

# The implementation of the heat transition

Potentials of different technologies in comparison

# Prognos. The facts.

Founded in

# 1959

at the University of Basel by

# 7

professors

# 250

excellent minds from more than

# 30

scientific disciplines like e.g. economics, geography, mathematics, physics, social and cultural sciences



Politically and financially independent institute

Interdisciplinary research in

# 9

locations

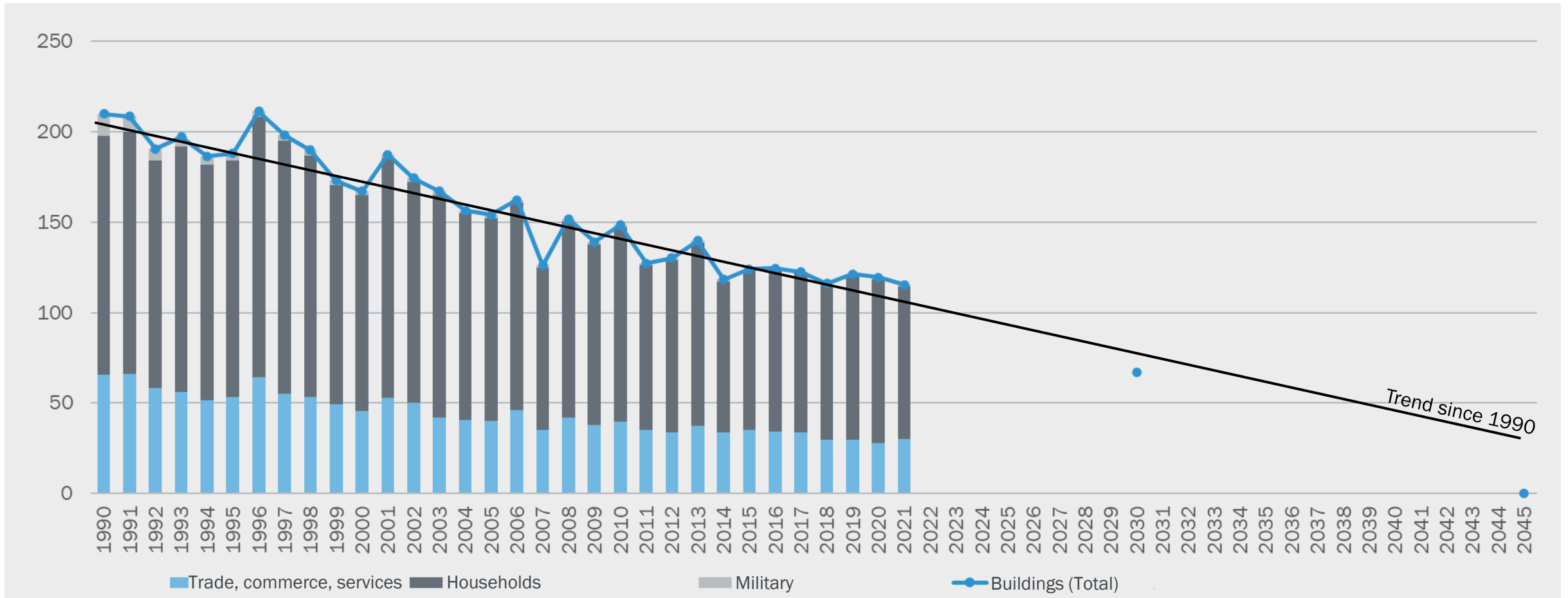
250 –

# 3000

studies & projects yearly

# After years of waiting: The pace must increase!

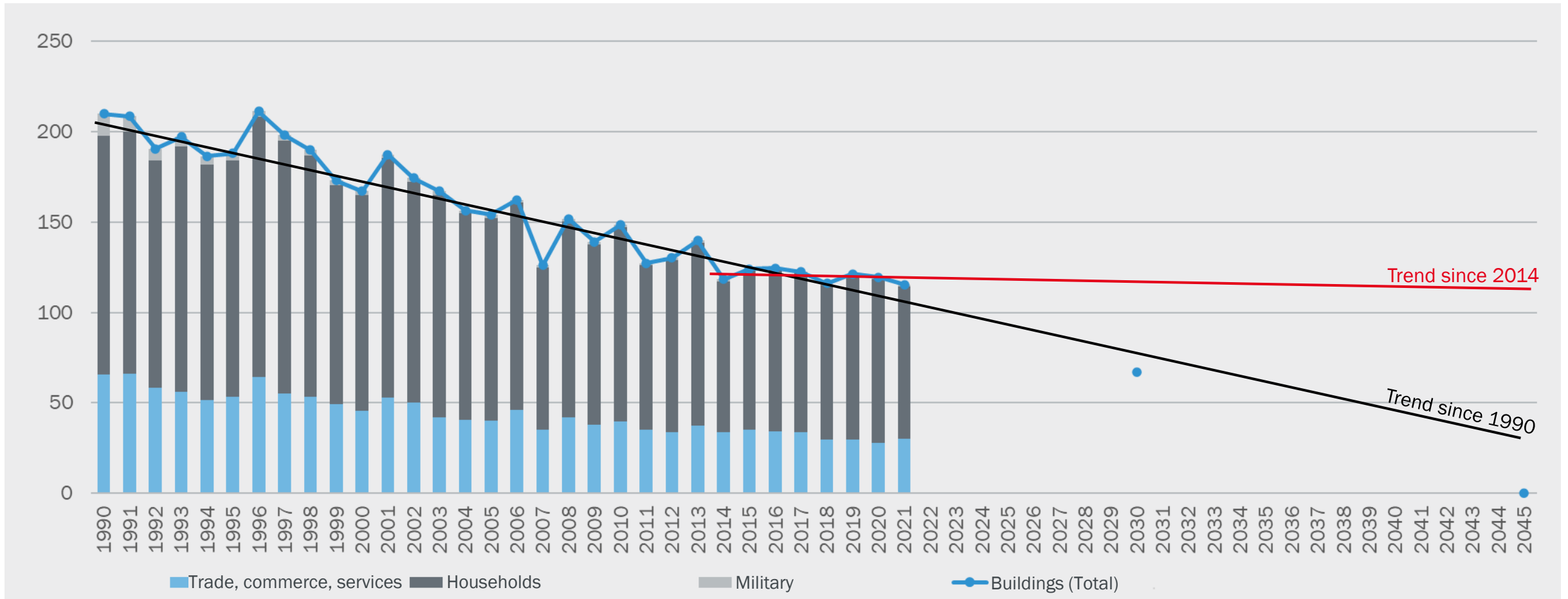
## Emissions from the building sector (mio. t CO<sub>2</sub>-eq)



[Emissionsübersichten in Sektoren](#)

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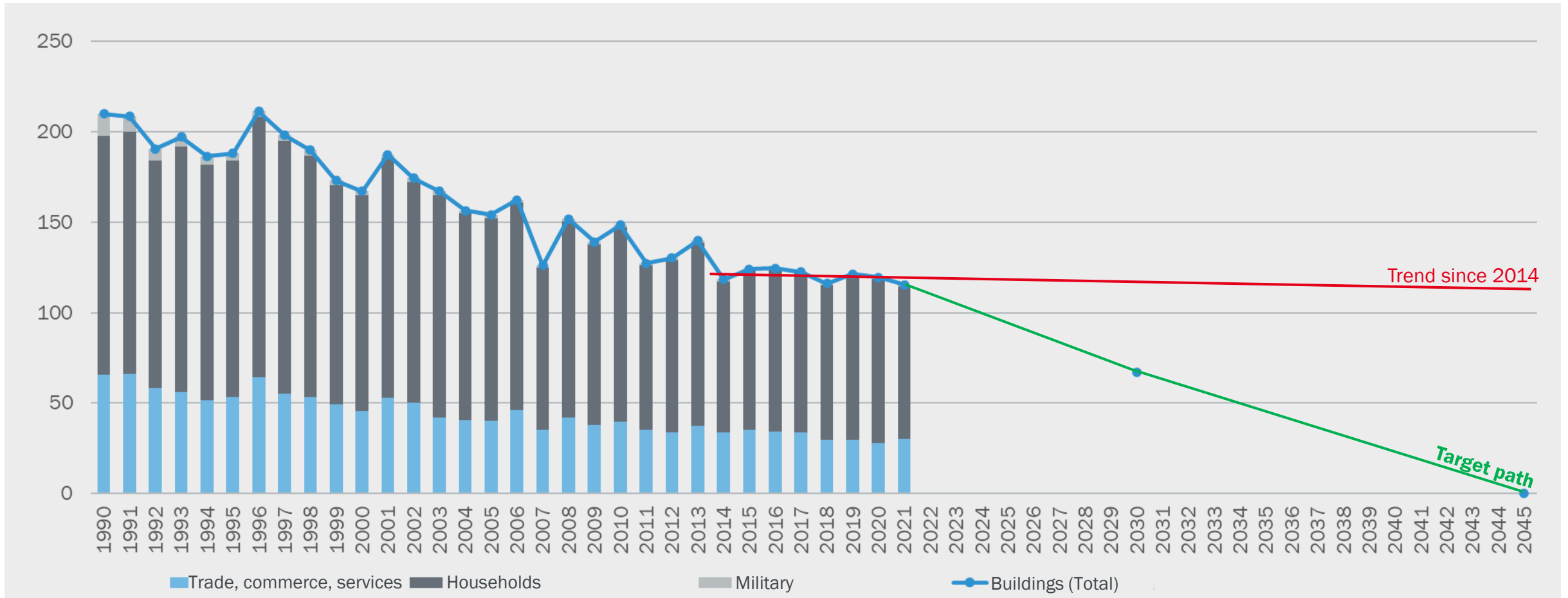
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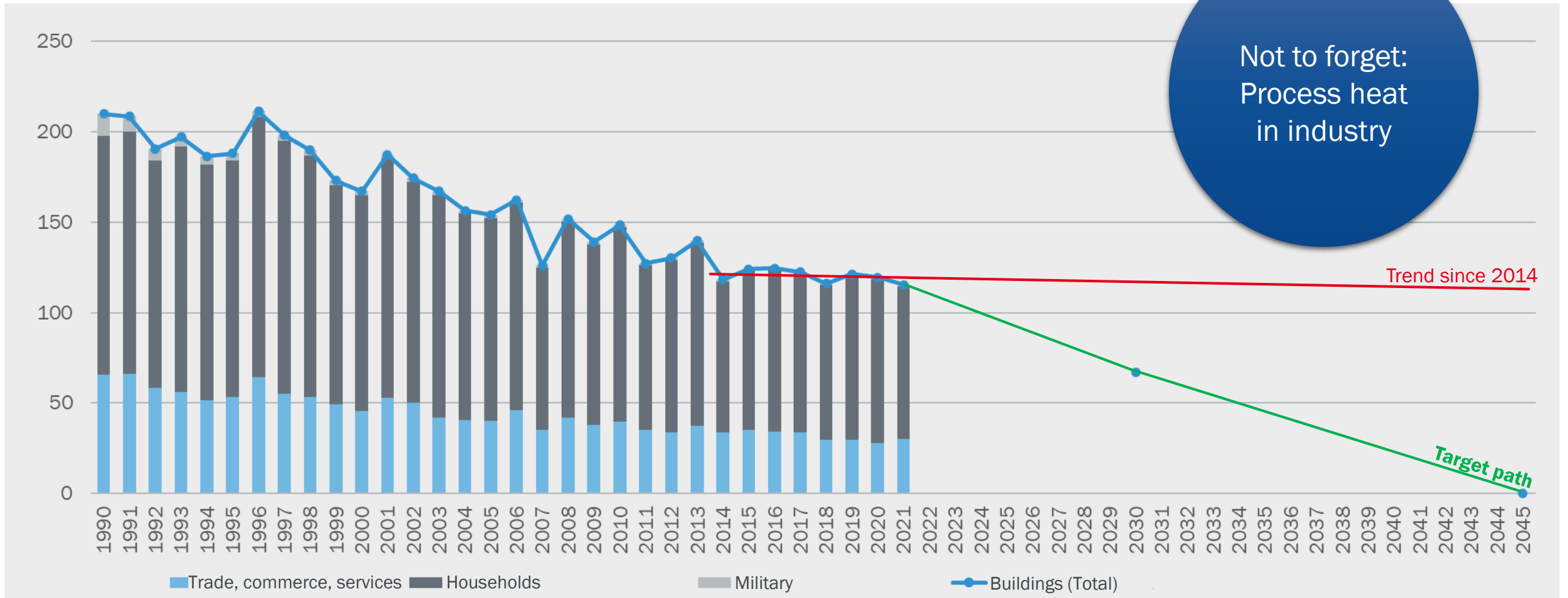
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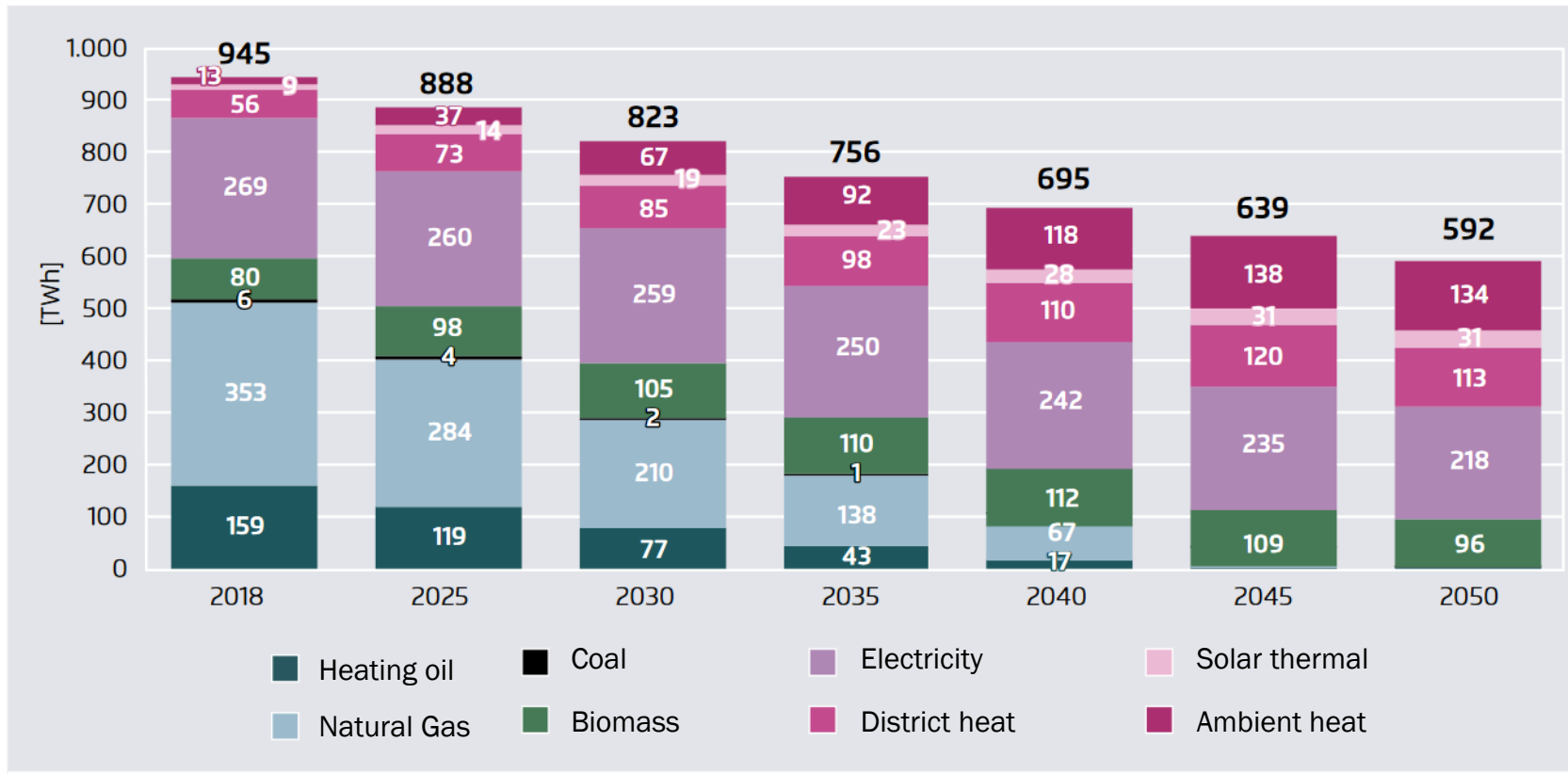
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# The solution: Fossil phase-out in 20 years and max. efficiency

## Scenario studies like the one for Agora Energiewende show the path to climate neutrality



- Heat generation for buildings will have to change radically in the coming decades
- The paths are now steep and leave few alternatives to still meet climate targets

Graphic from: "Klimaneutrales Deutschland 2045" (long version), Agora Energiewende / Final energy consumption in the building sector by energy source.

# The urgency is high: politicians have also understood this

## Mandatory renewable heat

- From Jan 1st 2024, only new heat generators that are powered at least 65 % with renewable energies may be installed.
- This also applies to existing buildings when the old system is replaced.
- The rule was moved up another year in the wake of the recent energy crisis.

## Obligation to renovate the worst buildings

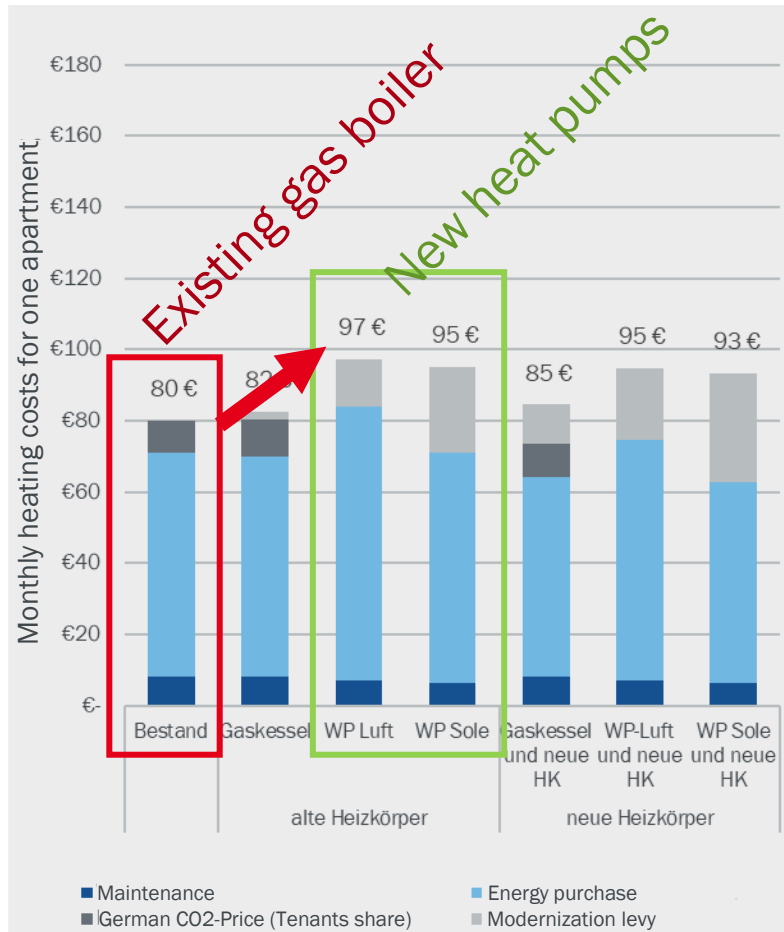
- Currently, so-called MEPS (minimum energy performance standards) are being negotiated at EU level.
- Nevertheless, it is no longer a question of „if“ but only „when and to what extent“ regulation will take place.
- The aim will be to make renovation mandatory for all buildings throughout Europe that fall below an efficiency standard at certain points in time.



# Heat pumps are now cheaper than gas boilers!

Total costs for heat per apartment from tenant's perspective

## Historical energy price level

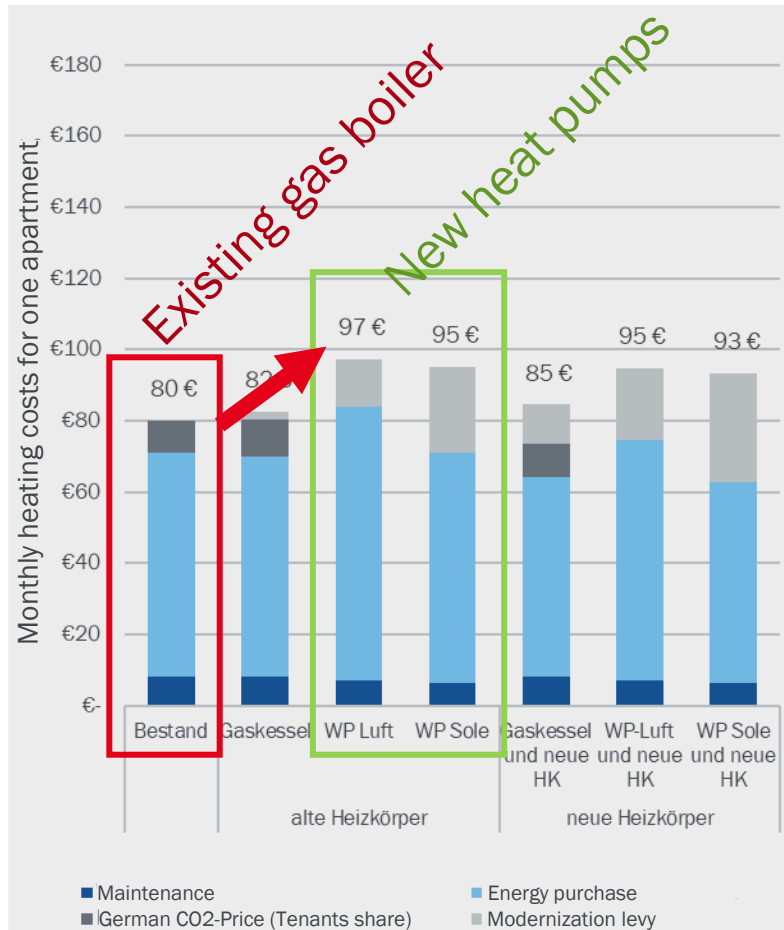


BWP brief report on the current economic viability of heat pumps, 2022 ([Available here](#)).

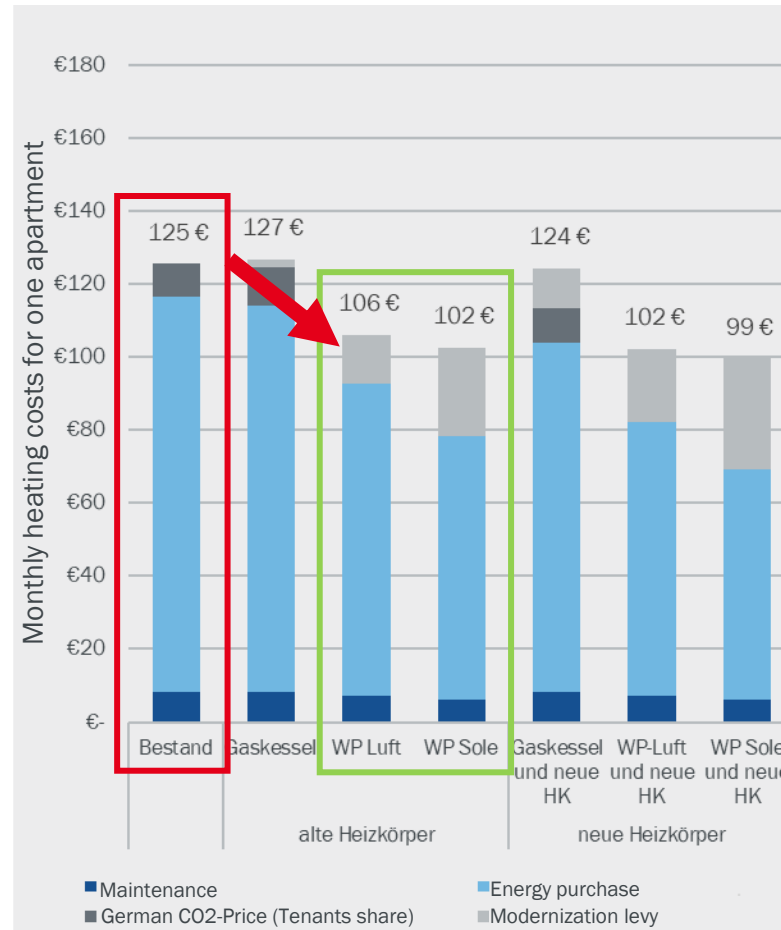
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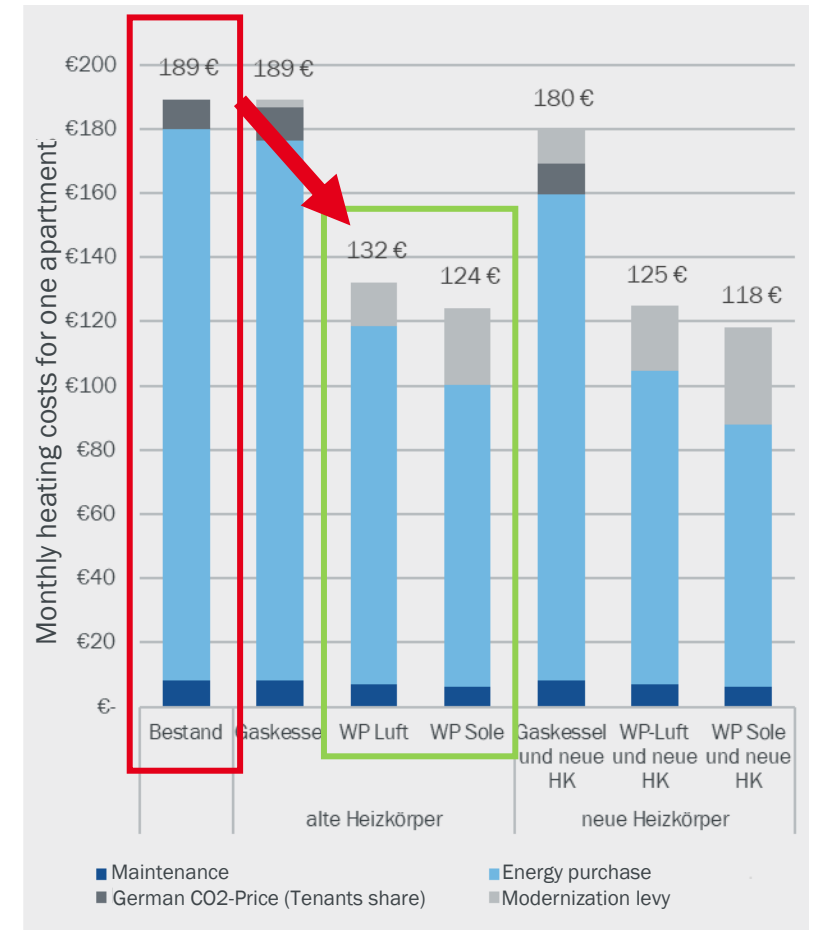
## Historical energy price level



## Average energy price level

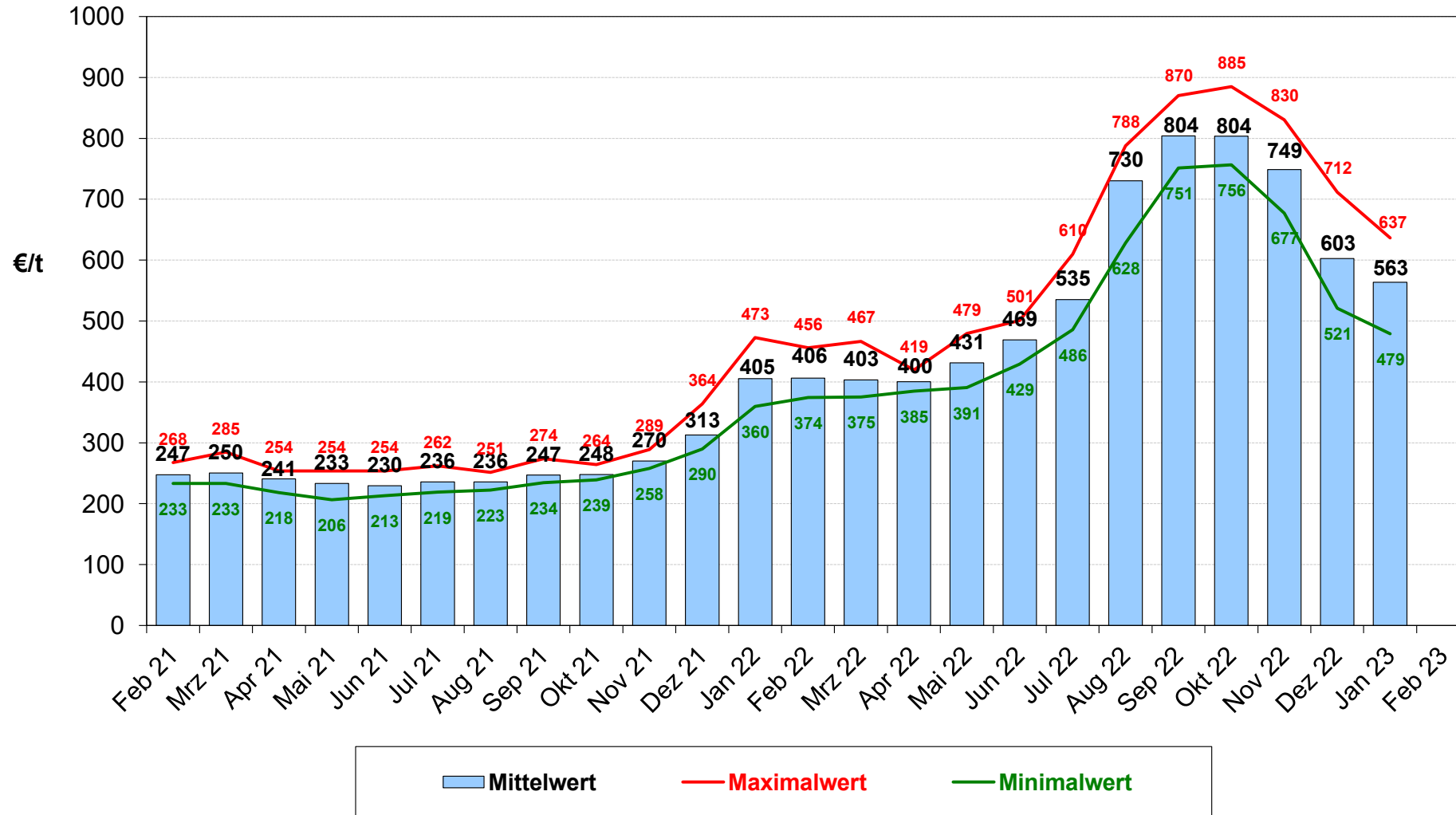


## High energy price level



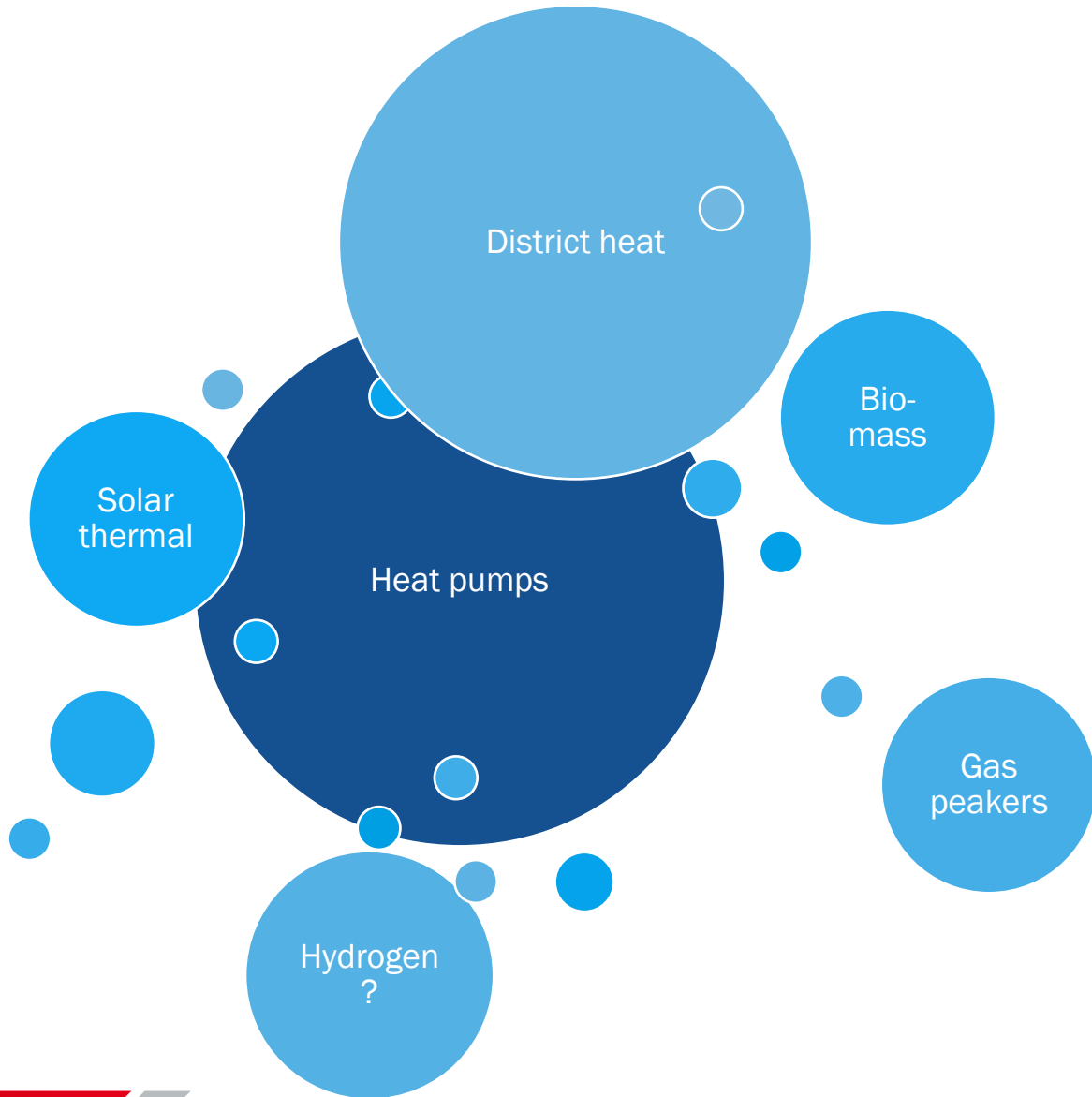
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# Wood pellet prices: A different story



Source: 3N Competence Center Lower Saxony Network Renewable Resources and Bioeconomy e.V. ([See here for updates](#))

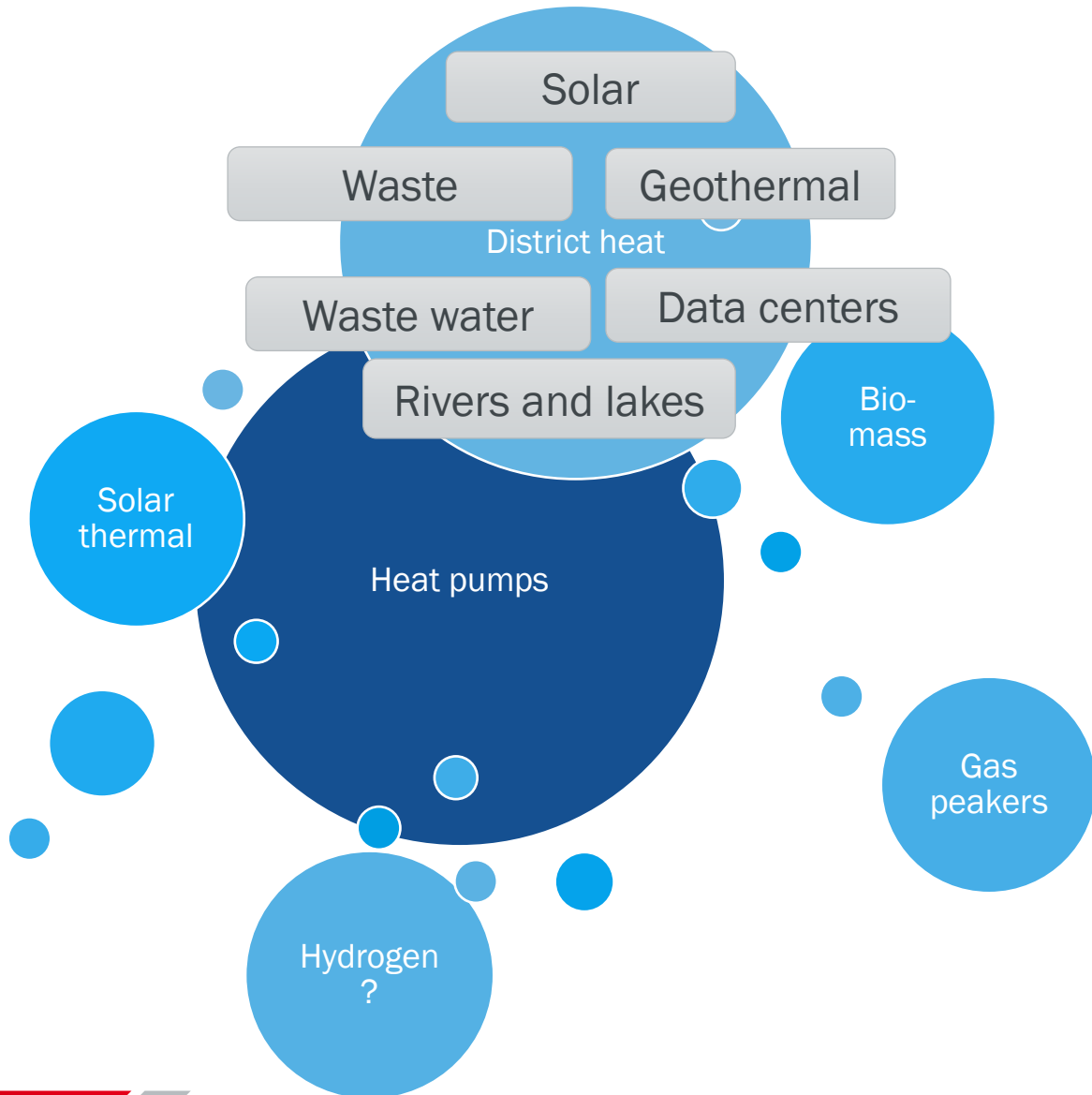
# Limited options, limited potential? Let's start!



## The end of technology open approaches

- Heat pumps are the first choice for both small and large buildings in rural and urban areas of the future. The biggest challenge is availability.
- Today, biomass accounts for the largest share of renewable heat, but this will have to change in the coming decades. Limited potentials hardly allow for new installations that burn biomass.
- Solar thermal above all in district heating, but also as a worthy energy saver for all other technologies.
- Hydrogen will not arrive before 2030, and by then it will be too late for decentralized applications.

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- Hydrogen will not arrive before 2030, and by then it will be too late for decentralized applications.
- In cities, the number of connected buildings in district heat systems will still increase. Due to higher efficiency with almost stable energy amounts.

# Conclusion: The market is changing – predictably!

- Changing price structures have moved the heating market significantly in the direction of renewable heating over the past 14 months
- Obligations will continue to generate a lot of momentum in the coming years.
- Supply chain issues and shortage of workers are already leading to long waiting times.
- Industry and trade can learn from the last few months and prepare for the coming years.
- Continued high investment costs call for innovative business models and ongoing subsidies.





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**Thank you for your  
attention!**

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