

Heatpumps

the new **gold** standard for the energy transition?



White goods & cars

Commercial Applications



Residential Applications



Industrial Applications & District Heating



Big buildings

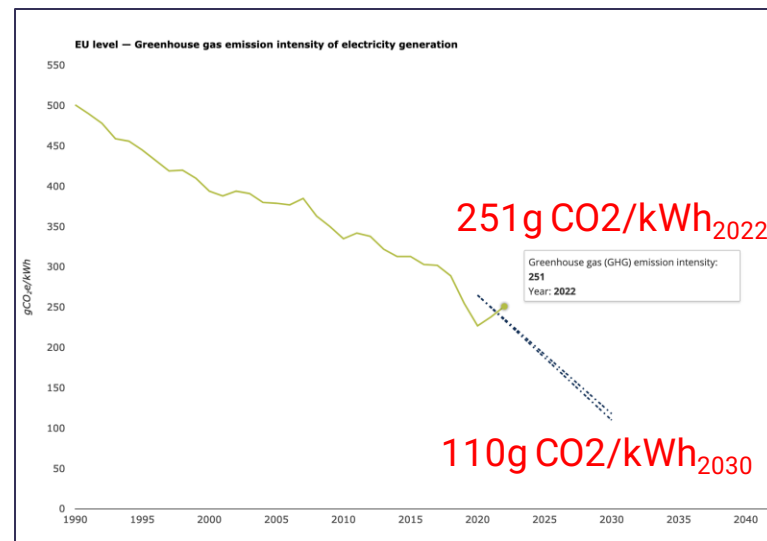


Thomas Nowak

Secretary General | European Heat Pump Association

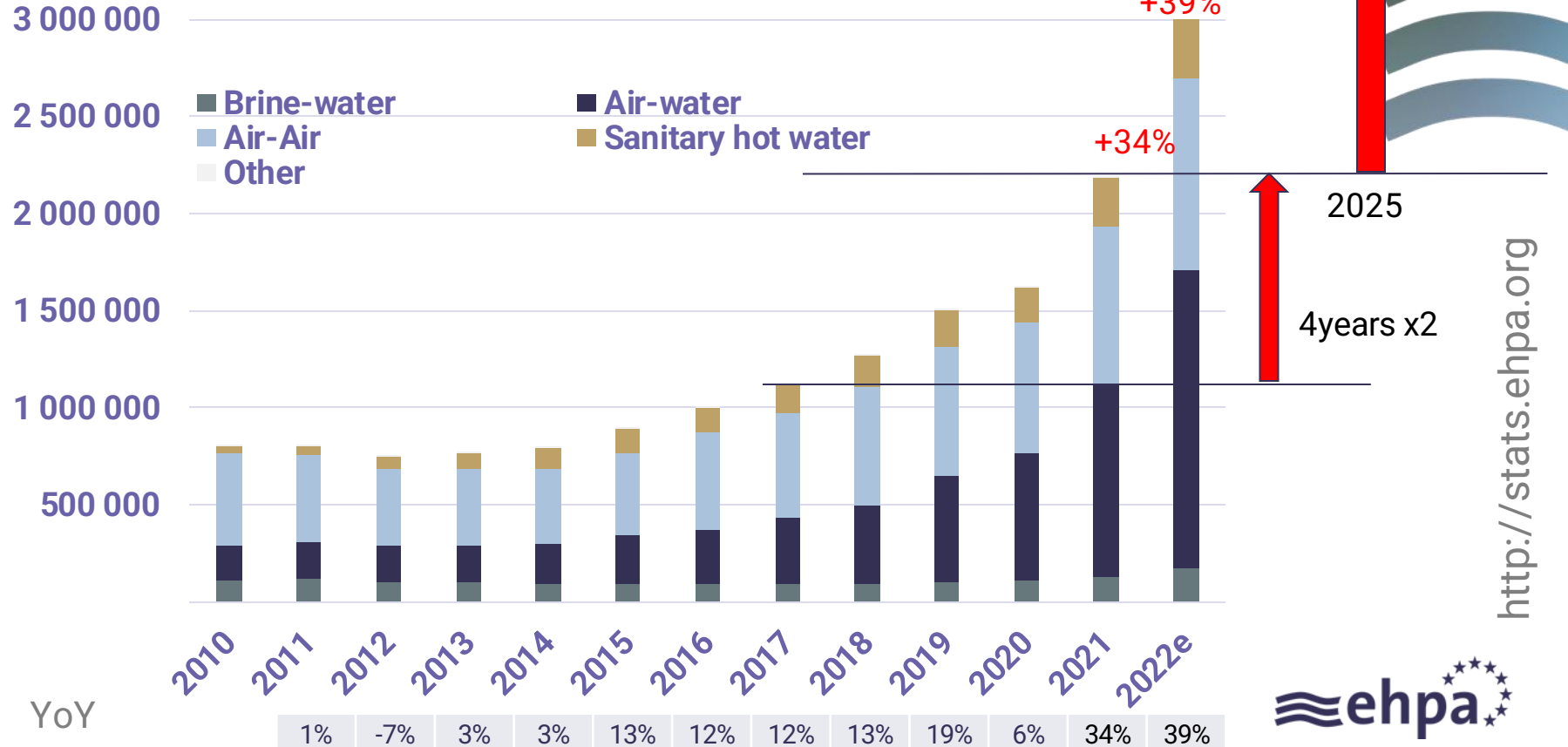
Heavy lifting towards the climate and energy targets

- Renewable and waste energy
 - Most efficient
 - Low to no CO2 emission
 - Local employment
 - Export potential
 - Stabilisation of the electric grid
- electricity
refrigerant



Source: EEA

Market growth '10 – '22 | HP stock 2022 est.: 19,9 mill. installed



Market share 2022

17 million

heating HP

116 mill.

Residential / commercial
buildings

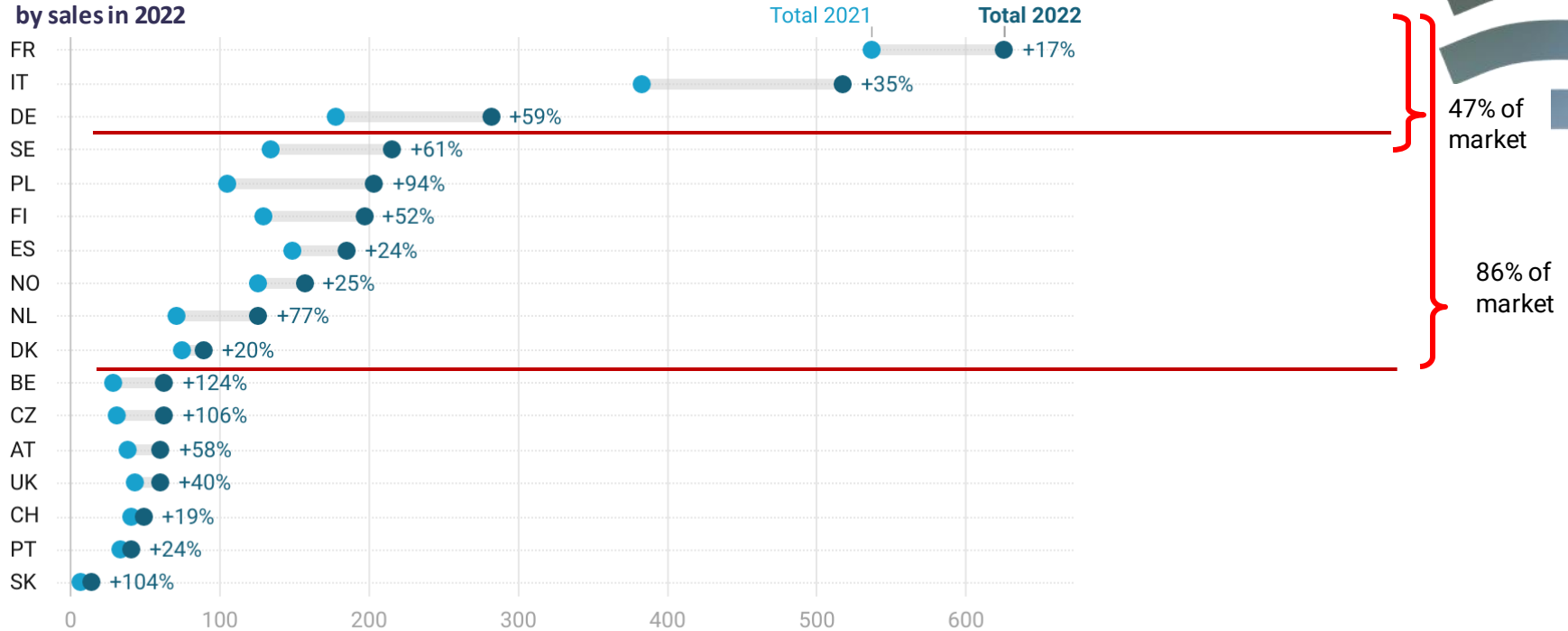


15%



European heat pump markets 2021 and 2022

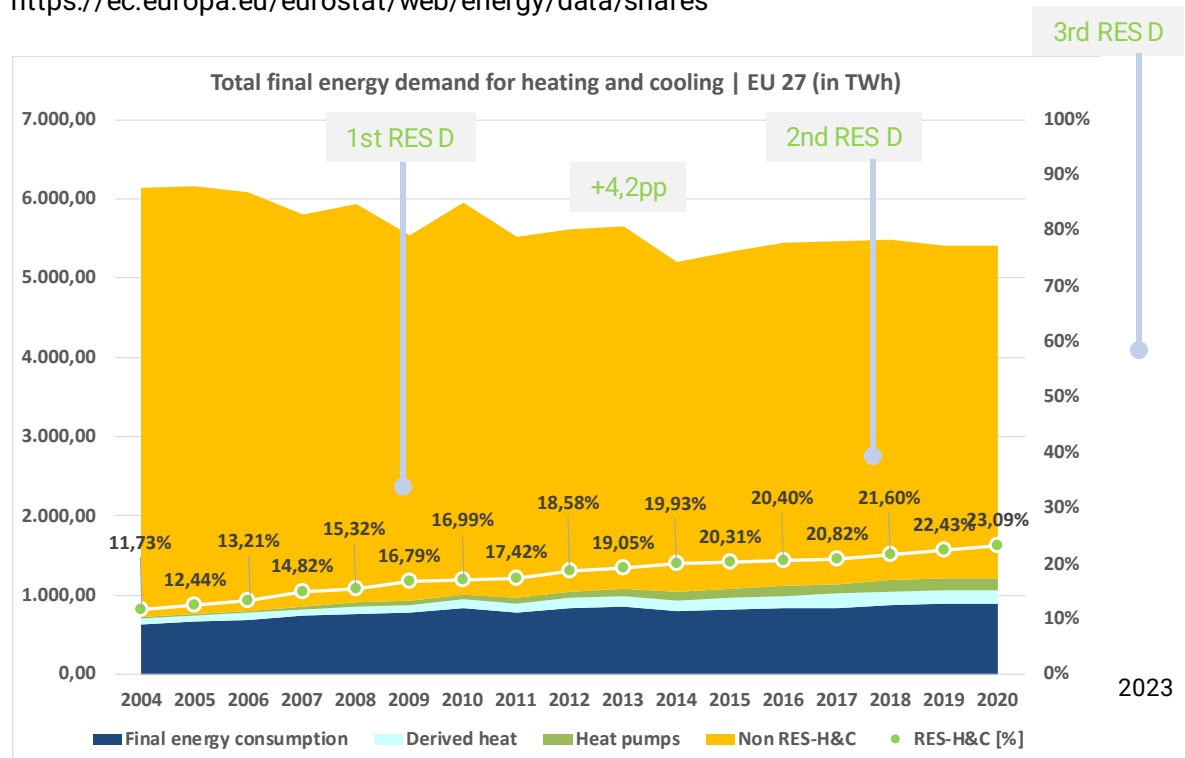
by sales in 2022



Source: stats.ehpa.org • Created with Datawrapper

Growth of renewable heating lacks behind EU targets

<https://ec.europa.eu/eurostat/web/energy/data/shares>



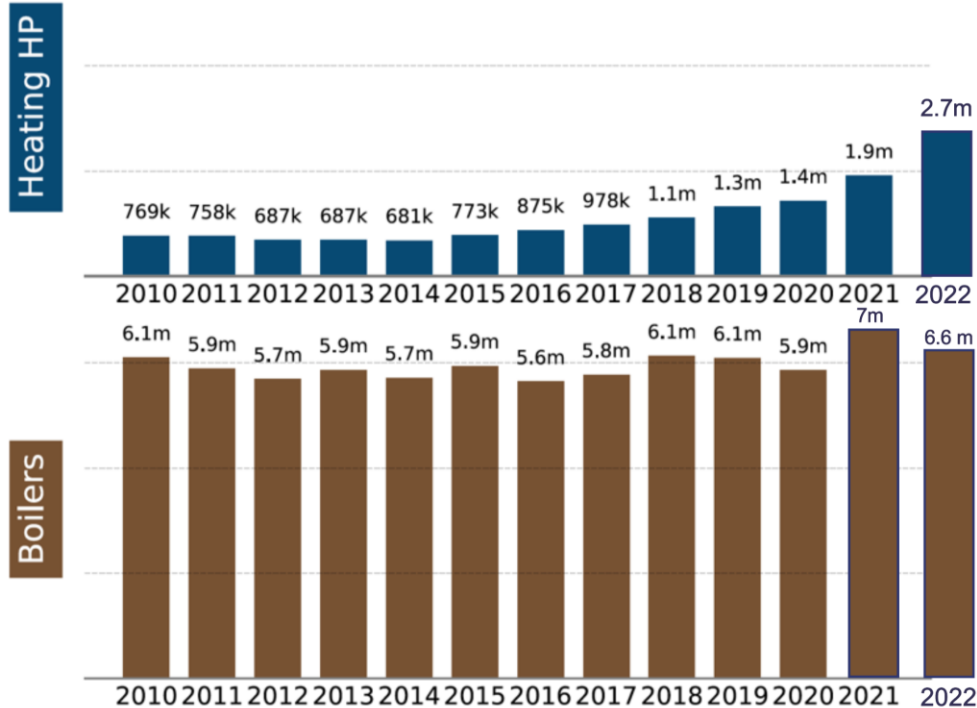
< 1pp
annual increase of
renewable share



Source: Eurostat Shares



Market share development- heating heat pumps vs total sales



HP share 2022: 29%

HP share 2030: > 50% or more?

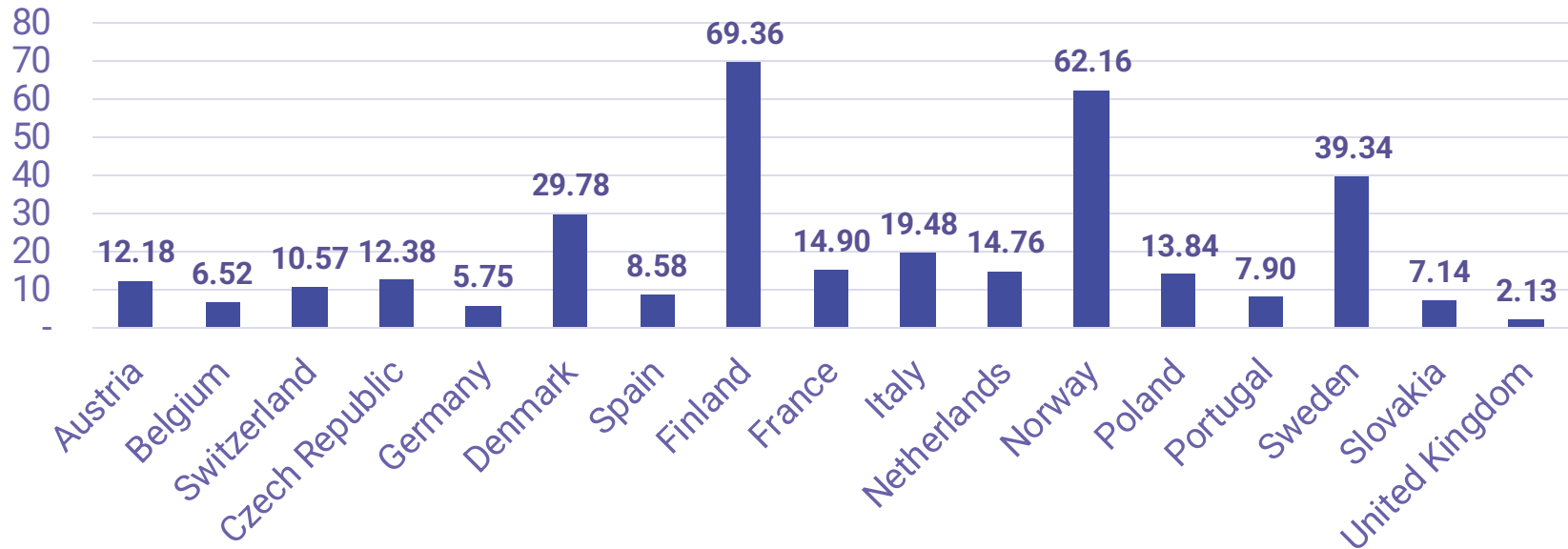
Not with today's business as usual

! This comparison maybe wrong, as the Total "thermal comfort market" is bigger than the heating market and the share of heat pumps when it comes to heating and cooling likewise!

Can we move faster?



HP per 1000 households 2022 (household data for 2021)



2022 the tipping point for heat pumps





Green Deal Industrial Plan

Batteries
windmills
heat pumps
Solar
Electrolysers

Commission européenne
European Commission

ehpa



The Inflation Reduction Act lowers energy costs for consumers and small businesses while creating good-paying jobs as America's clean energy economy and manufacturing sectors grow. Learn more below on how you or your family can save on utility bills, get support to purchase electric vehicles and energy-saving appliances, and access the economic opportunities of the clean energy future.

Find out which programs are available to you so that you can benefit from American made clean energy as soon as today, and sign up below to be the first to receive updates and take advantage of these opportunities.

Department of Energy

President Biden Invokes Defense Production Act to Accelerate Domestic Manufacturing of Clean Energy

JUNE 8, 2022

Energy.gov • President Biden Invokes Defense Production Act to Accelerate Domestic Manufacturing of Clean Energy

DPA Invocation Will Boost American Production of the Critical Technologies Necessary to Lower Energy Costs, Support the Clean Energy Economy, and Strengthen National Security.

WASHINGTON, D.C.— President Biden today issued presidential determinations providing the U.S. Department of Energy (DOE) with the authority to utilize the Defense Production Act (DPA) to accelerate domestic production of five key energy technologies: (1) solar; (2) transformers and electric grid components; (3) **heat pumps**; (4) electrolysers, fuel cells, and platinum group metals. The DPA determinations are part of the Biden-Harris Administration's plan to lower energy costs for families, strengthen national security, and achieve a more American energy future.

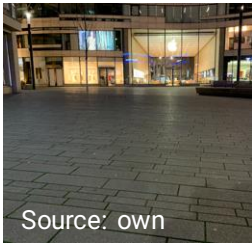
RePowerEU and cut our dependence on Russian gas



#EUGreenDeal



Source: Leonid Faerberg in kyivindependent.com

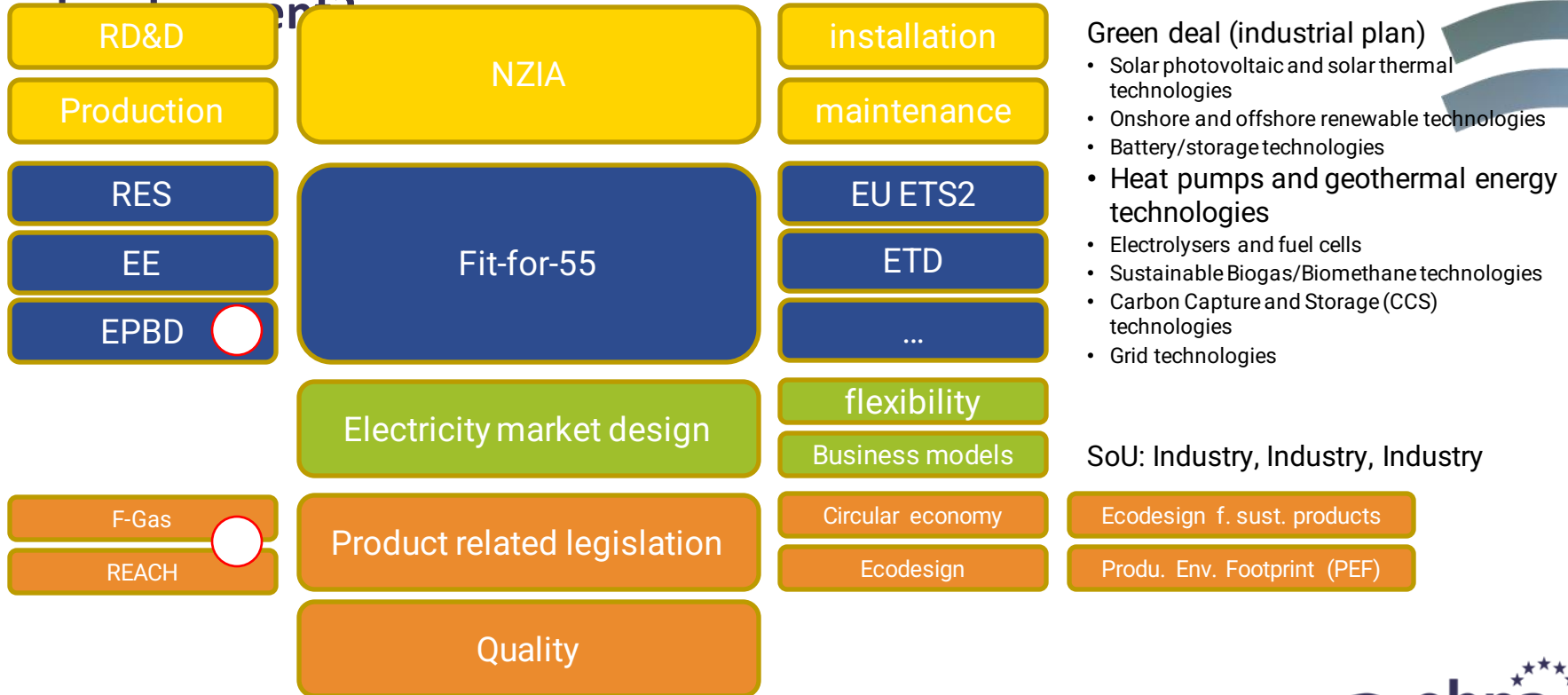


Source: own

iea

10-Point Plan to Reduce the European Union's Reliance on Russian Natural Gas

What will drive the next five to ten years of market



REPowerEU: new targets

- Solar strategy: install 600 GW by 2030
- Solar rooftop initiative
- 10 million additional hydronic heat pumps until 2026
- total of 30 million additional hydronic units by 2030.
- renewable energy infrastructure as being of “overriding public interest”
- decarbonise heat demand in industry, including through high capacity/high temperature heat pumps.



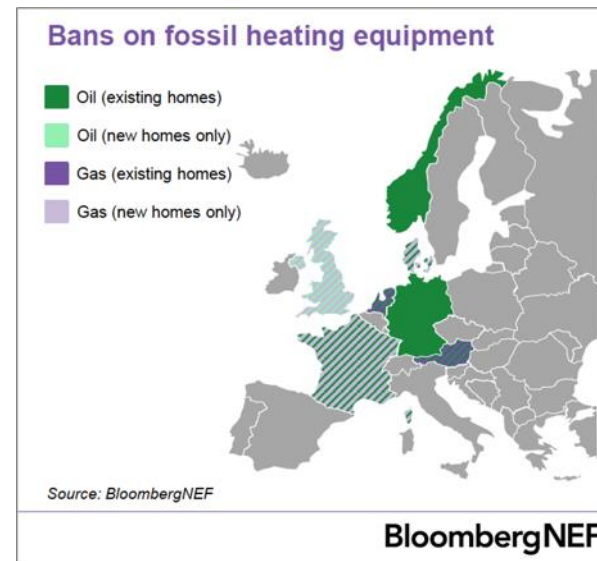
Agreed renewable energy target

42,5%

Additional investment of **210 bln** € until 2027

National policies to phase out fossil energy boilers

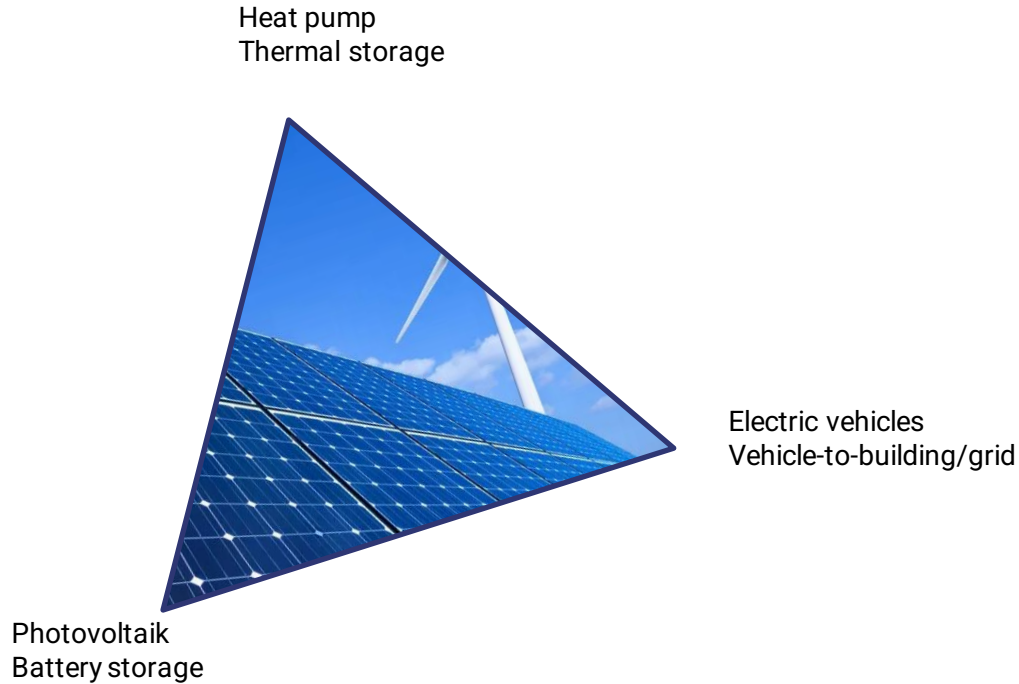
- **Austria:** 1.1.2023 no gas in new buildings
- **Flanders:** 1.1.2025 no gas in new buildings., 1.1.2022 oil boiler ban in all buildings
- **France:** 1.7.2022 ban oil boilers in all buildings
1.1.2023 ban gas boilers in new buildings;
1.1.202? ban gas boilers multi-family buildings
- **Germany:** 1.1.2024 - share of 65% RE in heating
- **Netherlands:** 1.1.2026 – min. hybrid heat pump
- **Denmark:** 400 000 boilers → DHC and HP by 2028/2030
- **Italy:** 1.6.2022 – 60% RE share #
(new buildings, heat, hot water, cooling)
- **UK 600 000 HP by 2028, 1,9 million by 2035**
- **European Union - tbc: 2029 via Ecodesign**



source: https://www.ehpa.org/2022/11/04/ehpa_news/which-countries-are-ending-fossil-fuel-heaters/

What about end-user demand?

The impact of the all-electric building



• And the value chain?

People factories labs infra IT know-how
electrons

Industry is preparing for growth

**As of today, more than 5 billion €
of investment announced until 2025**

Based on press releases by Daikin, Viessmann, Stiebel-Eltron, Bosch, Panasonic, Vaillant, Hoval, Ziehl-Abegg, Alfa-Laval, Grundfoss, Wilo, Kensa, Ariston, Clivet/Midea, Rheinmetall etc.



2023 - 2024

the year of crisis?



Heat pump sales in 12 markets (representing 80%) (1.H 2023 vs 1.H 2022; Q3 data only for few markets)

- First half of 2022: on average **single digit growth**
- Strong warning signs in all markets
- Stark decline of sales in Q3 and Q4, maybe even 2024
 - Austria ↓
 - Denmark ↓ ↓
 - France ↓
 - Germany ↓ ↓
 - Netherlands ↑
 - Poland ↓ ↓
 - Sweden ↑ ?

Slow down in demand is a major risk to industry investment → policy action needed!

Light at the end of the tunnel?

- Slow down of demand
Overcapacity
- VS
- New technologies for new applications
- New business models
- More energetic marketing
- Calming down of nervous markets



**Things will not get better automatically and
nothing will change fast**

Activating end-user interest & investment

Cost of electricity (ct/kWh_{el})

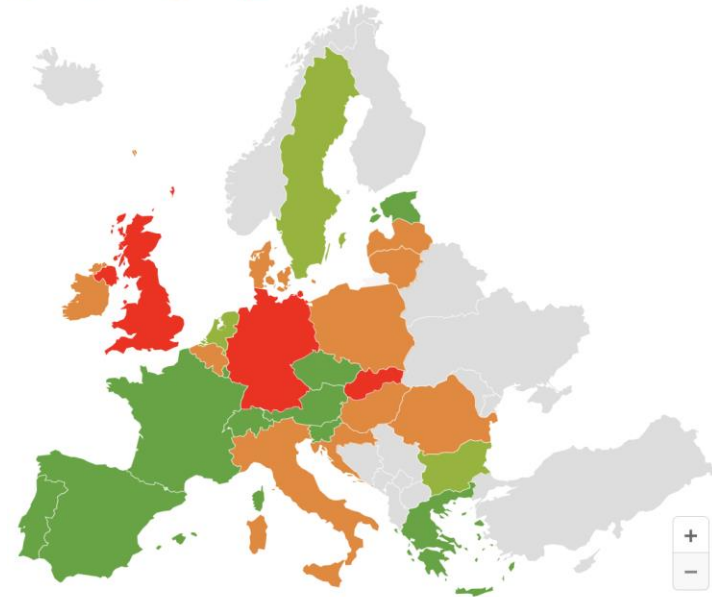
Cost of gas (ct/kWh_{thermal})

≈ 2

Electricity vs. gas ratio for second half of 2022

Data from Eurostat nrg_pc_202 and nrg_pc_204

■ < 1.5 ■ 1.5-2.5 ■ 2.5-3.5 ■ ≥ 3.5



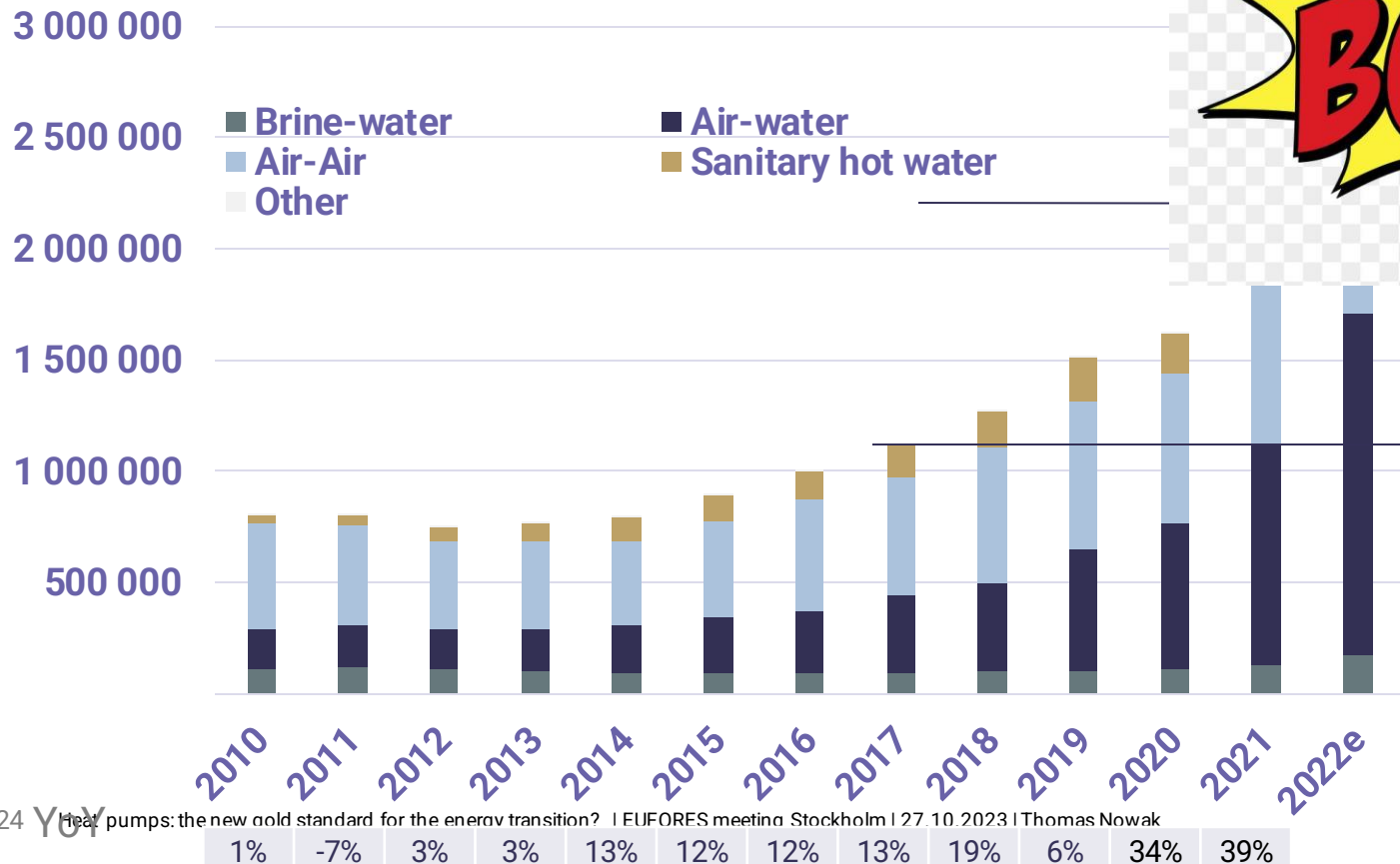
**The energy transition is a huge challenge
All hands on deck, please because we are not done.**



Every country needs a “heat pump accelerator”



Market growth '10 – '22 | HP stock 2022 est.: 19,9 mill. i



25
4year
s x2

The European Heat Pump Association aisbl / founded 2000



198

Members

Heat pump manufacturers

Component manufacturers

National associations

Consultants

Research & test institutes

22

countries represented

International cooperation

CECA, IEA, IEA HPC, IRENA, HPCJ

Vision

In a fully decarbonised Europe, heat-pump technologies are the number one heating and cooling solution, being a core enabler for a renewable, sustainable and smart energy system.