Heatpumps
the new gold standard for the energy transition?

Commercial Applications

Industrial Applications & District Heating

White goods & cars

Residential Applications

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

Source: EEA

<table>
<thead>
<tr>
<th>Year</th>
<th>CO2/kWh</th>
</tr>
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<tbody>
<tr>
<td>2022</td>
<td>251</td>
</tr>
<tr>
<td>2030</td>
<td>110</td>
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electricity refrigerant
Market share 2022

17 million heating HP
116 mill.

15%

Residential / commercial buildings
European heat pump markets 2021 and 2022
by sales in 2022

- Total 2021: +35%
- Total 2022: +17%

FR
IT
DE
SE
PL
FI
ES
NO
NL
DK
BE
CZ
AT
UK
CH
PT
SK

47% of market (DE, FR, IT, SE, PL, FI, ES)
86% of market (Total 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
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)

- Austria: 12.18
- Belgium: 6.52
- Switzerland: 10.57
- Czech Republic: 12.38
- Germany: 5.75
- Denmark: 29.78
- Spain: 8.58
- Finland: 69.36
- France: 14.90
- Italy: 19.48
- Netherlands: 14.76
- Norway: 62.16
- Poland: 13.84
- Portugal: 7.90
- Sweden: 39.34
- Slovakia: 7.14
- United Kingdom: 2.13

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2022
the tipping point
for heat pumps
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The Initiative Build Back Better Act lowers energy costs for consumers and small businesses while creating good-paying jobs in 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.
What will drive the next five to ten years of market development?

Green deal (industrial plan)
- Solar photovoltaic and solar thermal technologies
- Onshore and offshore renewable technologies
- Battery/storage technologies
- Heat pumps and geothermal energy technologies
- Electrolysers and fuel cells
- Sustainable Biogas/Biomethane technologies
- Carbon Capture and Storage (CCS) technologies
- Grid technologies

SoU: Industry, Industry, Industry

Electricity market design
- Flexibility
- Business models

Product related legislation
- Circular economy
- Ecodesign

Quality
- Eco design for sustainable products
- Produ. Env. Footprint (PEF)

RD&D
Production
RES
EE
EPBD

NZIA
Fit-for-55
installation
maintenance
EU ETS2
ETD
...

F-Gas
REACH
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%
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

Heat pump
Thermal storage

Photovoltaik
Battery storage

Electric vehicles
Vehicle-to-building/grid
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 \((\text{ct/kWh}_{\text{el}})\)

Cost of gas \((\text{ct/kWh}_{\text{thermal}})\)

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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. in

- Brine-water
- Air-water
- Air-Air
- Sanitary hot water
- Other

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https://stats.ehpa.org
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.