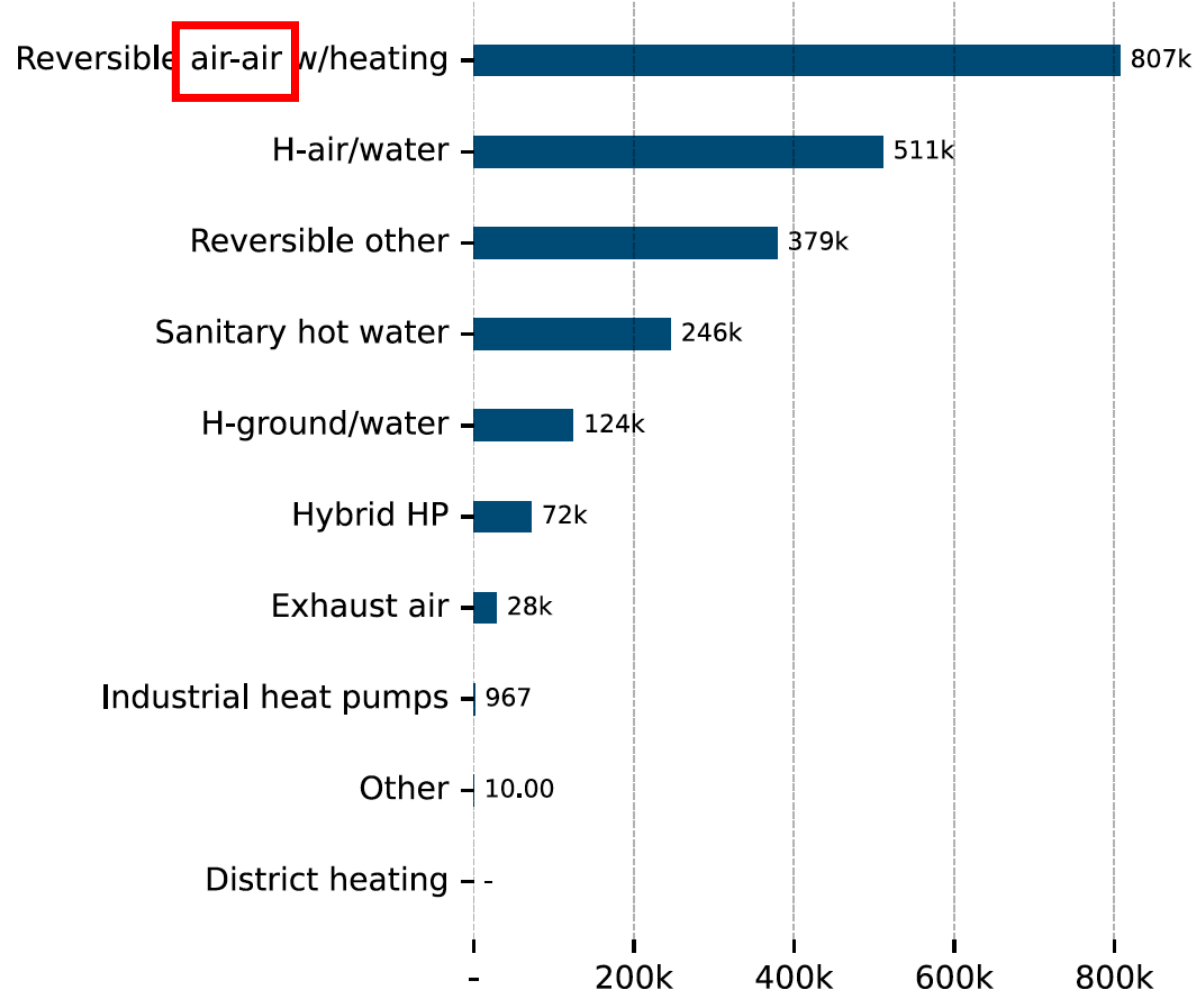
## Heating heat pump market share **approx. 13%**

### Basis

- An **EU-28 building stock** of 115 – 120 mill. Buildings (residential and commercial)
- A stock of 15.3 million heating heat pumps



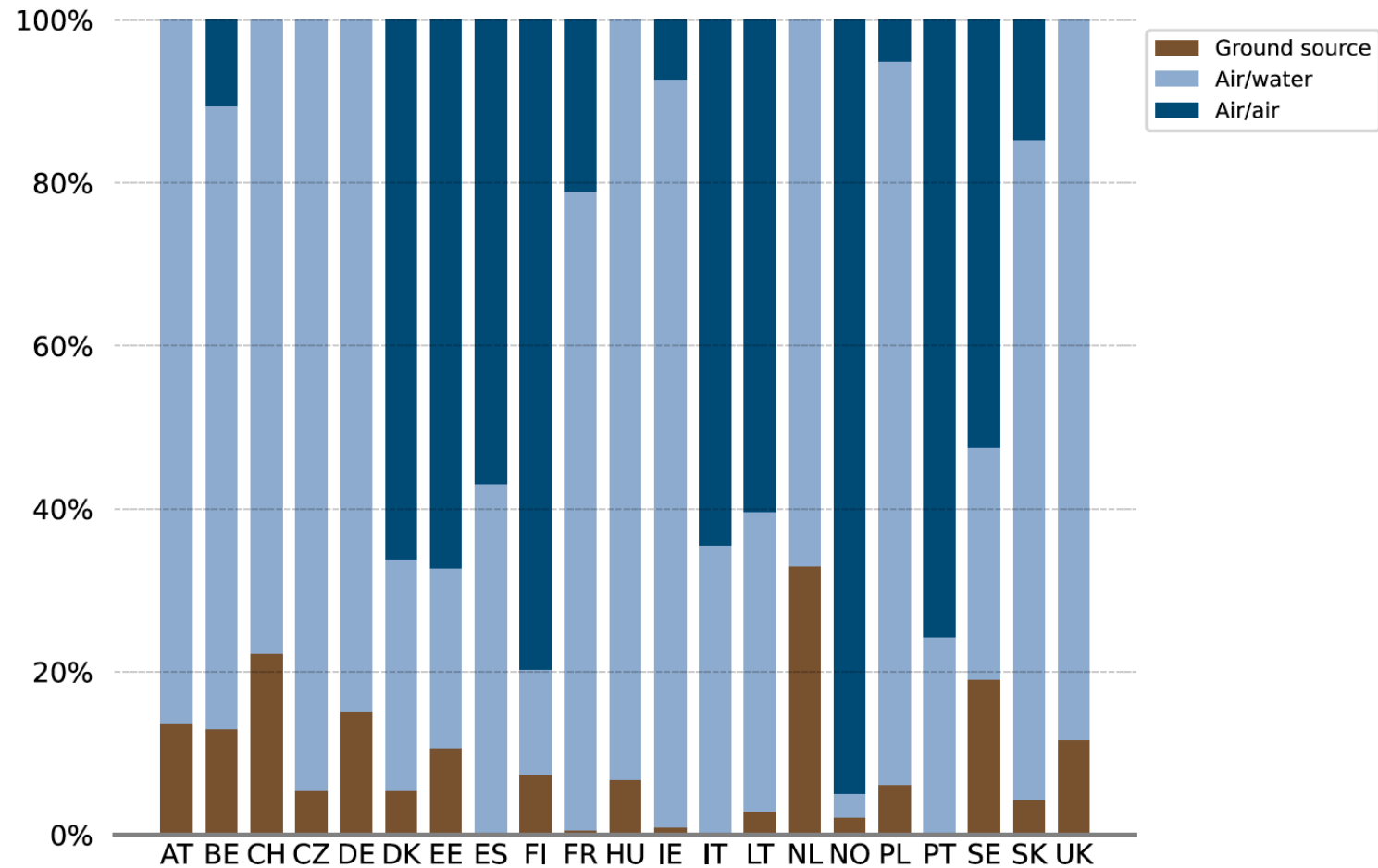
# Sales of heat pumps in 2021 by type



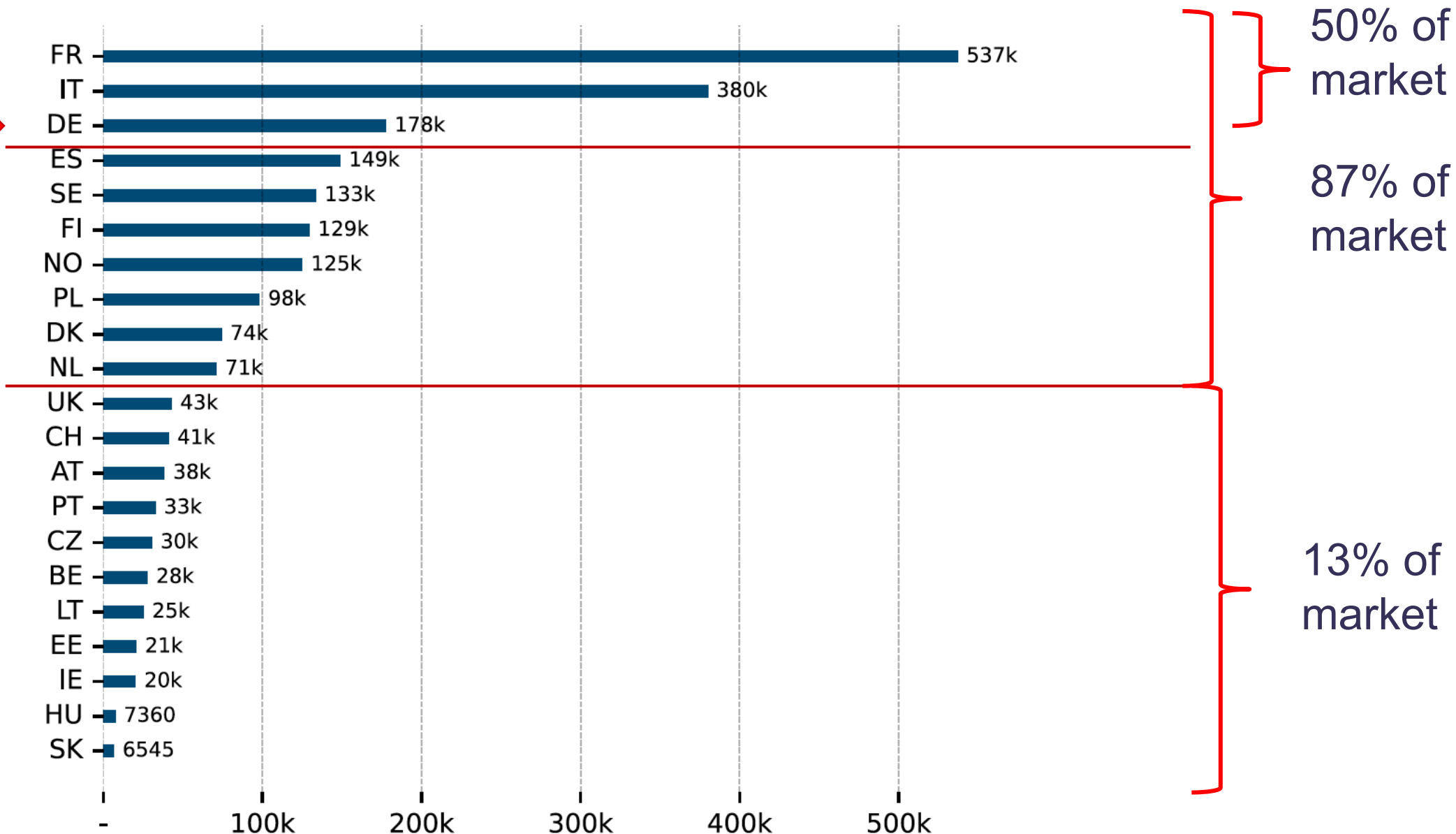
Air dominates as energy source

|                     |                    |     |                              |
|---------------------|--------------------|-----|------------------------------|
| <b>AIR</b>          | Air-Air            | 38% | <b>hydraulic</b>             |
|                     | Air-water          | 45% |                              |
| <b>brine, water</b> | Brine-water        | 6%  | (technically also hydraulic) |
| <b>air</b>          | Sanitary hot water | 11% |                              |

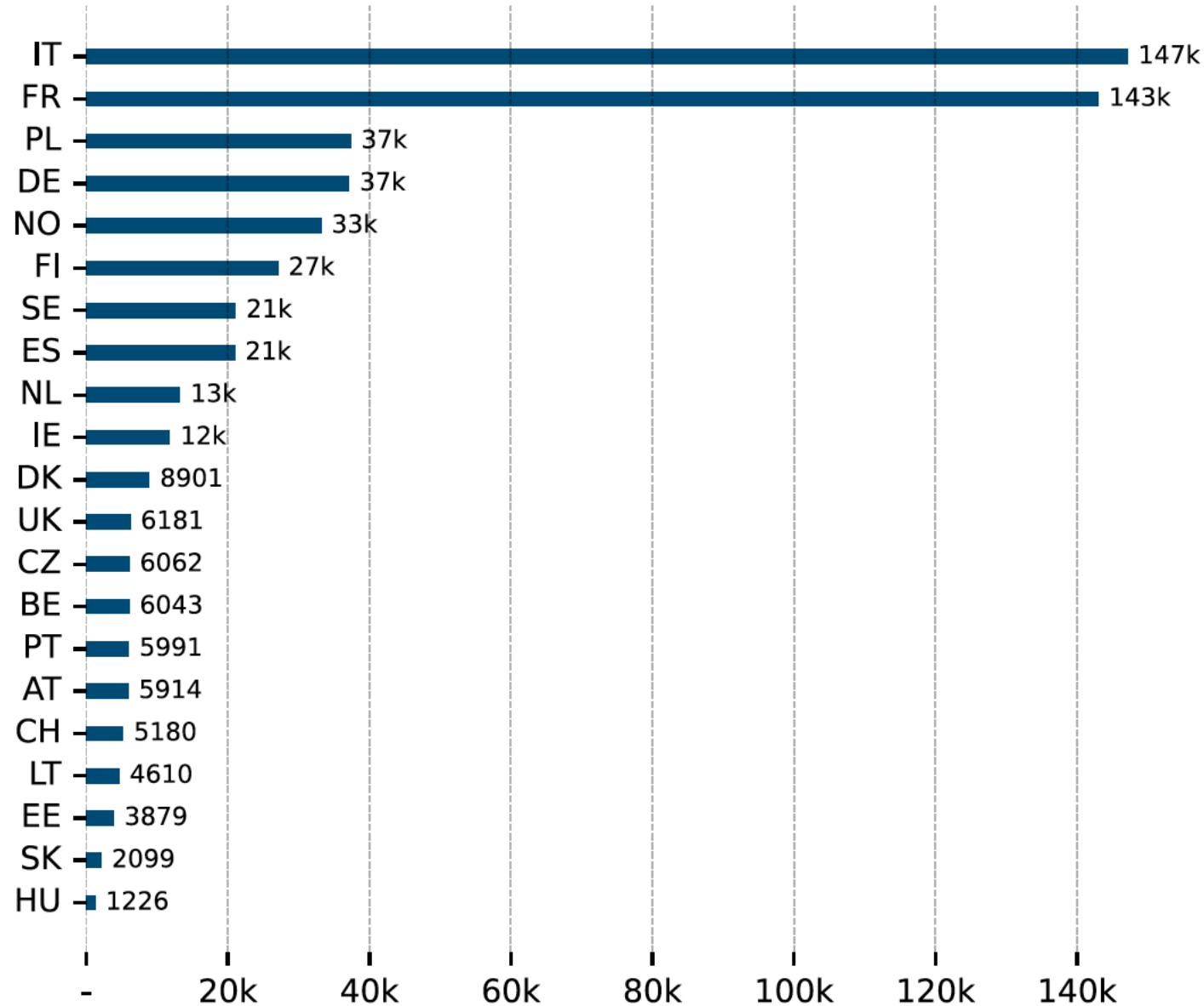
# Share of energy source used per country



# Sales by country



# Sales increase by country

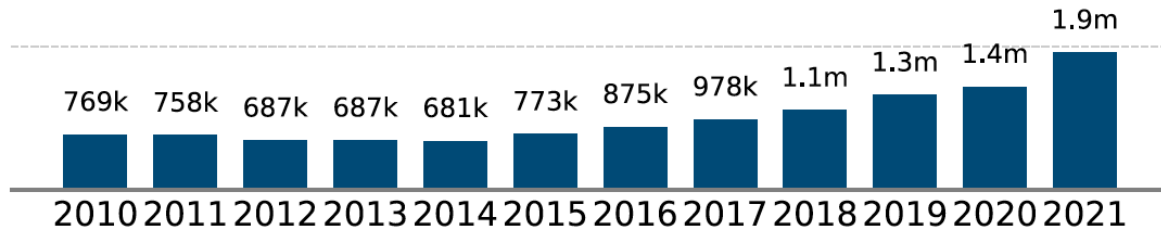


National ambition levels will require even higher increase levels until 2030



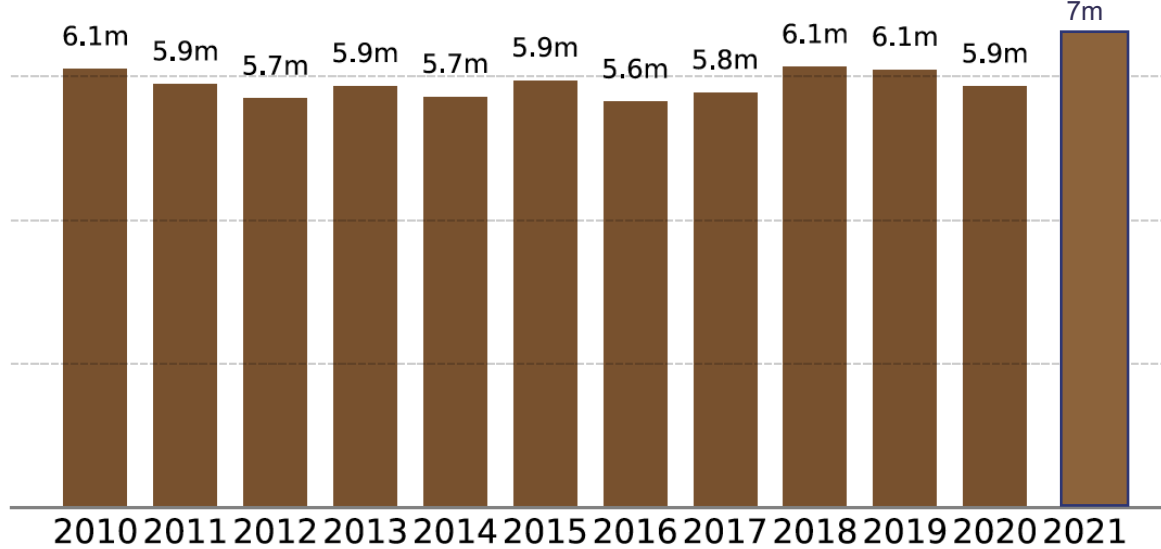
# Market share development: HP in total heater sales

Heating HP



HP share → 50% in 2030?

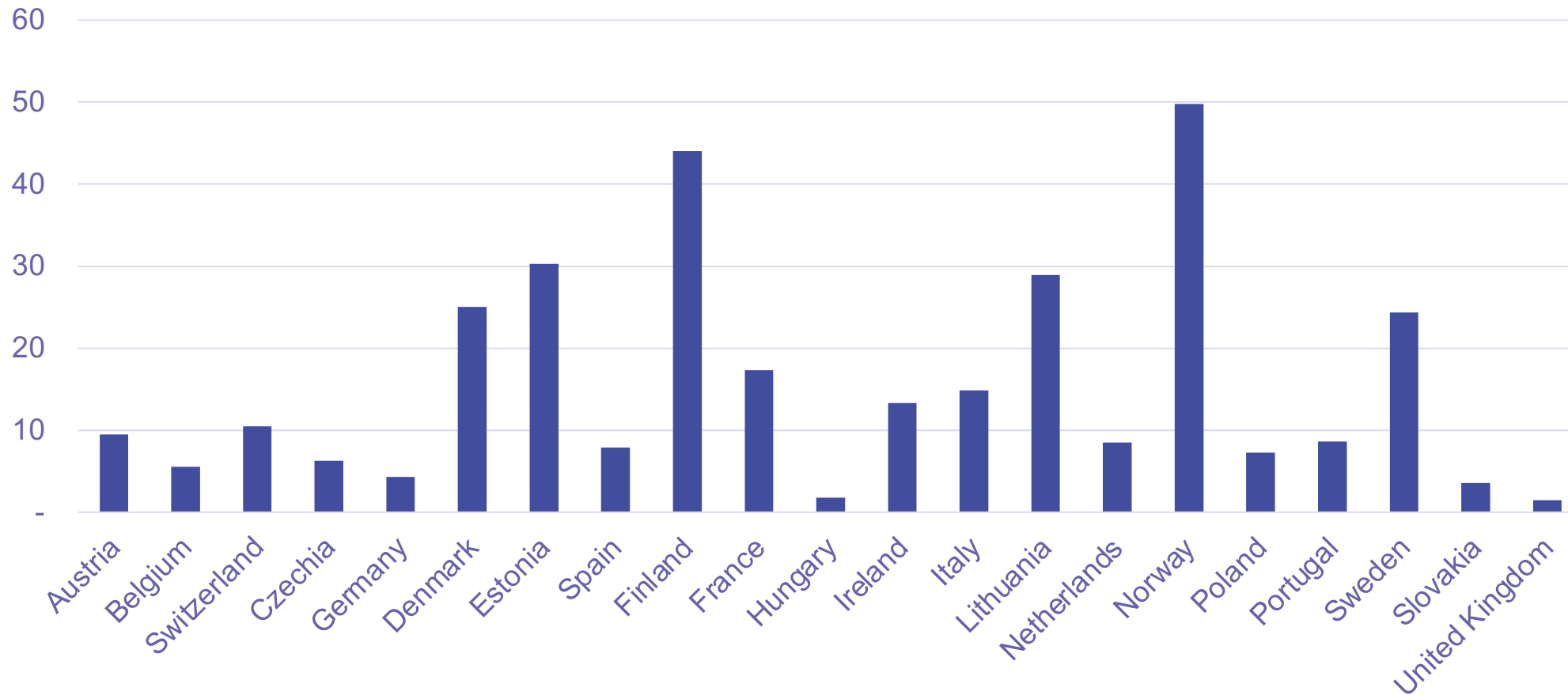
Boilers



11% 11% 10% 11% 11% 13% 14% 15% 18% 20% 21%

# What if all countries were like Norway?

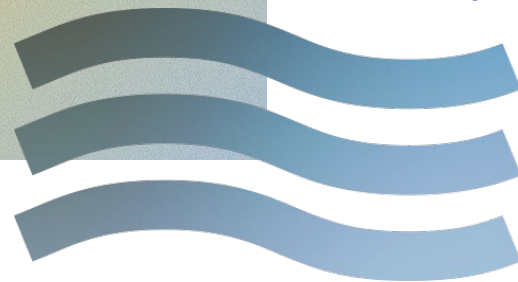
## HP sales per 1000 households



Much higher  
growth is **needed**

Much higher  
growth is **possible**,

- Heat pumps work in cold climates
- Heat pumps work in renovation
- Recognition of technology improved
- Ambition levels even higher



# Heat pumps dominate are recognized in policy

RePowerEU  
and cut our  
dependence on  
Russian gas

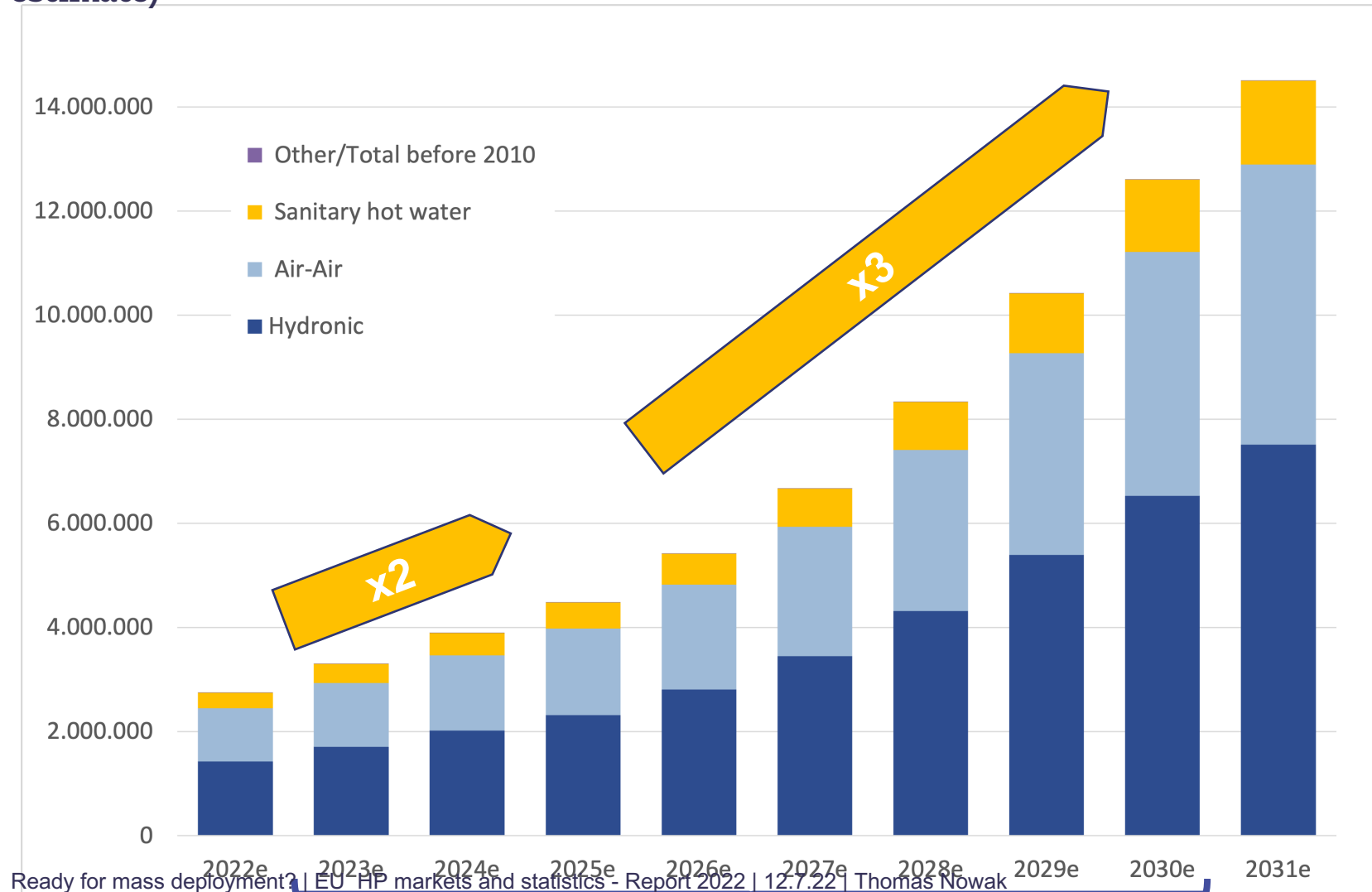


#EUGreenDeal

Photovoltaic  
Wind  
Heat pumps  
Storage

# The growth trajectory – a REPowerEU perspective

annual sales based on REPowerEU targets (10 mill. hydronic units by 2025 / 30 mill. by 2030 - own estimate)



# High ambition needs to be connected to concrete action

‘it needs “all hands on deck to” **accelerate heat pump deployment and eliminate dependency on fossil energy**



# The future impact of EU policy



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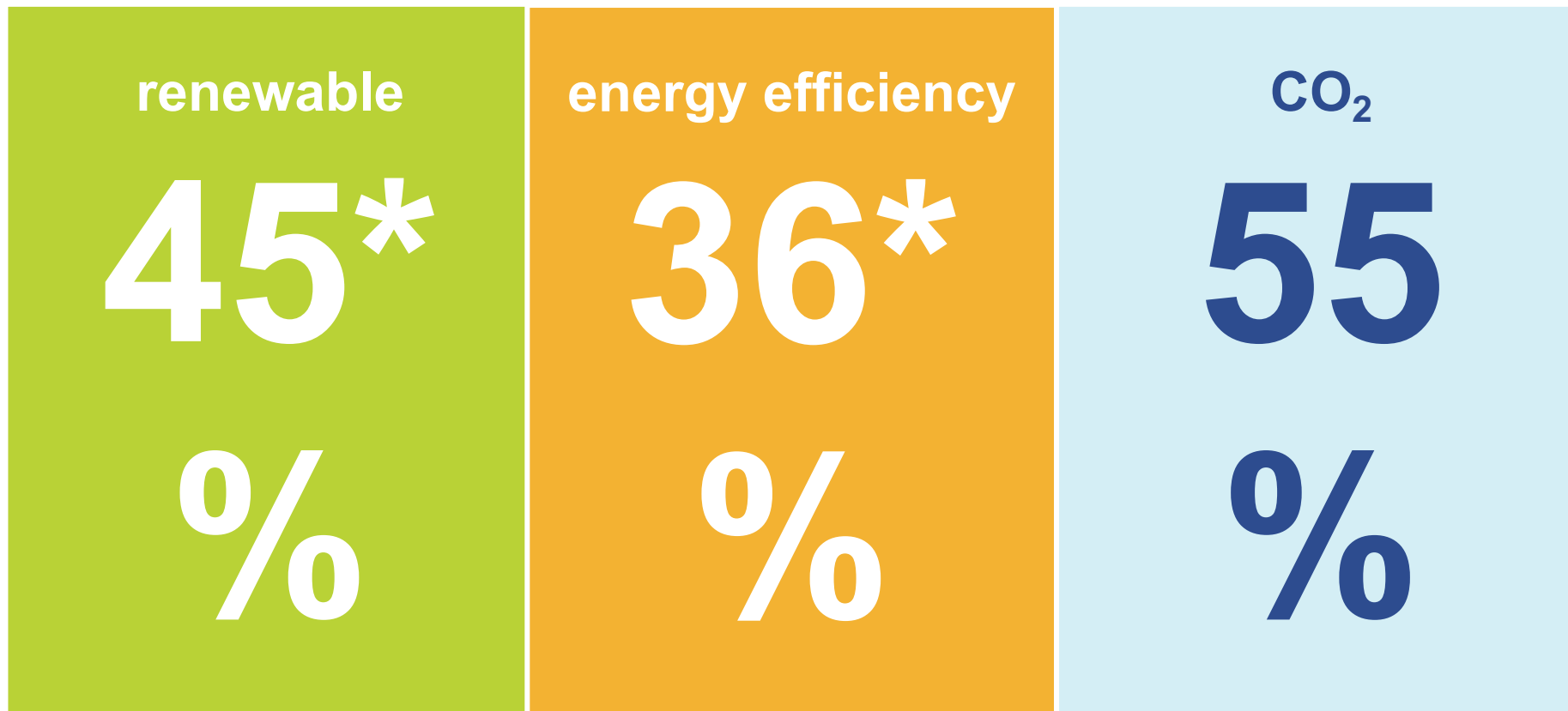


# Fit for 55 package





## Europe is discussing higher targets for **2030!**



## Renewable Energy Directive

+ Renewables goal 2030, sub-target heating and cooling and buildings, renewable energy for industrial heat

## Energy Efficiency Directive

+ Obligatory local heating and cooling plans, fossil fuel combustion no eligible energy saving, remove barriers for waste heat utilization

## Fit for 55

Zoom on heat pump sector

## Energy Taxation Directive

+ Electricity least taxed energy carrier

## Energy Performance of Buildings Directive

+ Zero Emission Buildings, Minimum Energy Performance Standards, Building renovation plans, No financial incentives for fossil fuel boilers

## Emission Trading System & Social Climate Fund

+ carbon price on heating fuels  
+ revenues reuse



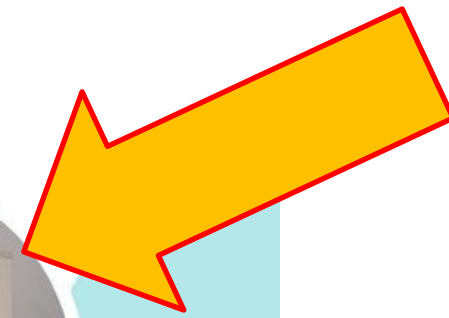
# Accelerated by the energy security crisis & REPowerEU

## Heat pumps dominate are recognized in policy

RePowerEU  
and cut our  
dependence on  
Russian gas



#EUGreenDeal

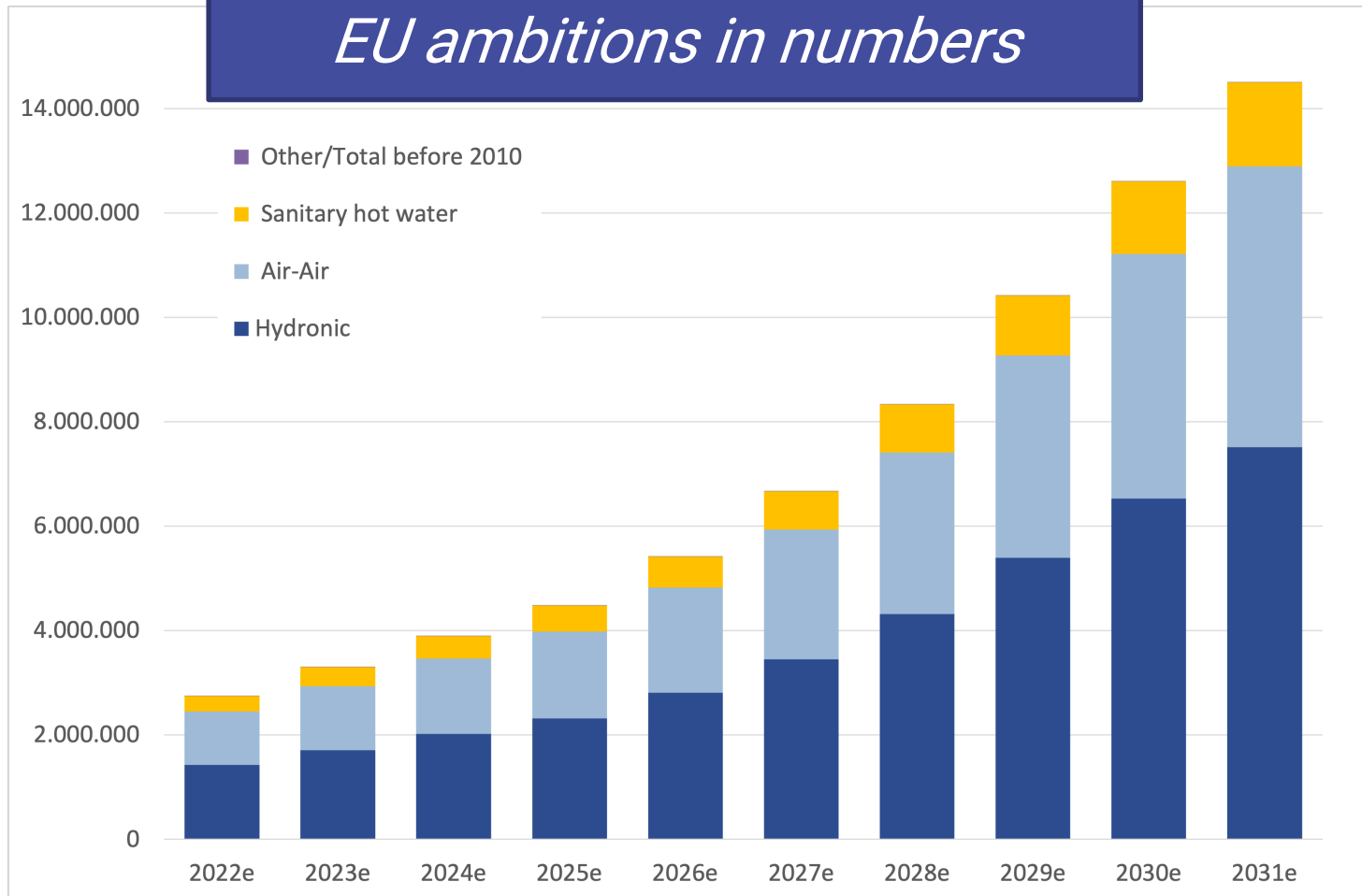


Photovoltaic  
Wind  
Heat pumps  
Storage



# REPowerEU ambition: Double digit growth for the rest of this decade

## EU ambitions in numbers



Estimate sales based on REPowerEU

## Insights

- EU aims at doubling current deployment rate of individual HPs => cumulative 10 million (hydronic) HPs over 5 years
- EHPA extrapolation to all technologies
- 20 million by 2027 & 60 million by 2030

# Heat pumps dominate the headlines



**REUTERS** World Business Legal Markets Breakingviews Technology Investigations More

May 6, 2022  
11:10 AM GMT+2  
Last Updated 21 days ago

Energy

## Heat pumps, renovations could slash Europe's Russian gas use -report

By Kate Abnett

2 minute read

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## Europe's booming demand for heat pumps exposes bottlenecks

By Nikolaus J. Kurmayer | EURACTIV.com 28 Mar 2022 (updated: 29 Mar 2022)

Heat pumps have never been as popular as they are today. [Shutterstock/Dziurek]

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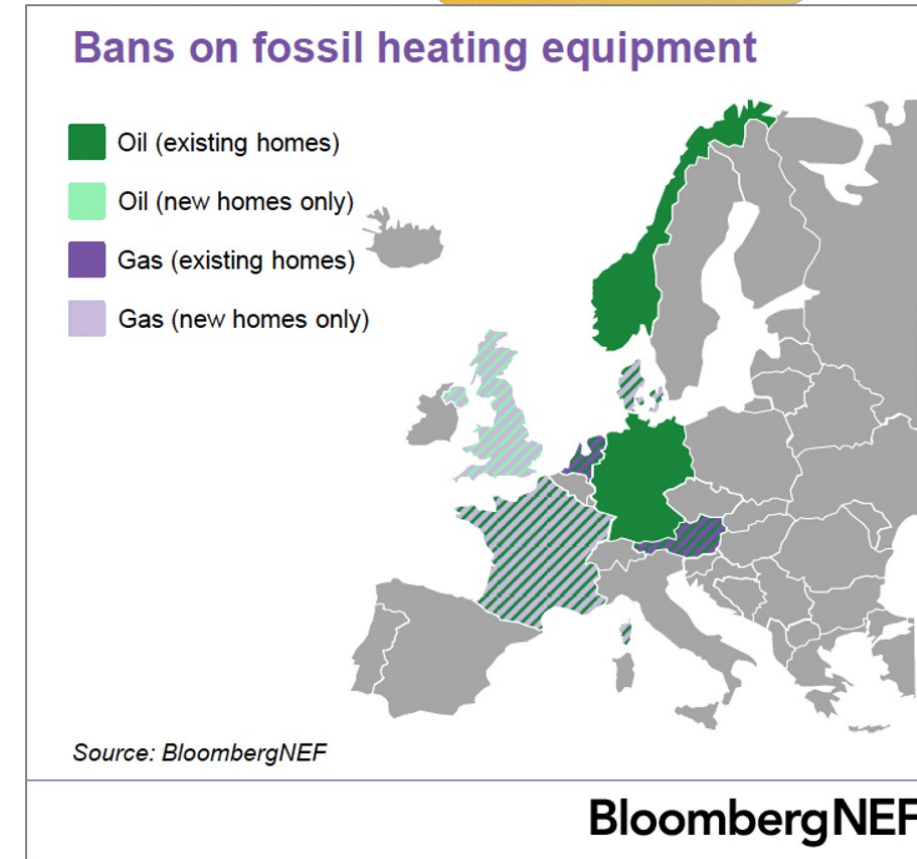
## La pompe à chaleur gagne du terrain

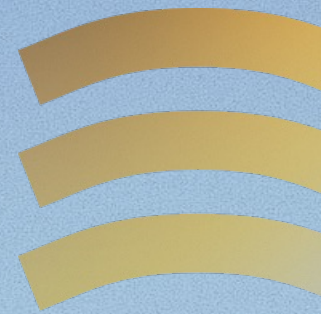
Energie | 04 mai 2022 | Nadia Gorbatko | Actu-Environnement.com

A- A+ Print Email

## National policies: Phase out of fossil-only boilers

- Austria: 1.1.2023 no gas in new buildings
- Flanders: 1.1.2025 no gas in new buildings
- France: 1.7.2022 bans oil boilers
- Germany: 1.1.2024 - share of 65%RE
- Netherlands: 1.1.2026 – min. hybrid heat pump
- Denmark
- European Union - tbc: 2029 via Ecodesign





# No lack of demand. Can industry deliver?



## **As of today ...**

1. **Component supply is a challenge, including fans**
2. **Semi-conductors are not available in sufficient numbers**
3. **Capacity on the installer level is stretched**
4. **New business models under development, new players preparing to enter the market**
5. **Legislation incongruent with ambitious targets**

# A heat pump accelerator to make five points happen



01

Create trust in long term ambition

02

Make clean heating economically most attractive

03

Avoid disruption through legislation

04

Focus on skills for the energy transition

05

Better heat pumps and systems through more R&D

... and plan for the upgrade of electric grids

# Thank you for joining!



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