



RAP[®]

REGULATORY
ASSISTANCE PROJECT

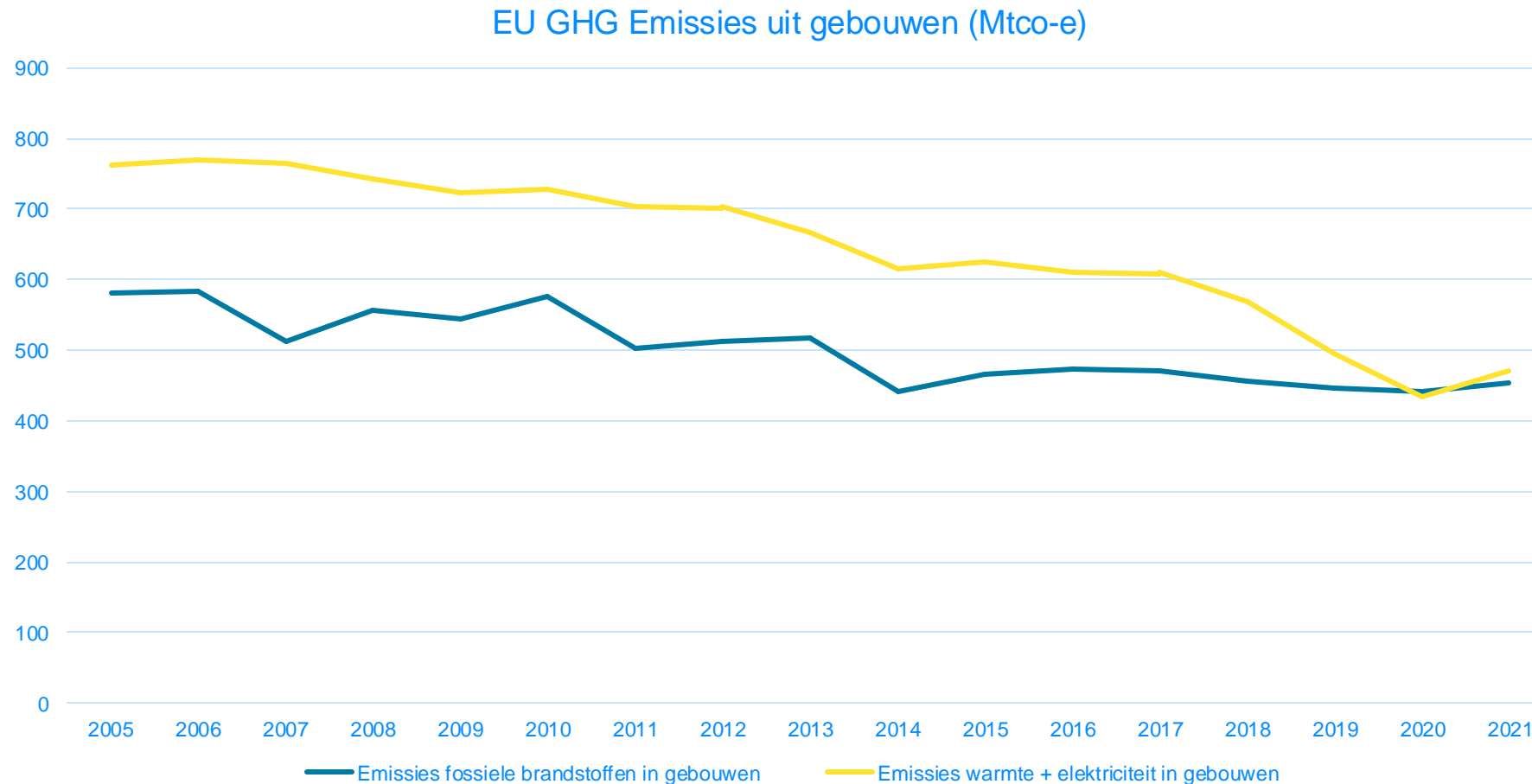
18 September 2024

Warmtepompen in Europa: 2 stappen vooruit 1 stap terug?

Vlaams Warmtepomp Symposium 2024

Sem Oxenaar
soxenaar@raponline.org
RAP

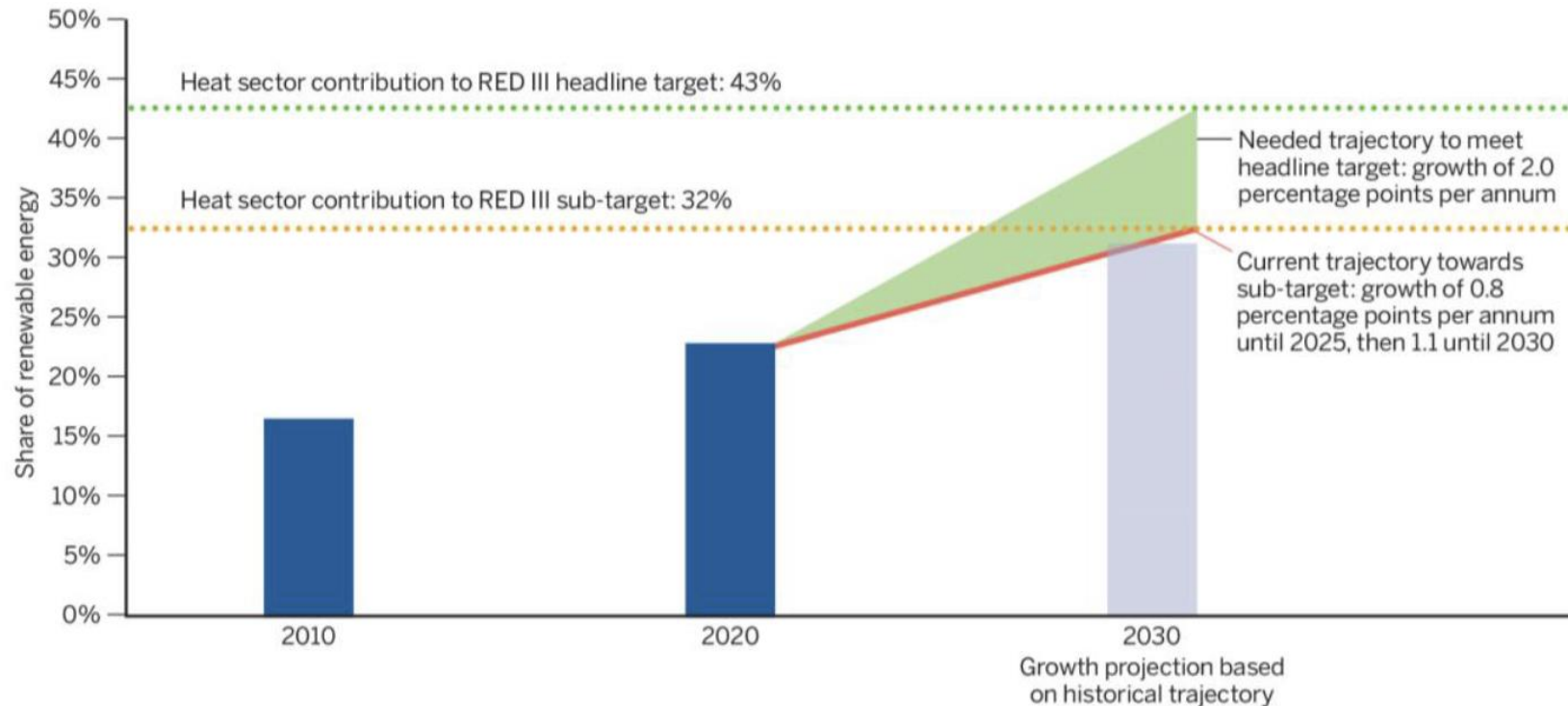
Emissies gebouwde omgeving stagneren



Source: EEA, 2023

Niet 'on-track' voor doelen hernieuwbare warmte

Figure 1. Share of renewables in energy for heating and cooling based on current trajectories and targets



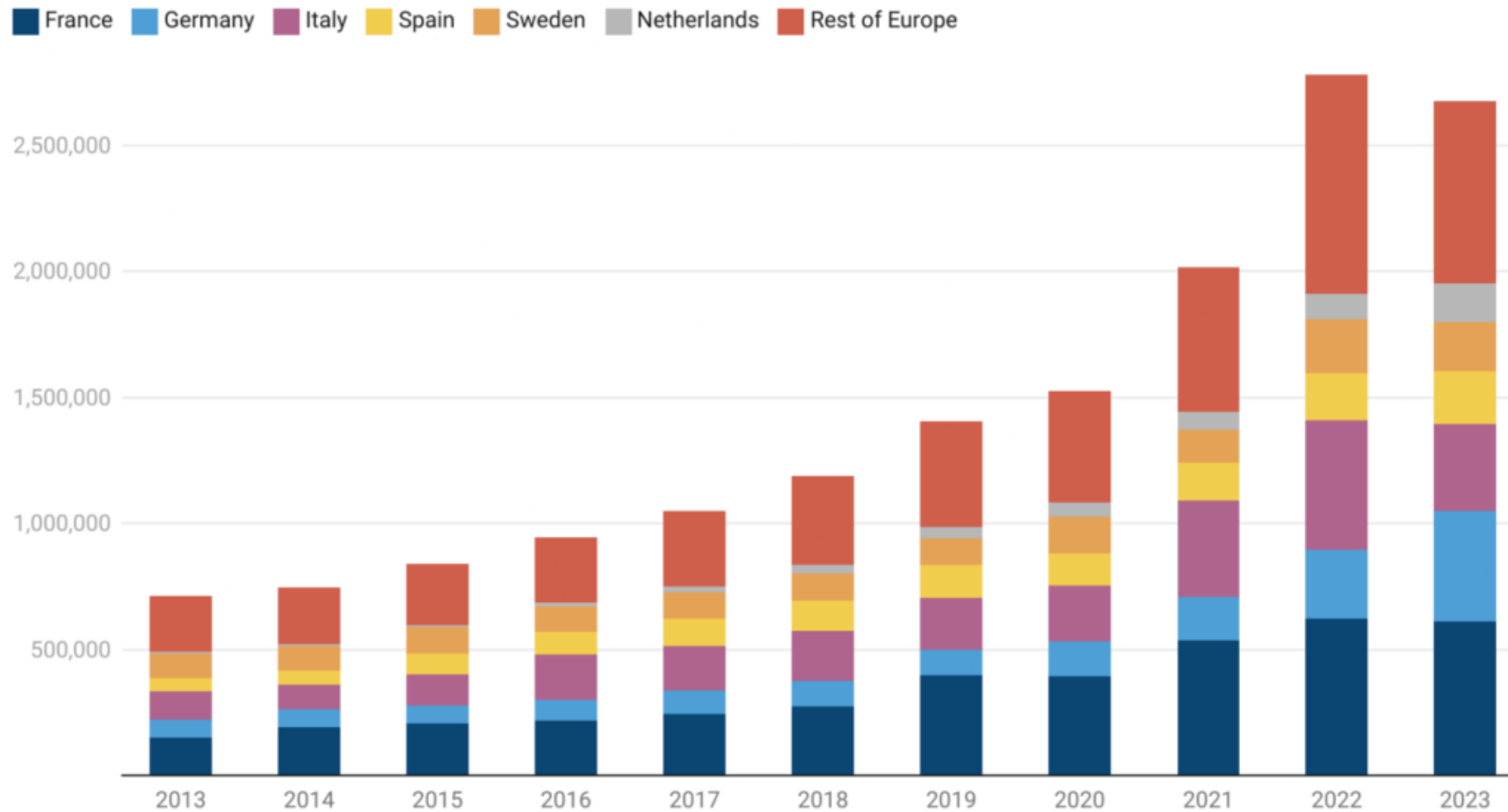
Source: Gibb, D., Thomas, S., & Rosenow, J. (2022). *Metrics matter: Efficient renewable heating and cooling in the Renewable Energy Directive*.

An aerial photograph of a building's roof, showing a grid of solar panels and a section of red tiles. A dark blue semi-transparent overlay covers the middle portion of the image, containing the title and a large number '1'.

1

De warmtepomp markt in Europa

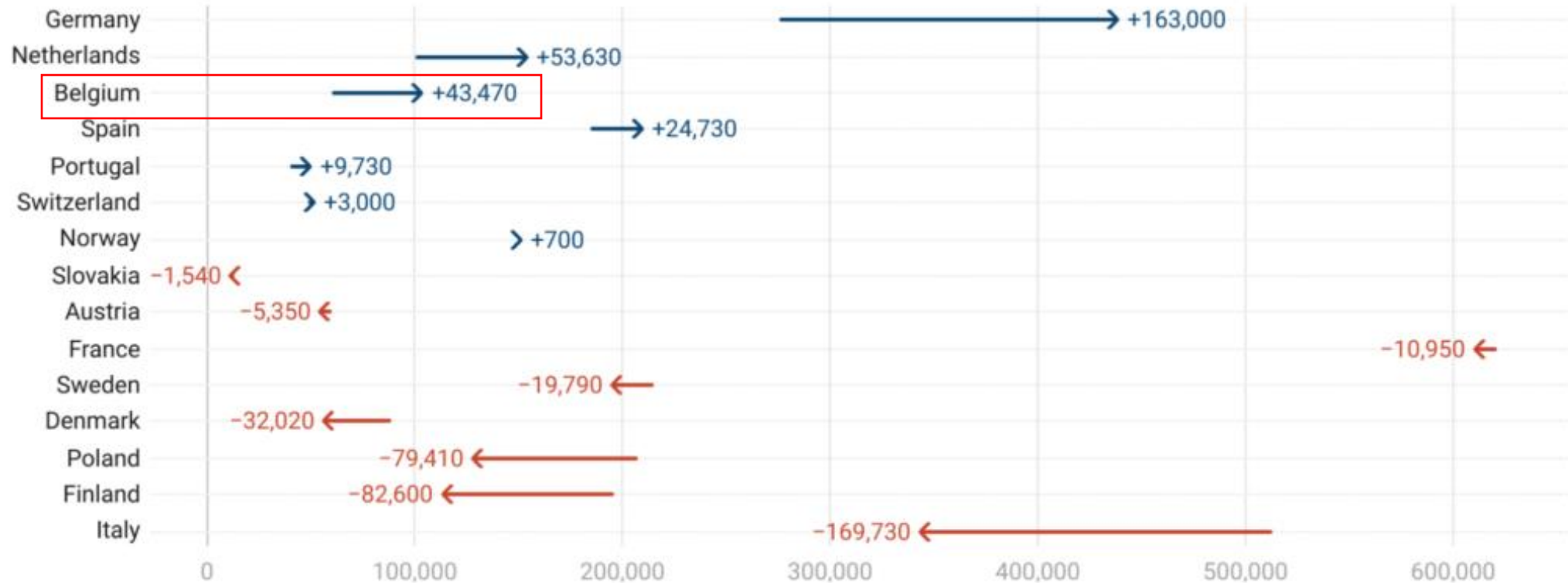
Europese verkopen 6,5% gedaald in 2023 na een recordjaar



Source: EHPA market statistics

Sterke groei in sommige landen, daling in andere

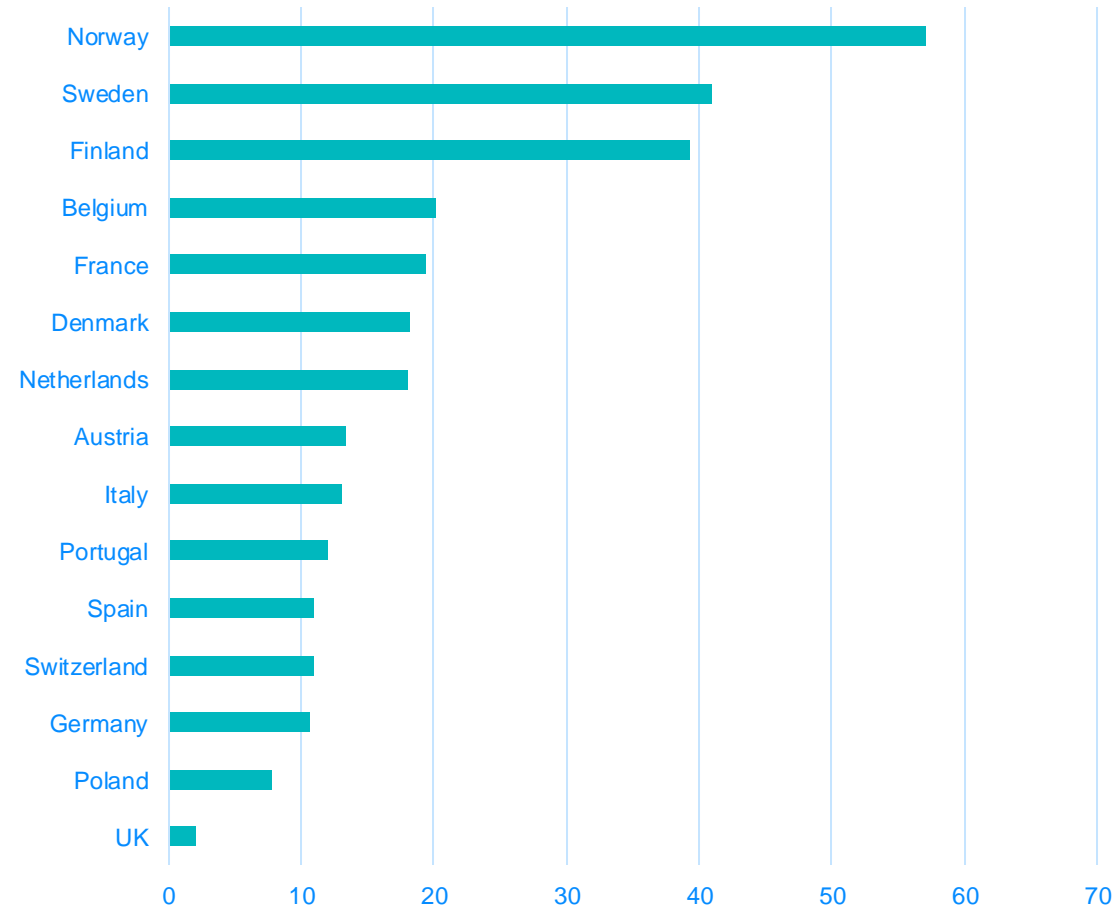
Change in heat pump sales 2022-2023



Source: EHPA market statistics

Belgie op plaats 4

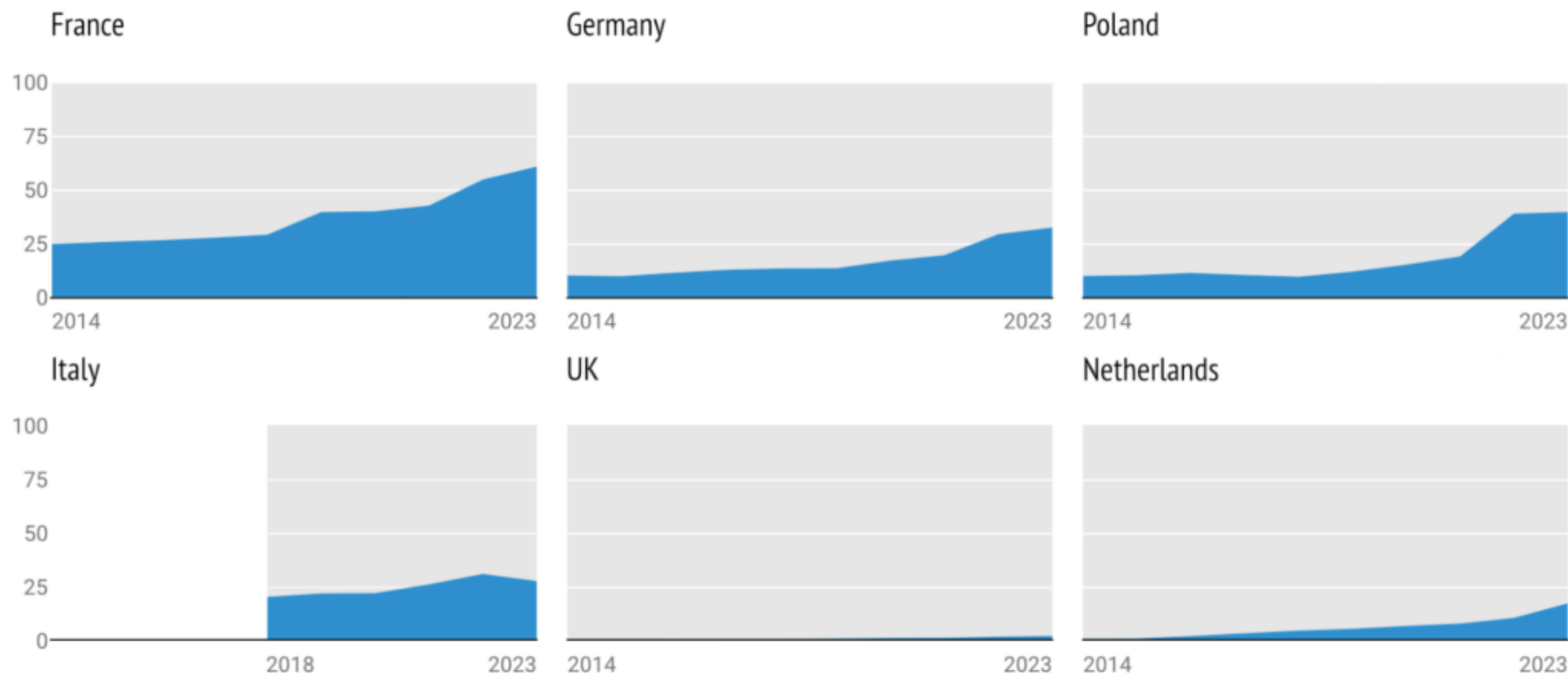
Heat pumps sold per 1,000 households in 2023



Source: EHPA 2024

Groot verschil in marktaandeel warmtepompen

Share of heat pumps compared with fossil fuel boilers across six European markets, %

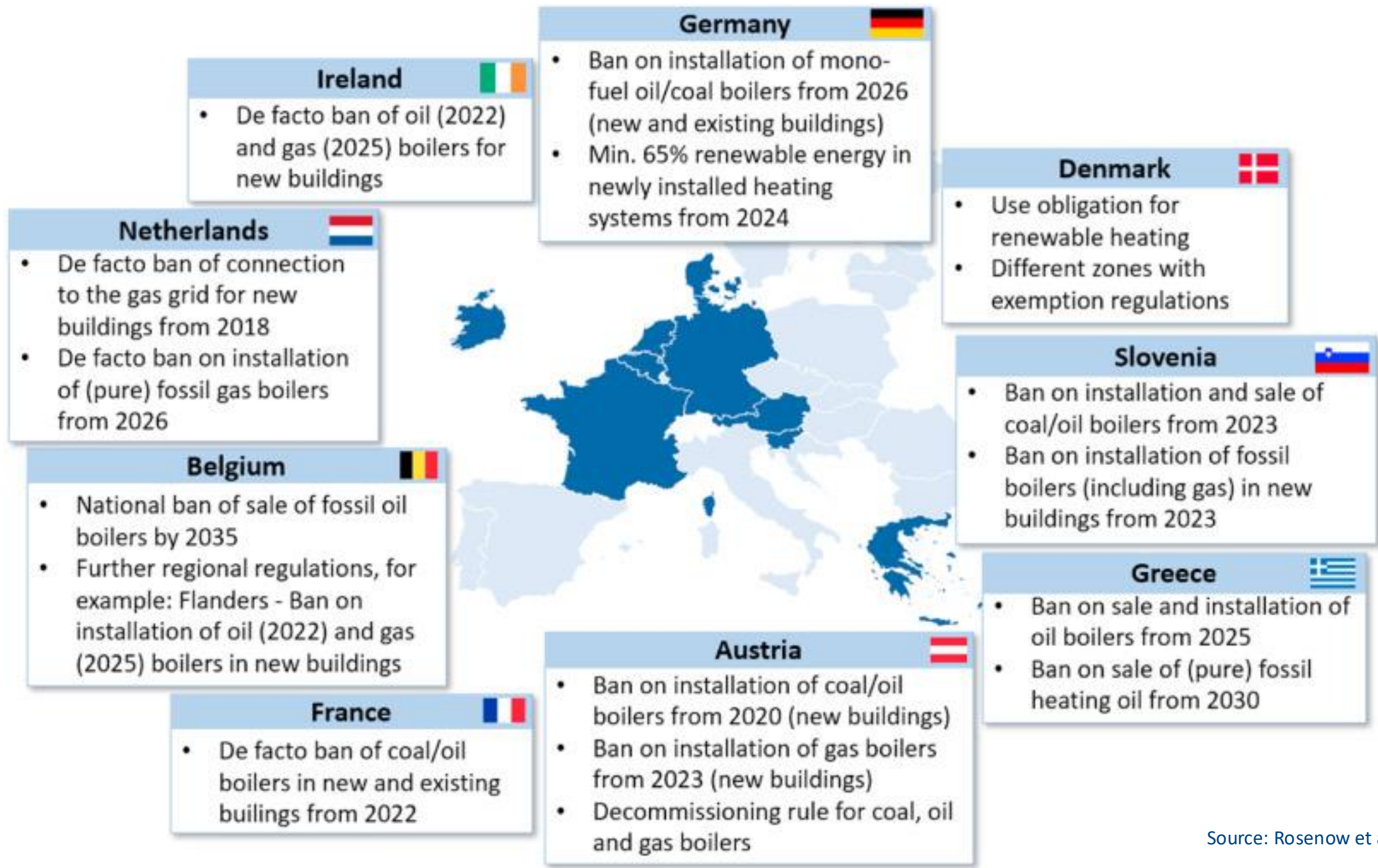


Source: EHPA Market Statistics, Uniclimate, BDH, Umweltbundesamt, SPIUG, Assotermica, BRG



2

Politieke tegenwind



HABECKS

HEIZUNGSHAMMER

STOPPEN!

Bürgerdialog

Alt-Blankenburg 12a

13129 Berlin

**06.10.
19 Uhr**

AfD
BERLIN
PANKOW



Gedwongen warmtepomp 'helemaal koekoek'



Door VALENTIJN BARTELS
17 mei 2022 in BINNENLAND

DEN HAAG - Minister De Jonge (Vol
'groener' moeten worden omhoog
warmtepomp 'op korte termijn een
minister maakt daar nu dwang van

Wilders: Verduurzaming jaagt de huishoudens in ellende

OPINIE Ons land moet stoppen met het aardgasvrij maken van woningen. De alternatieve vormen van energie jagen huishoudens op enorme kosten en diep in de schulden, stellen Geert Wilders en Alexander Kops (PVV).

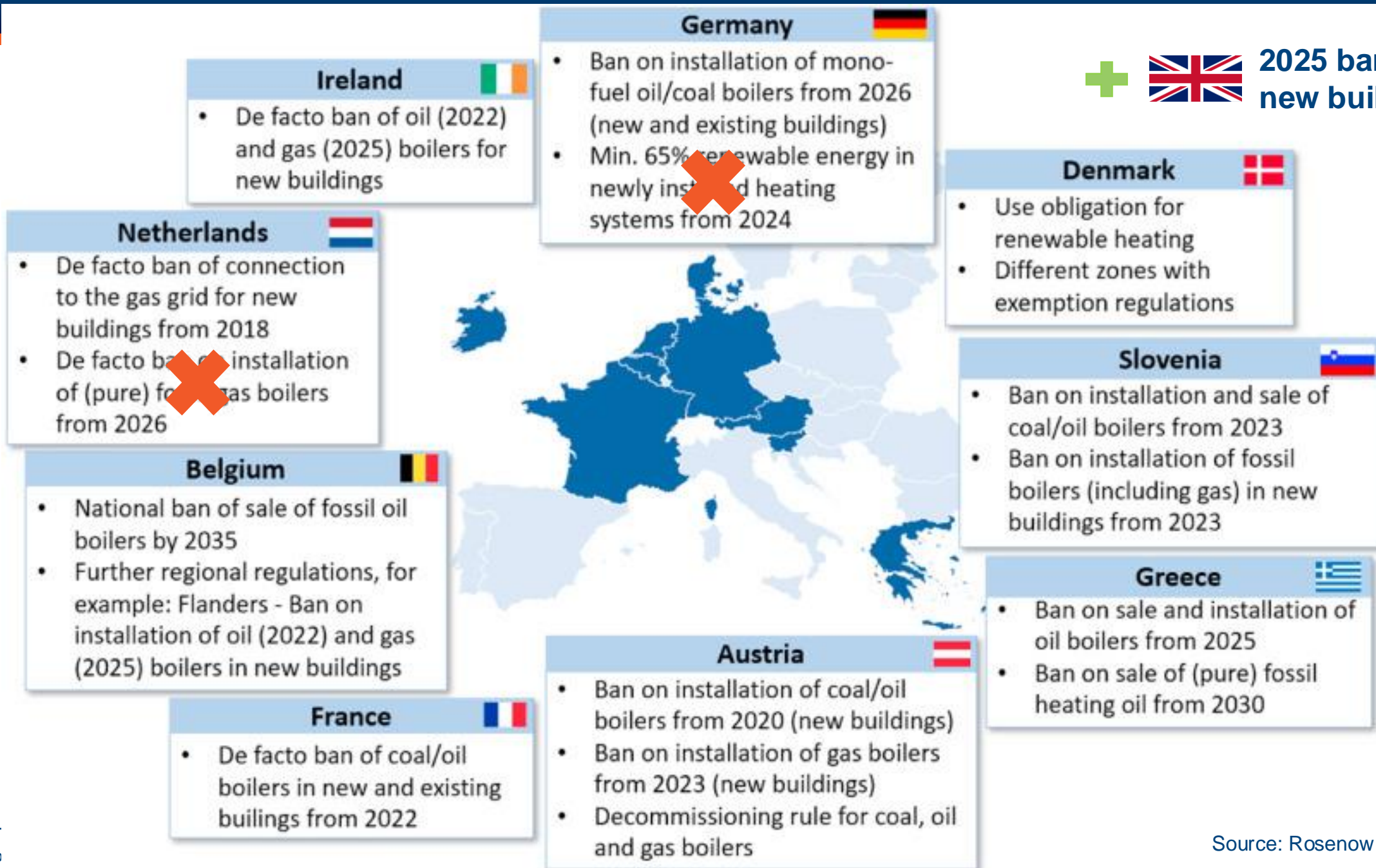
Weerzin tegen Hugo's dure 'dwangpomp': 'Het groene denken slaat door'

Door KLEIS JAGER
06 nov. 2023 in BINNENLAND

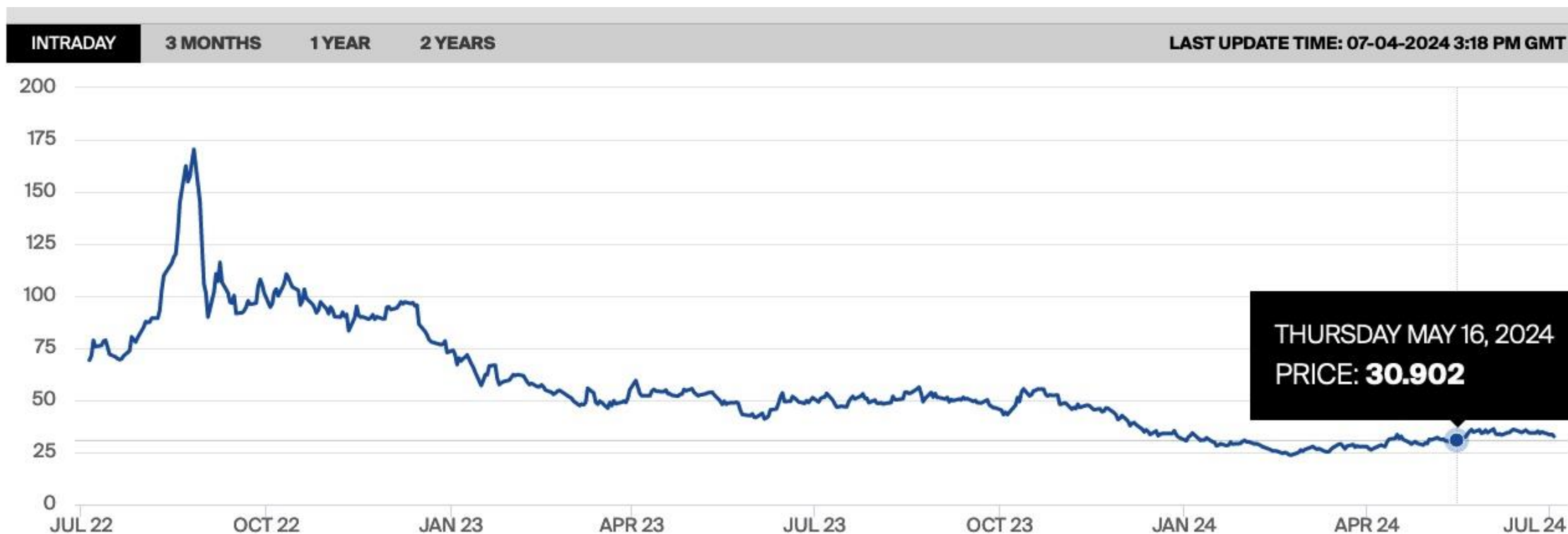


en Alexander Kops 08-09-20, 07:40 Laatste update: 08-09-20, 07:47

  **2025 ban in new builds**



Economische condities: gedaalde gasprijs





Krimp van de markt derde kwartaal op rij

In de eerste helft van 2024 verkochten fabrikanten zo'n 47.000 warmtepompen voor woningen aan groothandels en installateurs. Dat is iets meer dan de helft van de 88.000

Mitsubishi Electric announces 400+ redundancies

4th September 2024



UK: More than 430 workers at the Mitsubishi Electric plant in Livingston face redundancy as a result of the downturn in heat pump demand in Europe.

NOS Nieuws • Vrijdag 16 augustus, 17:08



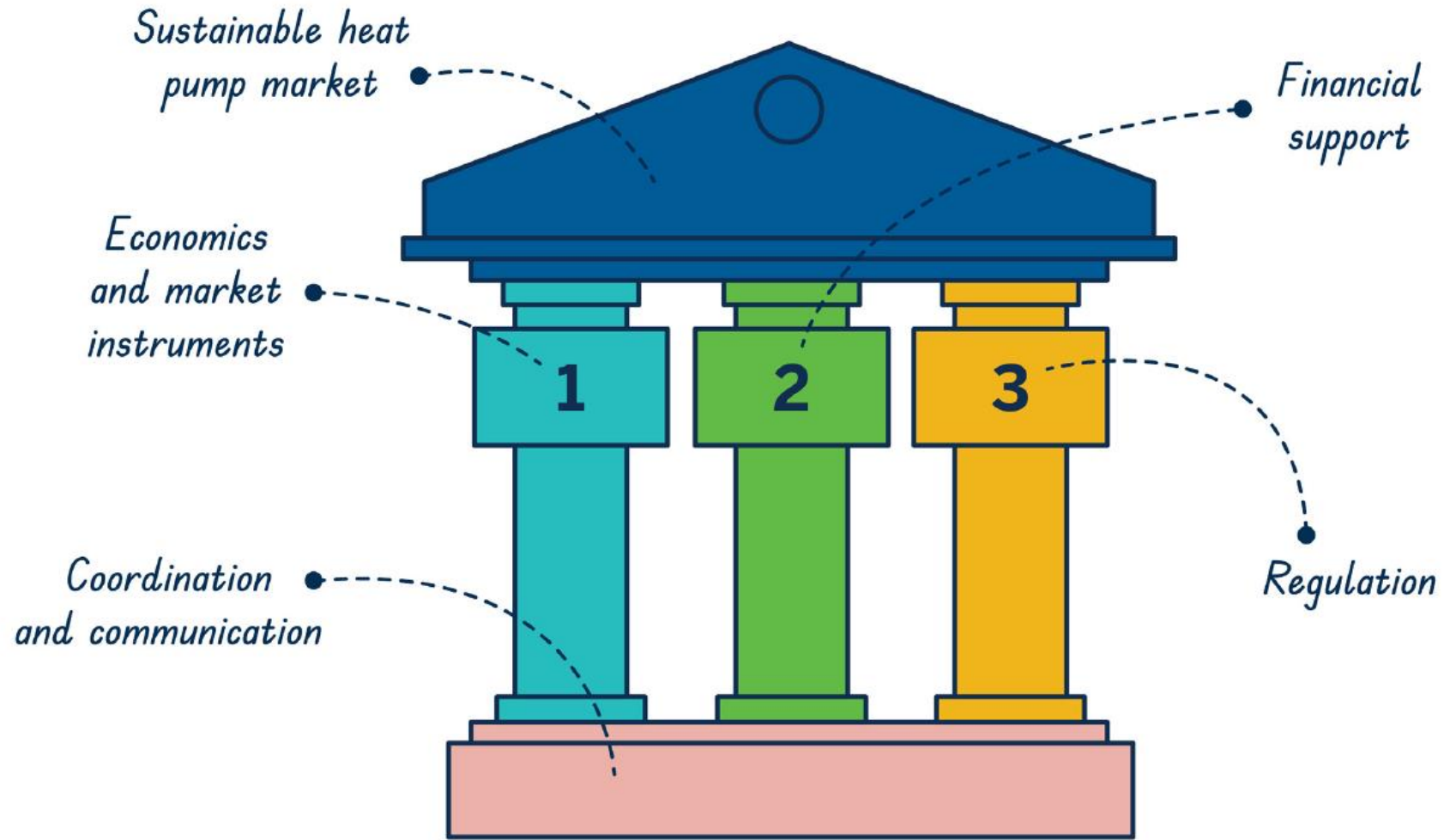
Vijf vragen over warmtepompen, nu de prijzen dalen

Sinds de nieuwe coalitie een streep zette door de verplichting om een warmtepomp aan te schaffen, zijn de prijzen van warmtepompen wat gedaald. Is nu dan het juiste moment om een warmtepomp aan te schaffen?

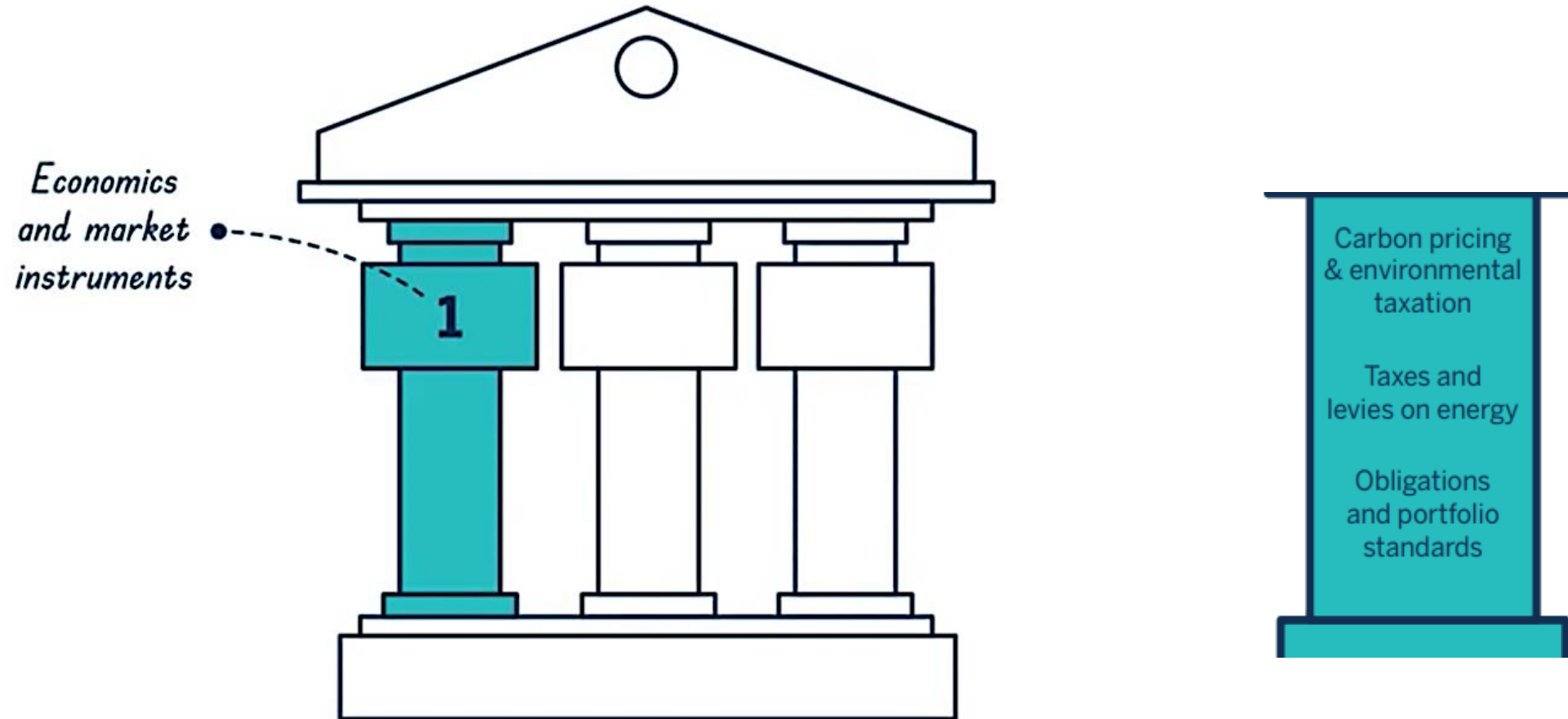
An aerial photograph of a building's roof, featuring a blue grid pattern and orange tiles. A dark blue semi-transparent rectangle is overlaid on the left side of the image, containing the number '3' and the text 'Hoe nu verder?'.

3

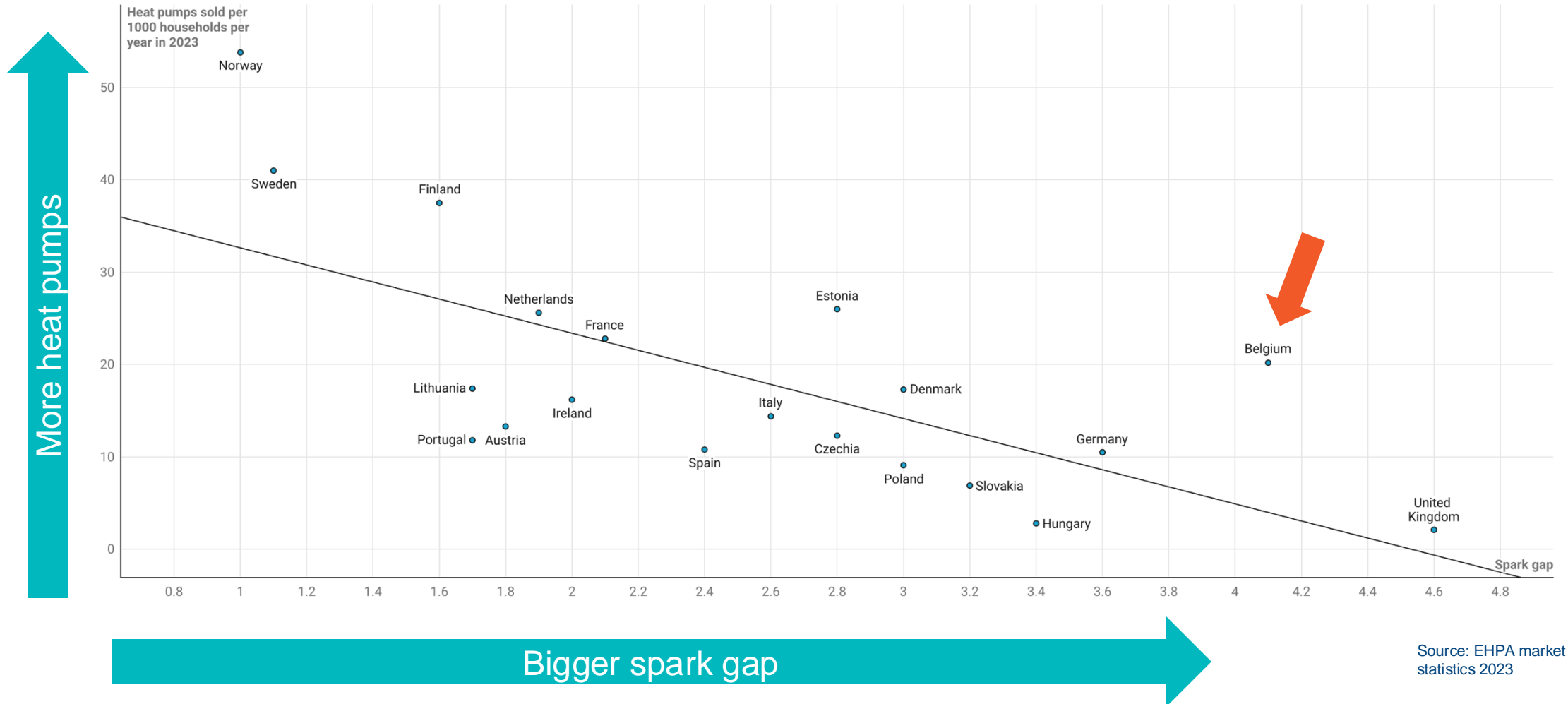
Hoe nu verder?



Pilaar 1: Economische- en marktinstrumenten



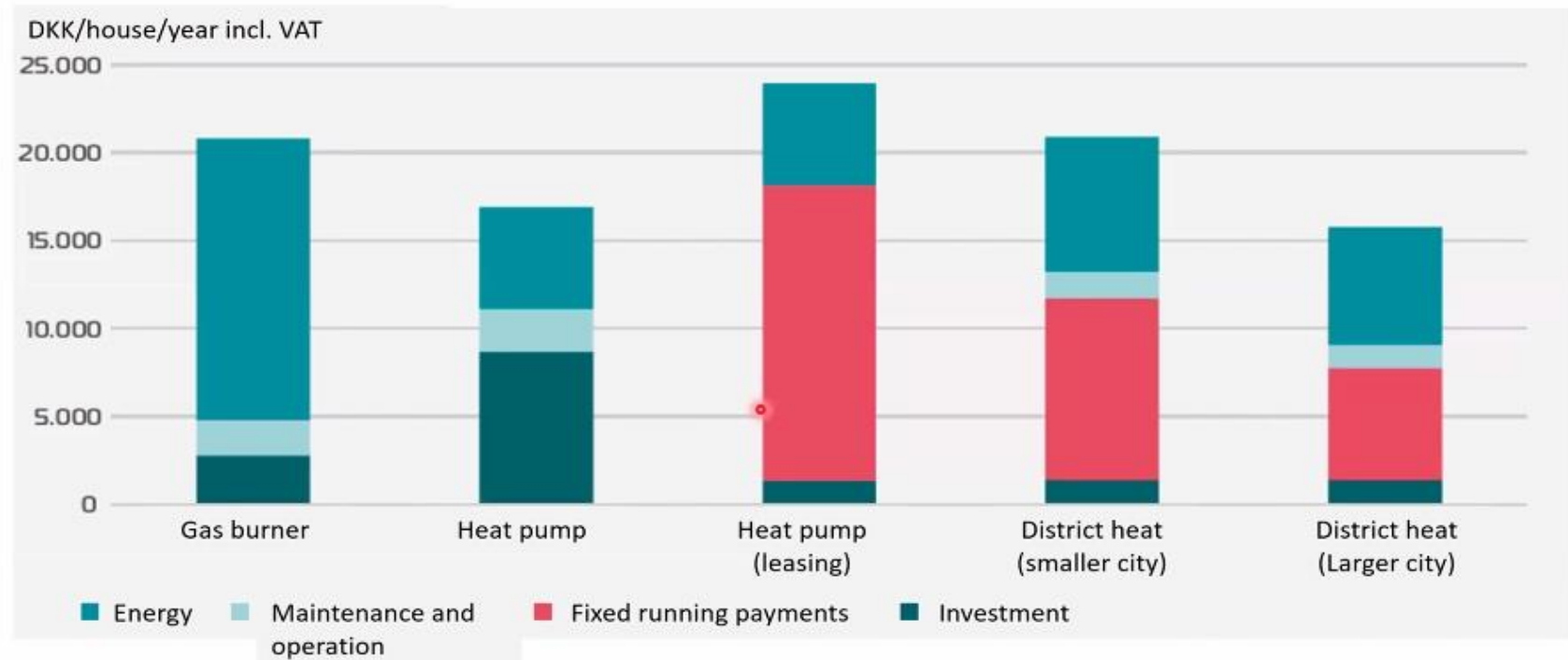
Grotere 'spark gap' = minder warmtepompen



Source: EHPA market statistics 2023

Denemarken

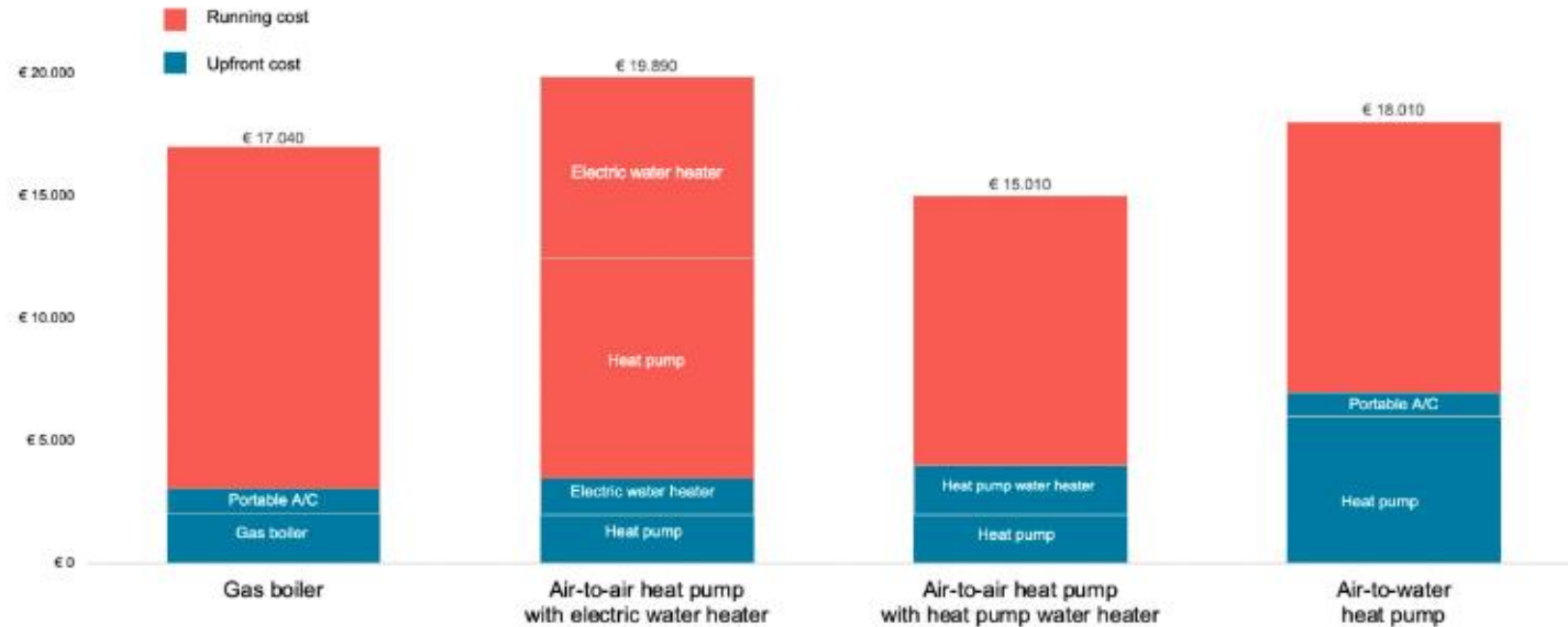
Yearly heating cost (2023)



Source: https://www.kefm.dk/Media/638459533724126884/Nekst_Farvel%20til%20gas%20i%20danske%20hjem.pdf

Spanje

Figure 5. Total cost of ownership of a gas boiler, an air-to-water heat pump, and an air-to-air heat pump (with electric water heater and heat pump water heater)

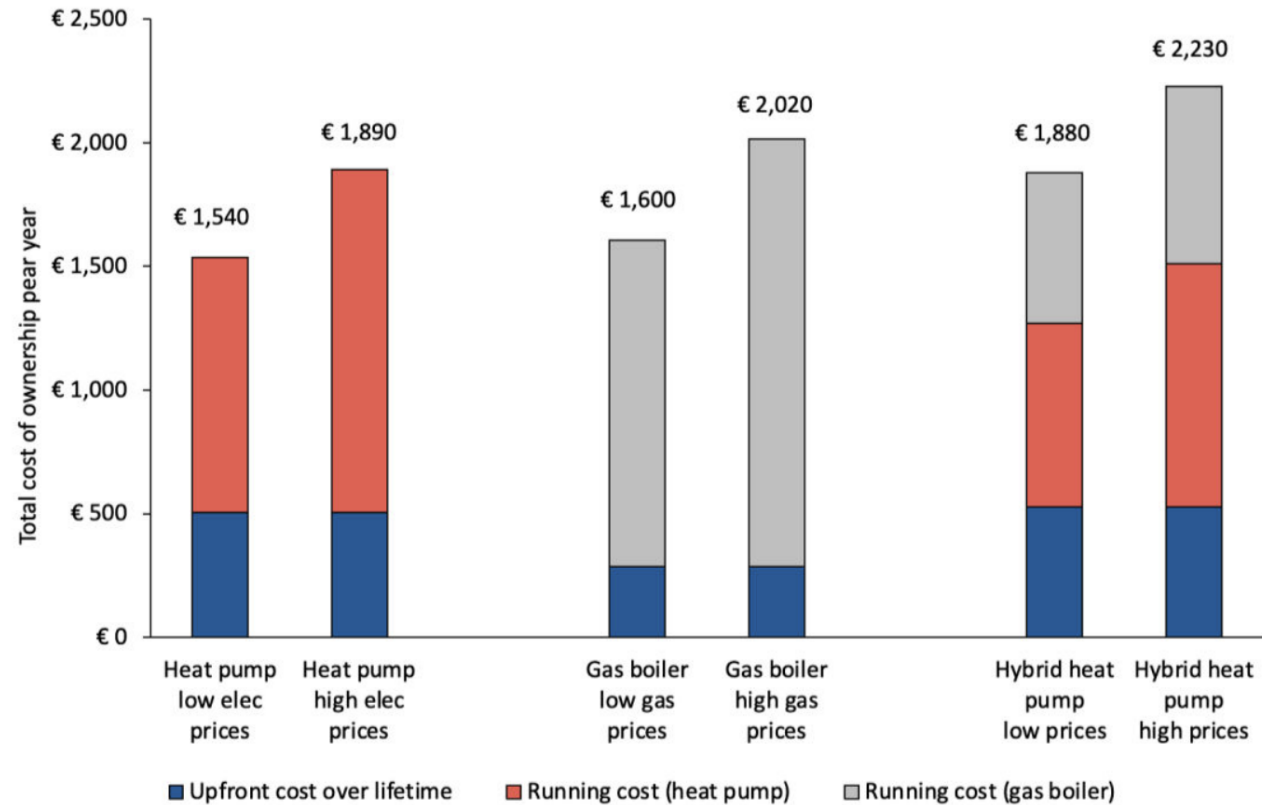


Source: RAP analysis. Please see Annex for full list of data sources.

The upfront costs include a €3,000 subsidy for air-to-water heat pumps. The running cost of cooling is not considered and would be uniform across systems where cooling is possible.

Frankrijk

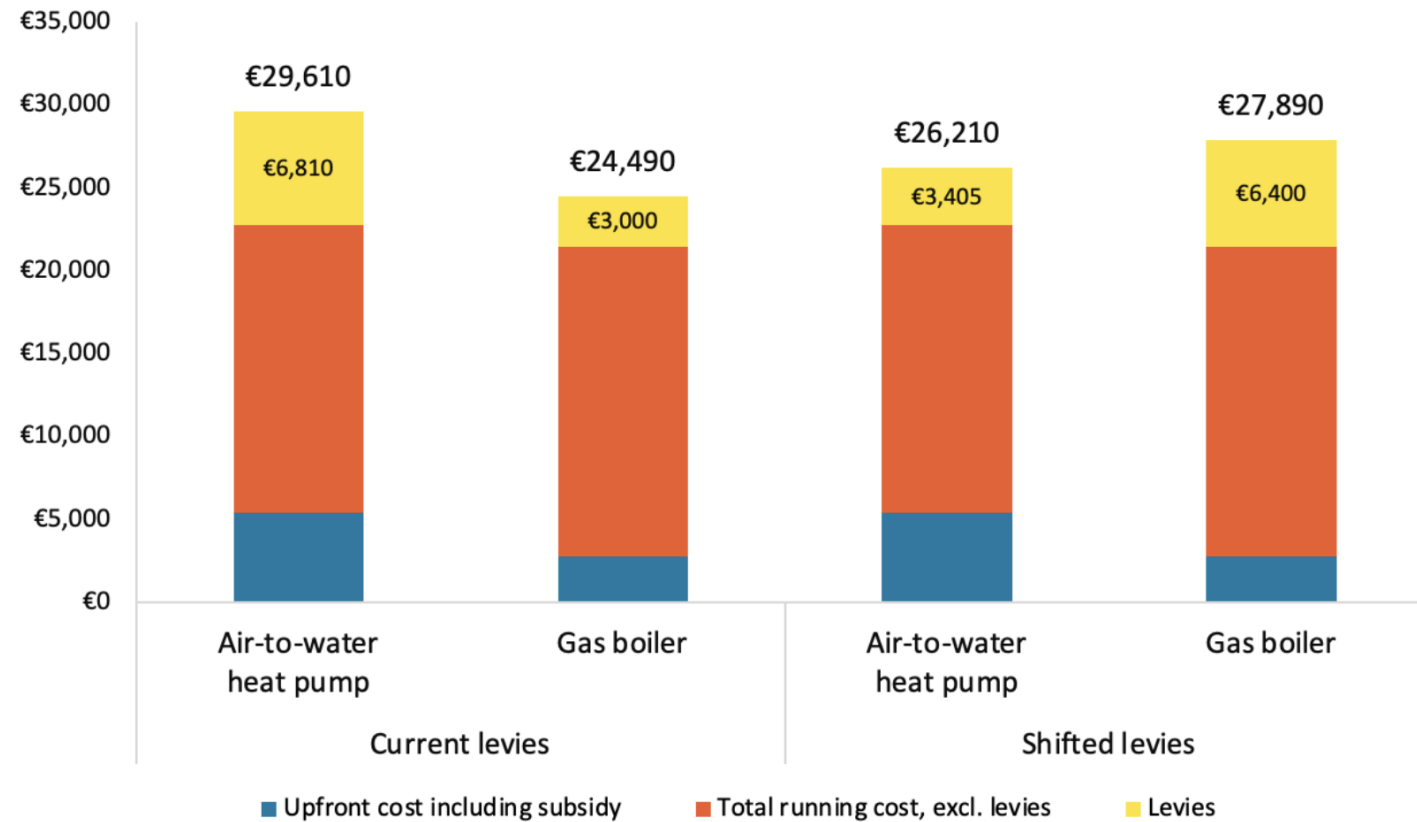
Figure 9. Yearly total cost of ownership of a heat pump, gas boiler and hybrid heat pump in France, high-income household



Note: Electricity prices are set at €176/MWh and fossil gas prices are at €72/MWh (both 2021 averages after VAT, left columns) and prices 50% higher (right columns). Subsidy of €2,500 included for heat pump and hybrid heat pump. See Annex for more details.

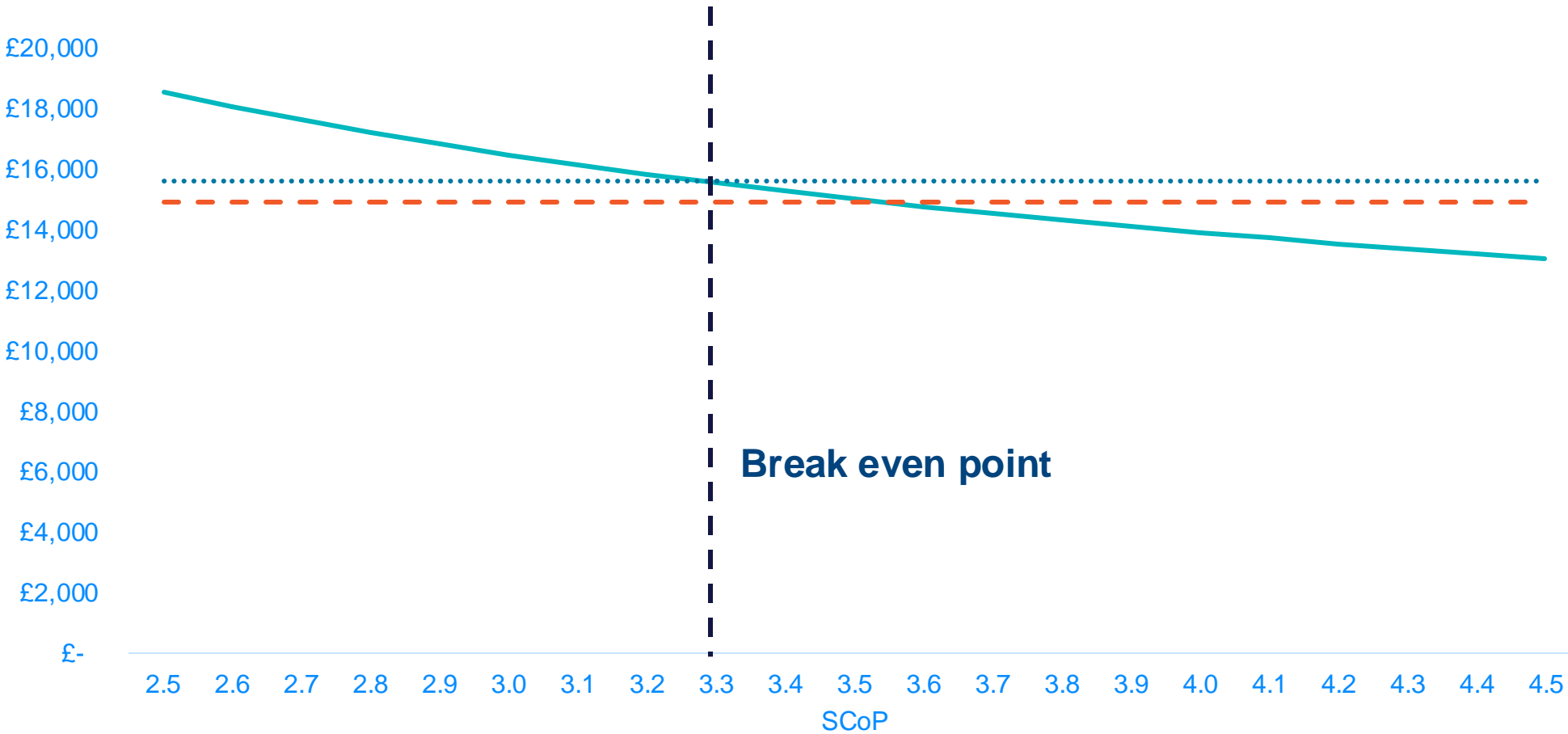
Slowakije

Figure 3. Impact of shifting levies on total cost of ownership of a heat pump and a gas boiler



Source: Eurostat. (2023a). *Disaggregated final energy consumption in households* [Data set], Eurostat. (2023b). *Electricity prices for household consumers - bi-annual data* [Data set], and Eurostat. (2023c). *Gas prices for household consumers - bi-annual data* [Data set]. Calculations detailed in Annex 1.





Verenigd Koninkrijk



— Heat pump - - Gas boiler 92% efficient Gas boiler 85% efficient

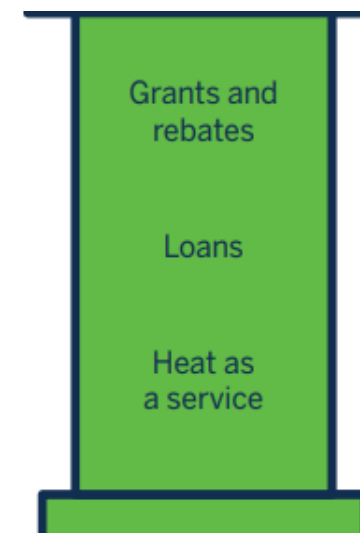
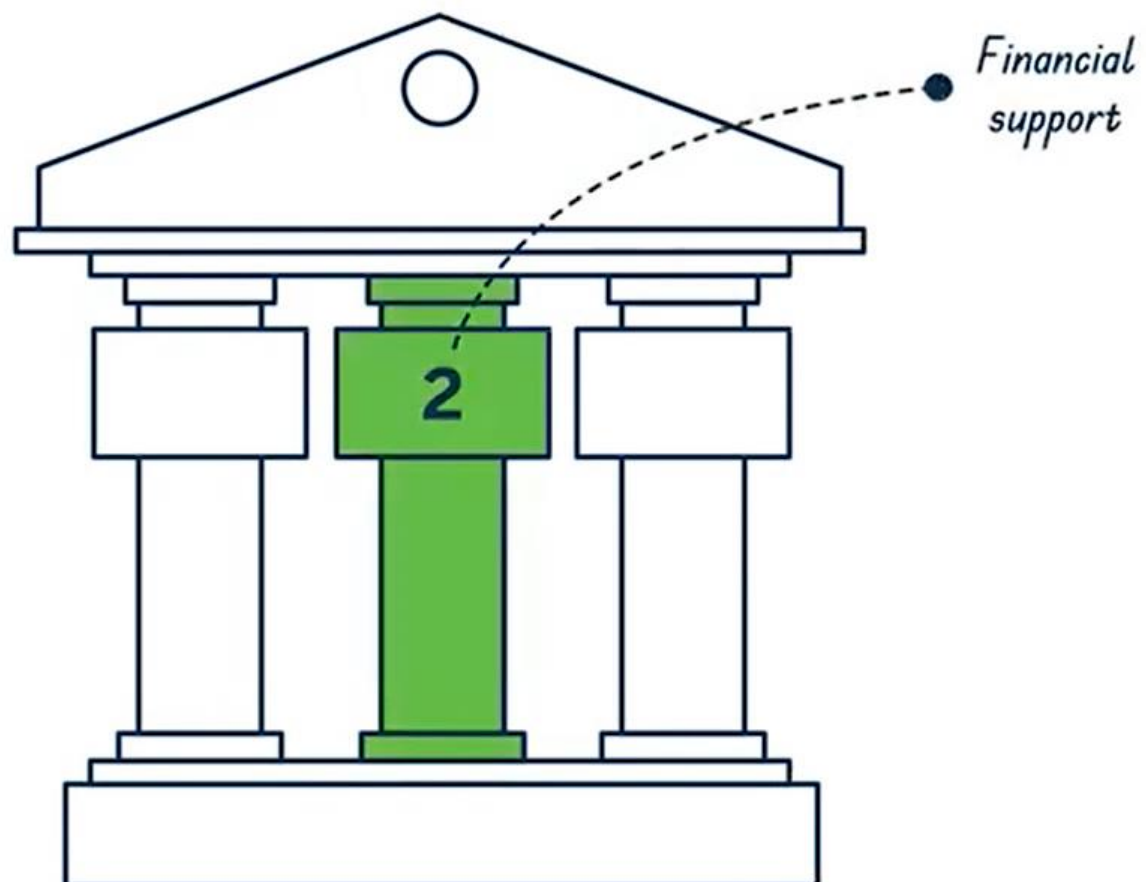
Source: Rosenow et al. forthcoming

Verkleinen ratio stroom-gasprijs

Option	Description	Examples	Advantages	Disadvantages	Key considerations
	Lower tax on electricity for heating	Denmark	<p>Simplicity</p> <p>No negative impact on low-income customers</p>	<p>Loss in revenue</p> <p>If tax rate is low to start with, impact is limited</p>	Potential for incentivising excessive electric resistive heating
	Shift levies to fossil fuels	<p>Netherlands</p> <p>Considered in UK</p>	<p>Simultaneously lowers cost of clean heating and increases cost of fossil heating</p>	<p>Impact on low-income customers using fossil fuels</p>	Need to ensure low-income customers are not disadvantaged, and protected from impact
	Shift levies to public budget	Germany	<p>No negative impact on low-income customers</p>	<p>Additional cost item in public budget</p>	Potentially less stable funding for clean energy programmes previously funded through levies
	Environmental taxation	Swedish carbon tax	<p>Simplicity</p> <p>Source of additional revenue to support heat decarbonisation</p>	<p>Impact on low-income customers using fossil fuels</p>	Need to ensure low-income customers are not disadvantaged, and protected from impact

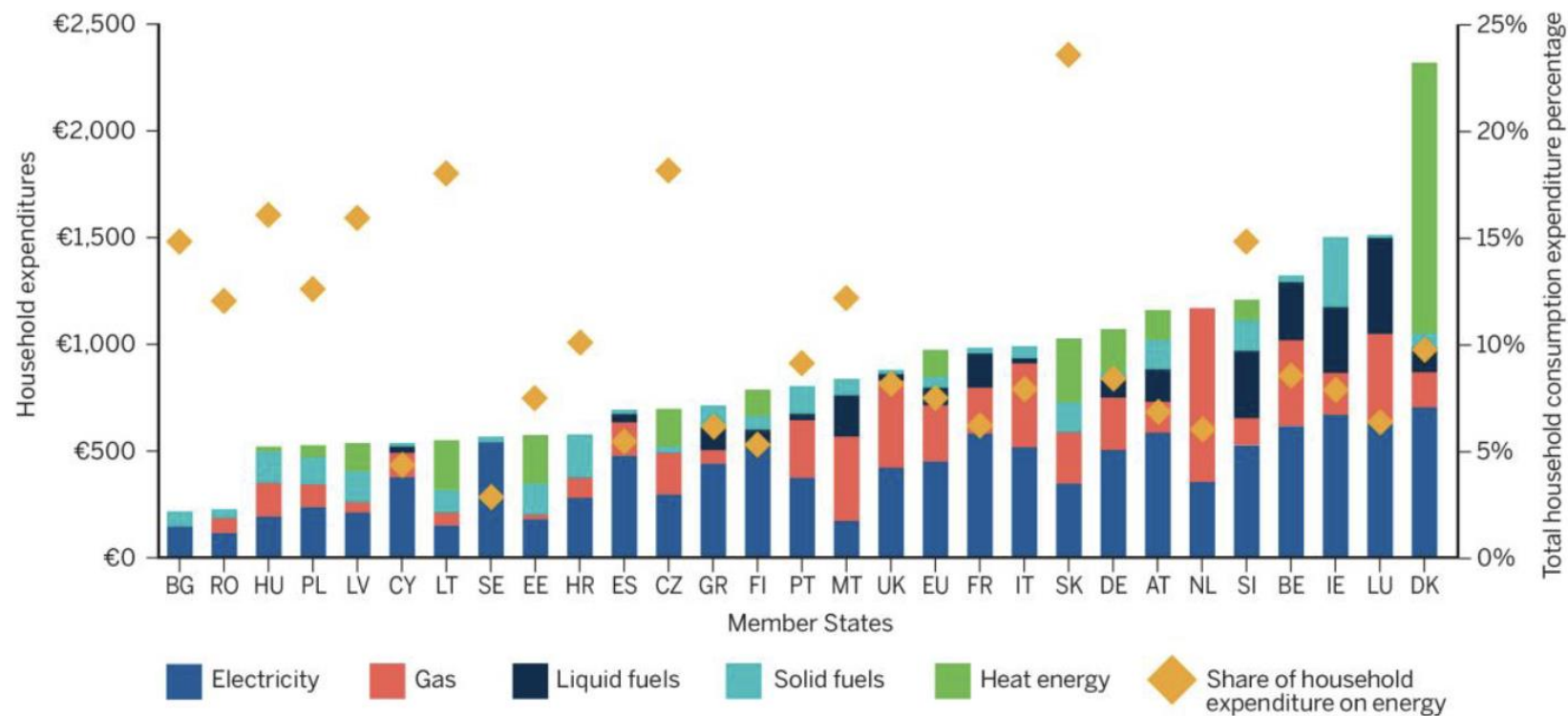
Source: Rosenow et al. 2022

Pilaar 2: Financiële steun



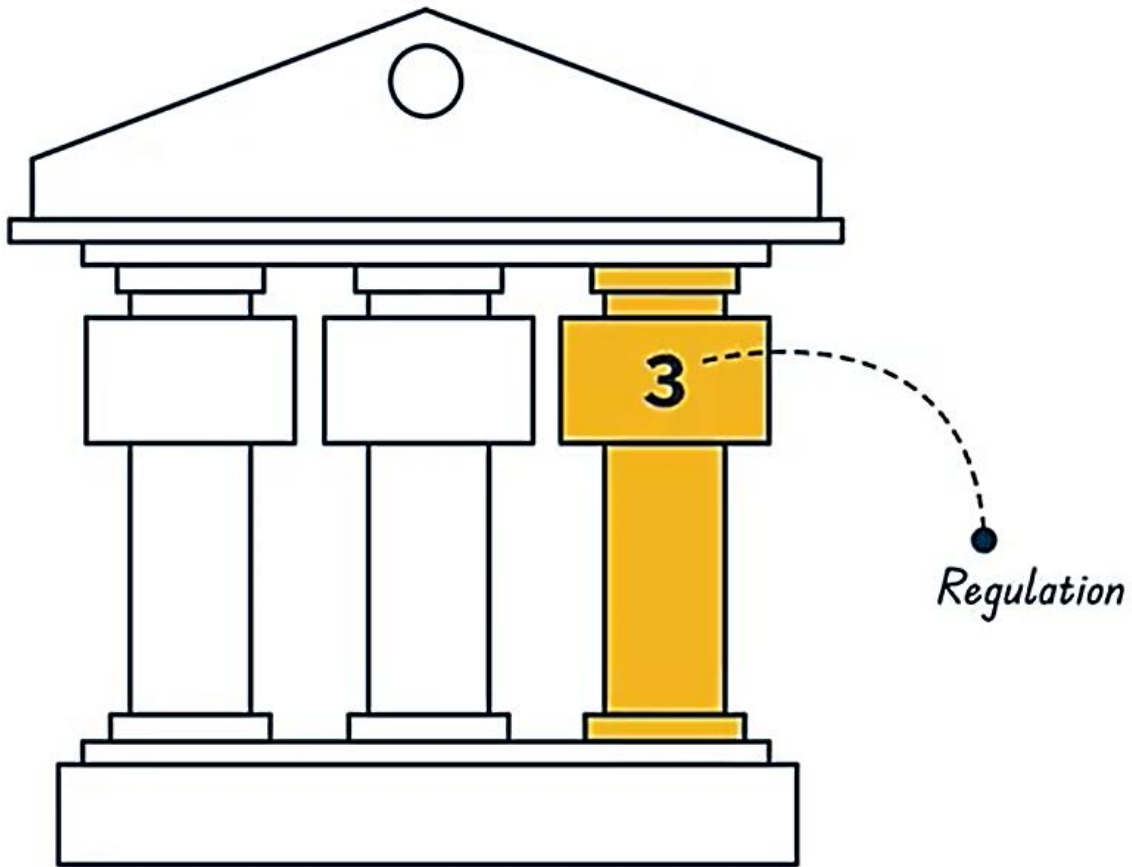
Betaalbaarheid warmte voor lage inkomens

Figure 10. Expenditure on home energy for EU households in the lowest income decile



Sources: Sunderland et al. (2020). *Equity in the energy transition: Who pays and who benefits?*; European Commission. (2020g). *Energy prices and costs in Europe*

Pilaar 3: Regulatie



Legislative overview of heating & cooling

Cool Heating Coalition

EED

- Art. 4 – Collective reduction of FEC by 11,7% by 2030
- Art. 5 – All public bodies combined must reduce their FEC by 1,9% annually compared to 2021
- Art. 6 – Renovate 3% of total floor area of heated & cooled public body buildings each year to NZEB or ZEB
- Art. 8 – Cumulative end-use savings obligation annually

EPBD

- Art. 5-8 – Minimum requirements for new buildings and existing buildings that undergo major renovation
- Art. 9 – Minimum energy performance standards and trajectories for progressive renovation
- Art. 11 – Technical building system (efficiency requirements)

F-GAS REGULATION

- Mandates HFC phase-out
- Mandates use of low GWP alternatives in key sectors
- Requirements to produce leakage and support training of technicians

SCF

- Art. 1 – Focus on households in energy poverty
- Art. 2(1) – Legal definition of energy poverty
- Art. 6 – Vulnerable households mapping in SCPs
- Art. 7 – Financial support to reduce energy poverty
- Art. 9 – Pass-on of benefits to households and micro-enterprises
- Art. 24 – Monitoring MS performance in tackling energy poverty via SCP

EED

- Art. 8(3) – The proportion of cumulative end-use energy savings that benefits people in energy poverty shall at least be equal to the proportion of people that are affected by energy poverty
- Art. 24 – Empowering and protecting vulnerable customers and alleviating energy poverty

REDUCING ENERGY DEMAND FOR H&C

REDUCING THE CLIMATE IMPACT OF COOLING TECHNOLOGIES

SOCIAL ASPECTS

PHASING OUT FOSSIL FUELS

PLANNING, DATA AND INFORMATION

FINANCING AND ENERGY PRICING

EPBD

- Art. 9b – Definition of ZEB
- Art. 11 – Technical building system (strive to replace stand-alone boilers powered by fossil fuels in existing buildings to be in line with the national phase-out plans)
- Art. 17(15) – MS shall not provide any financial incentives for the installation of stand-alone boilers powered by fossil fuels from 1 January 2025.
- Art. 3 Annex II – MS are required to include in buildings renovation plans policies and measures 'with regard to' the decarbonisation of H&C and phase-out of fossil fuels in H&C, with a view to complete phase out of fossil fuel boilers by 2040.

EPBD

- Art. 3 – National building renovation plan
- Art. 10 – Renovation passport
- Art. 13 – Smart readiness of buildings
- Art. 14 – Data exchange
- Art. 14 – Financial incentives, skills and market barriers
- Art. 15 a – One-stop-shops for energy performance of buildings
- Art 16-19 Requirements for Energy Performance Certificates
- Art. 20-21 – Inspections
- Art. 22-23 – Requirements for building professionals
- Art. 26 – Information and awareness-raising campaigns

EED

- Art. 7 – Public procurement obligated to adhere to high energy efficiency.

ETS2

- ETS 2 for Buildings, Road Transport and additional Sectors
- Art. 30c – Declining Union-wide quantity of allowances

EED

- Art. 26 – Criteria for efficient district H&C

RED

- Art. 23 – Target for annual increase of RES-H&C share (0.8% until 2025 and 1.1% 2026-2030)
- Art. 23 – Long-term decarbonisation strategies to increase RES in H&C & MS to inform owners/tenants and SMEs on cost-effective measures, and financial instruments on RES in H&C
- Art. 15a – Target and framework for mainstreaming RES in buildings
- Art. 24 – Target for renewables in district heating

EED

- Art. 3 – Energy efficiency first principle
- Art. 13-20 – Metering and billing
- Art. 22 – Information and awareness raising
- Art. 25 – Heating and cooling assessment and planning

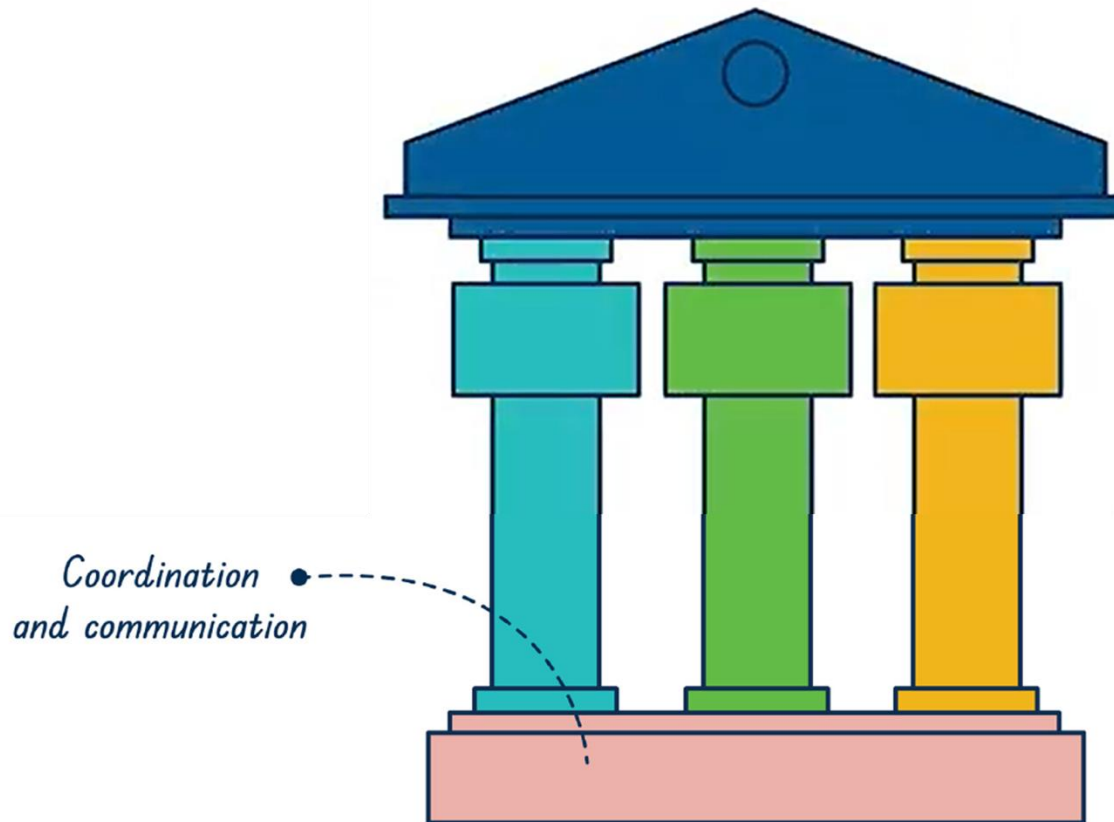
EU TAXONOMY

- Art. 9-15 EU-Tax Reg – Contribution to one of six environmental objectives
- Art. 17 EU-Tax Reg. – DNSH-Criteria
- Art. 18 EU-Tax Reg. – Minimum safeguard
- EU-Tax Annex: Criteria under which H&C related economic activities are labeled as sustainable are listed under items 4.15. to 4.25. Adjacent are further items of section 4 (Energy) and 7 (Construction and real estate activities)

EPBD

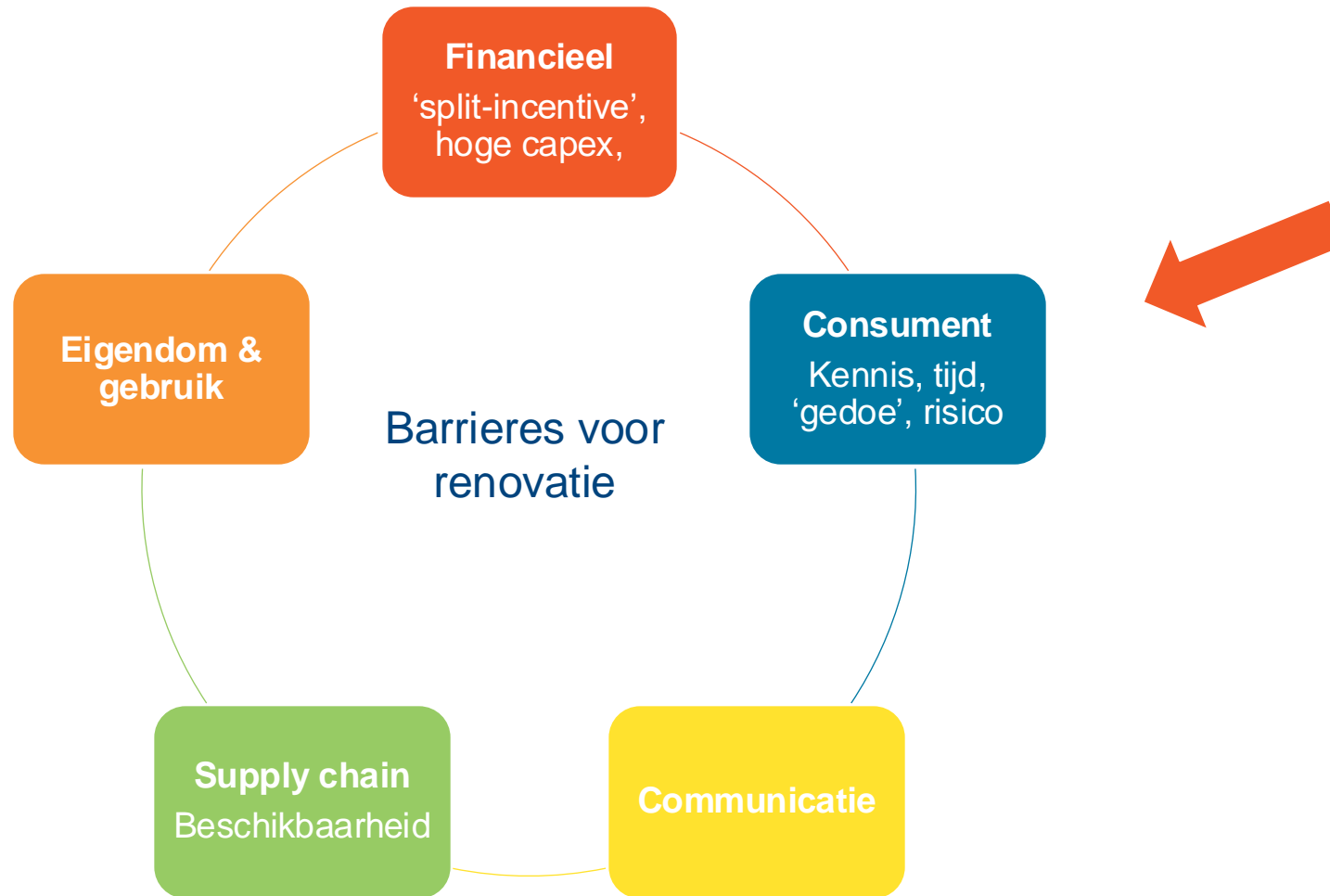
- Art. 14 – Financial incentives, skills and market barriers

Het fundament: Communicatie en Coördinatie



- **Bewustwording**
- **Beschikbaarheid informatie**
- **Training, certificatie, verificatie installateurs**
- **Geïntegreerd aanbod en Garanties**

Maak het makkelijk





Terug naar het fundament:

Coördinatie en Communicatie. Warmtepompen zijn economisch steeds aantrekkelijker, vraag groeit, maar het is nog niet de norm. Makkelijker maken, vertrouwen wekken, zekerheid geven.

Verder lezen

- **Ensure proper incentives and policy frameworks are in place so that efficient and clean technologies, such as heat pumps and district heating, are encouraged.**
 - RAP resource: [A policy toolkit for mass heat pump deployment.](#)
- **Provide targeted support to low-income households.**
 - RAP resource: [Taking the burn out of heating for low-income households.](#)
- **Rebalance taxes and levies from electricity and onto fossil fuels.**
 - RAP resource: [Levelling the playing field](#)
- **Develop regulatory frameworks for clean, efficient, and smart district heating**
 - RAP resource: [Principles for clean, efficient and smart district heating](#)
- **Heat pump insights on France, Slovakia, and Spain**
 - [Gibb, D., Santini, M., & Thomas, S. \(2023\). Olympic mindset: Making France a heat pump leader.](#)
 - [Lowe, R., & Gibb, D. \(2024\). Heat pumps for Spain: Reforming Spanish Energy Policy to support the transition to clean heating.](#)
 - [Gibb, D. \(2024\) Cleaning up heat: policy and the economics of heat pumps in Slovakia.](#)