

October 2021

# Decarbonising our cities and homes

**SHIFFT lunchtalk 18.10.2021**

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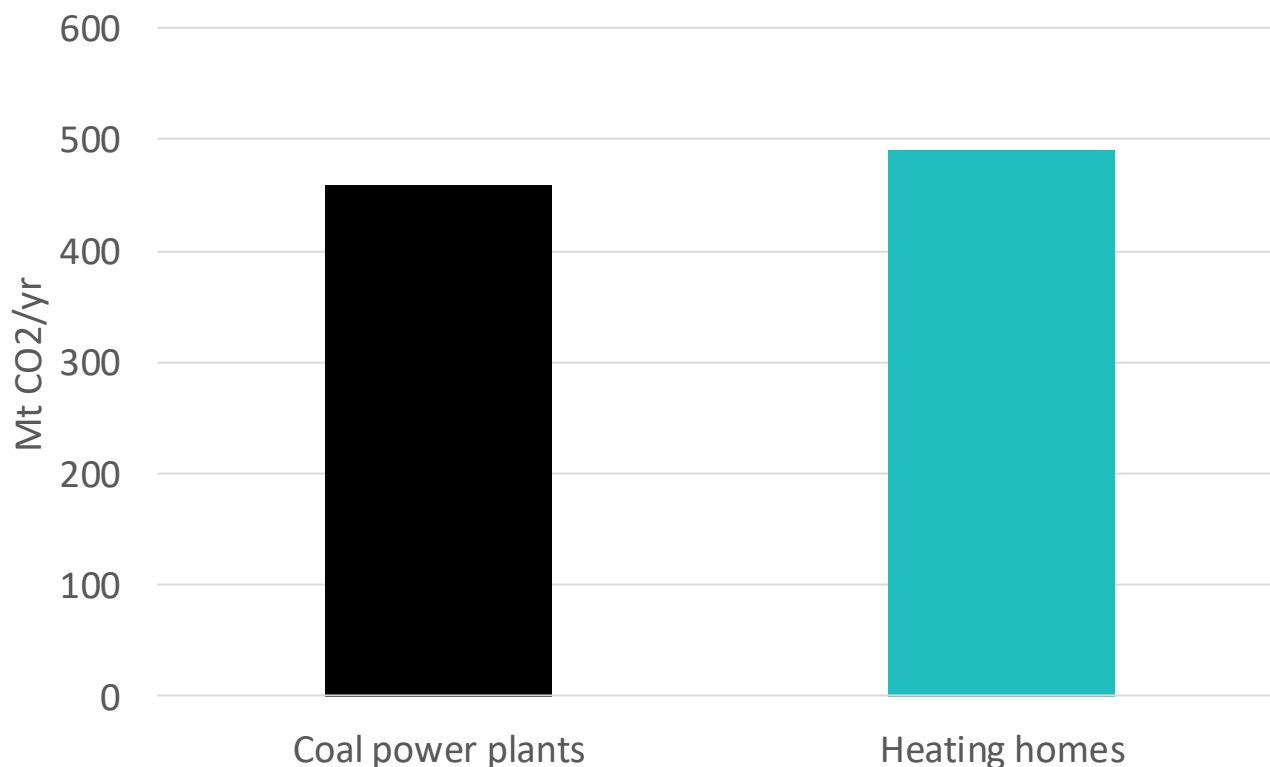




# 1 The challenge

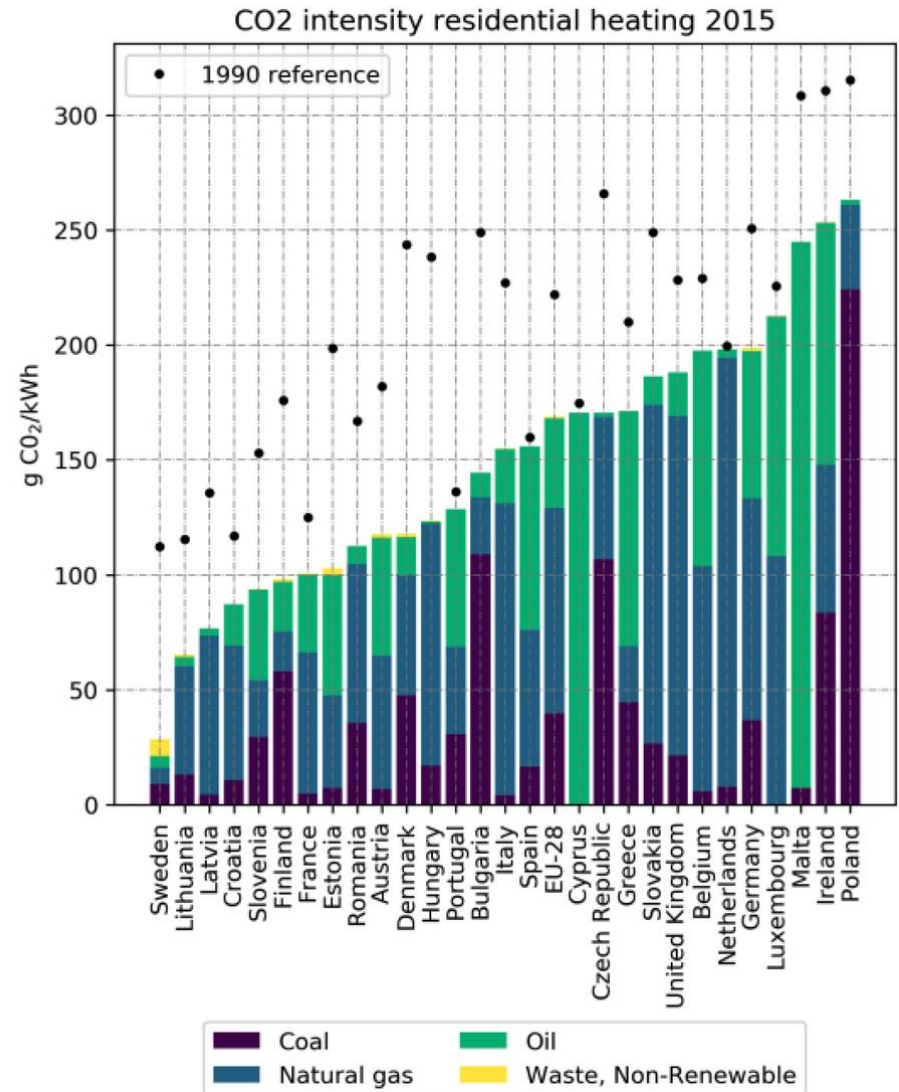
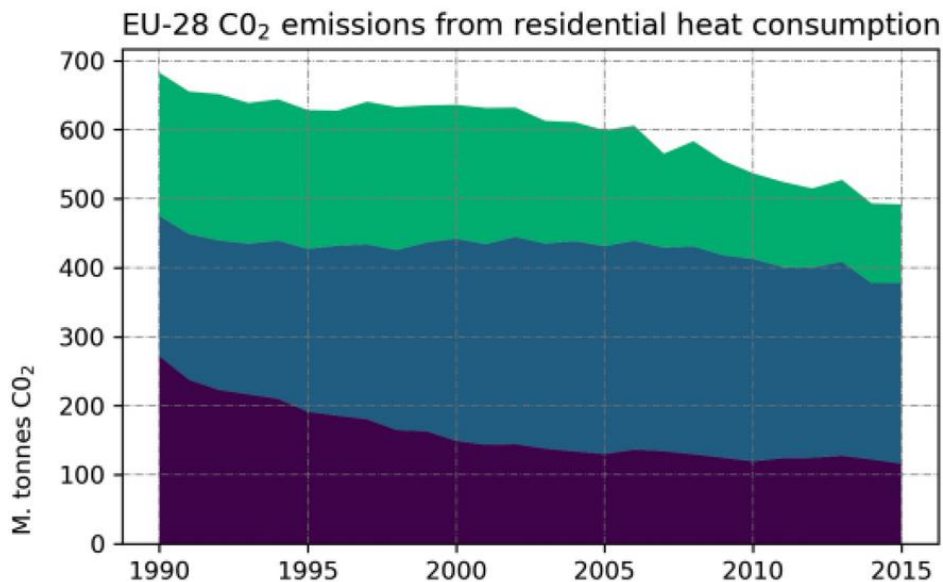


# Heating emits more carbon than all coal power plants in Europe



Source: Europe Beyond Coal (2020), Bertelsen and Mathiesen (2020)

# Improvements but not fast enough



Source: Bertelsen and Mathiesen (2020)



# 2 The destination





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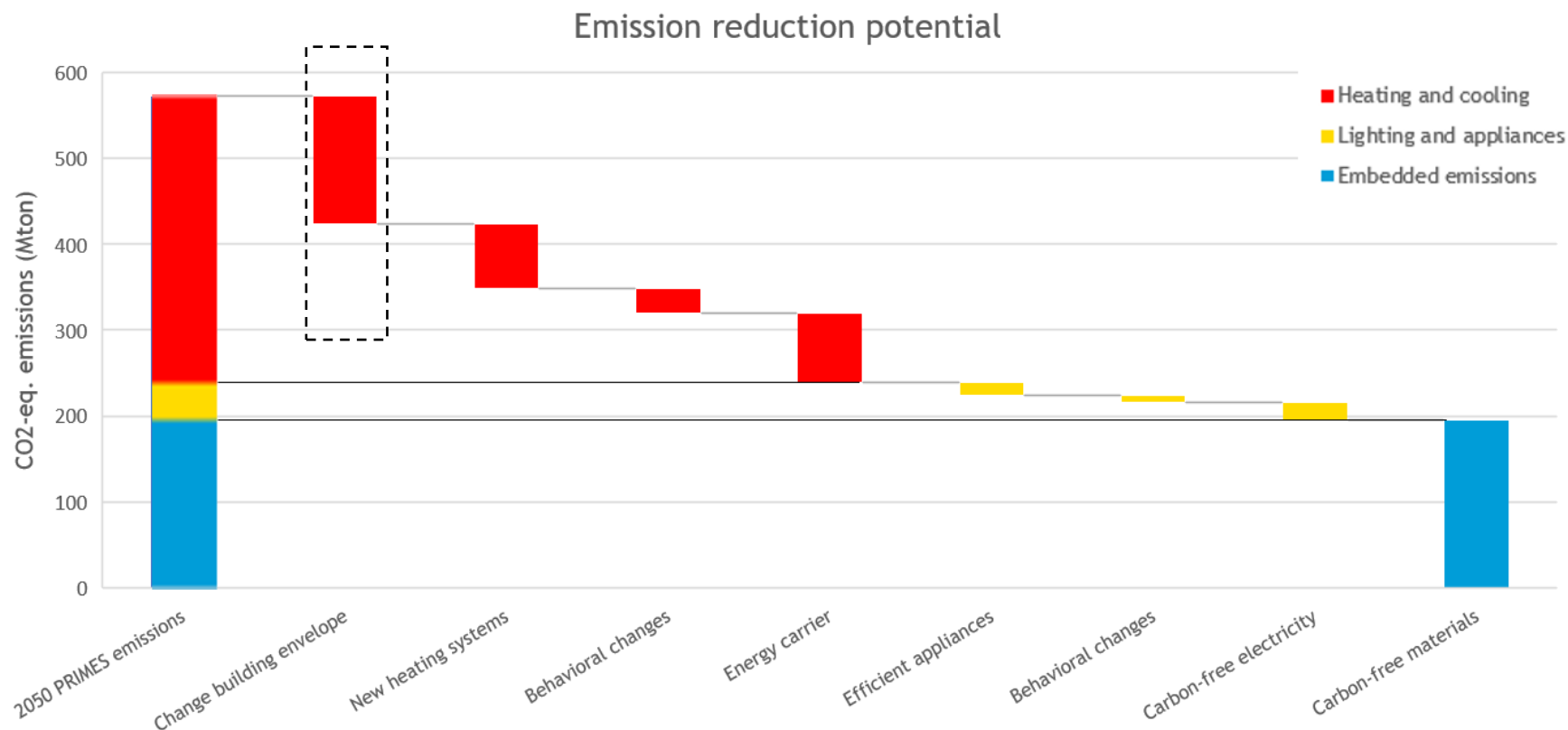
OPINION - 15/APRIL/2019

# Don't throw money for heat decarbonisation out of the window

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A combination of low-carbon heating technologies and energy efficiency improvements is the obvious answer to decarbonise heating, says Jan Rosenow, Director of European programmes with the Regulatory Assistance Project (RAP)

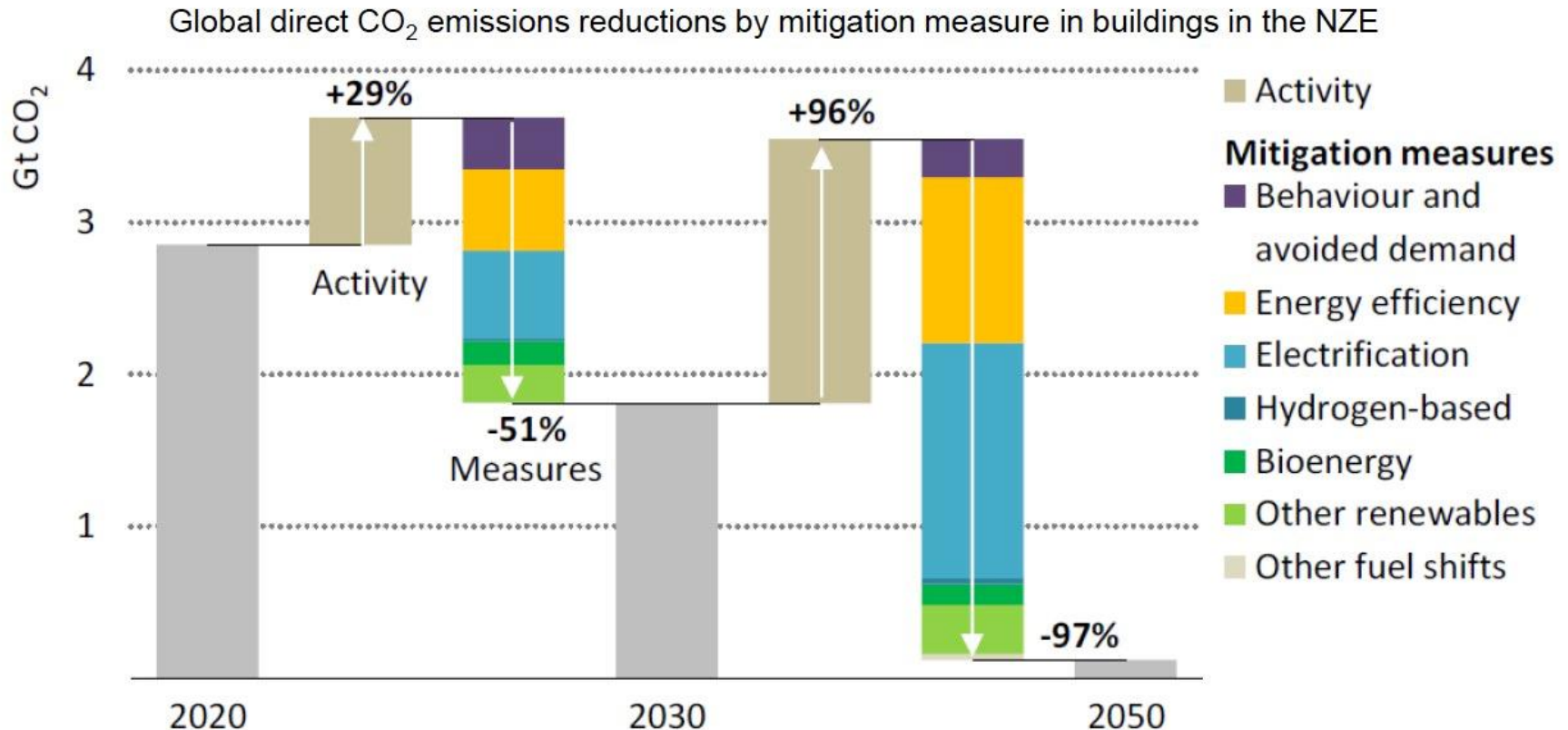
# Efficiency First to reduce system costs



Source: Fraunhofer ISI 2020

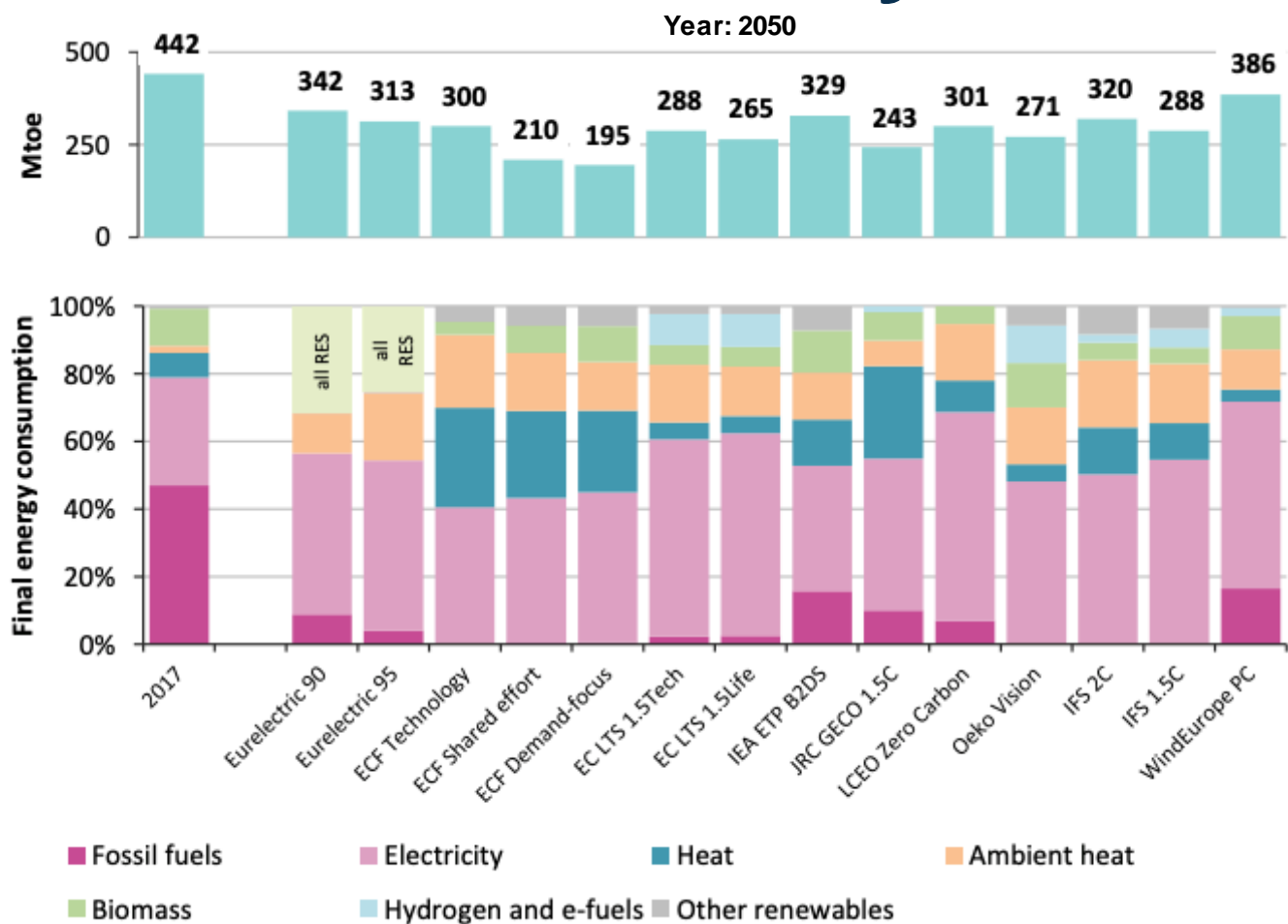


# Electrification together with building renovation key driver for decarbonisation



**Electrification and energy efficiency account for nearly 70% of buildings-related emissions reductions through to 2050, followed by solar thermal, bioenergy and behaviour**

# Most studies see energy efficiency and electrification as key solutions



Source: JRC (2020)

# 3 Heat policy







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# A selection of important barriers

## Demand side

- Up-front cost
- Operational cost
- Inertia
- Awareness
- Hassle
- Lack of interest
- Confidence in technology
- Lack of trained engineers
- Lack of space
- Planning requirements
- Electricity supply capacity

## Supply side

- Access to and cost of capital
- Business hidden costs or transaction costs
- Lack of trained installers
- Awareness
- Limited geographical coverage
- Insufficient sales volume to sustain supply chain
- Infrastructure deployment disruptive

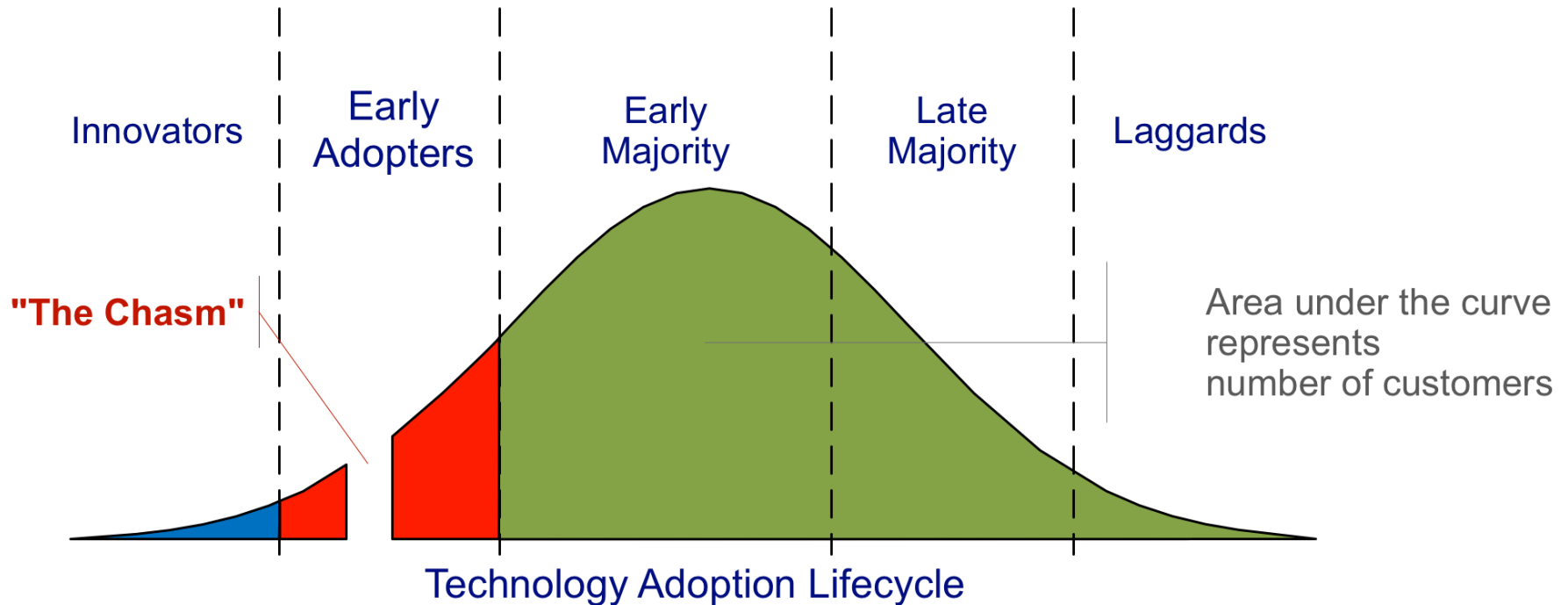
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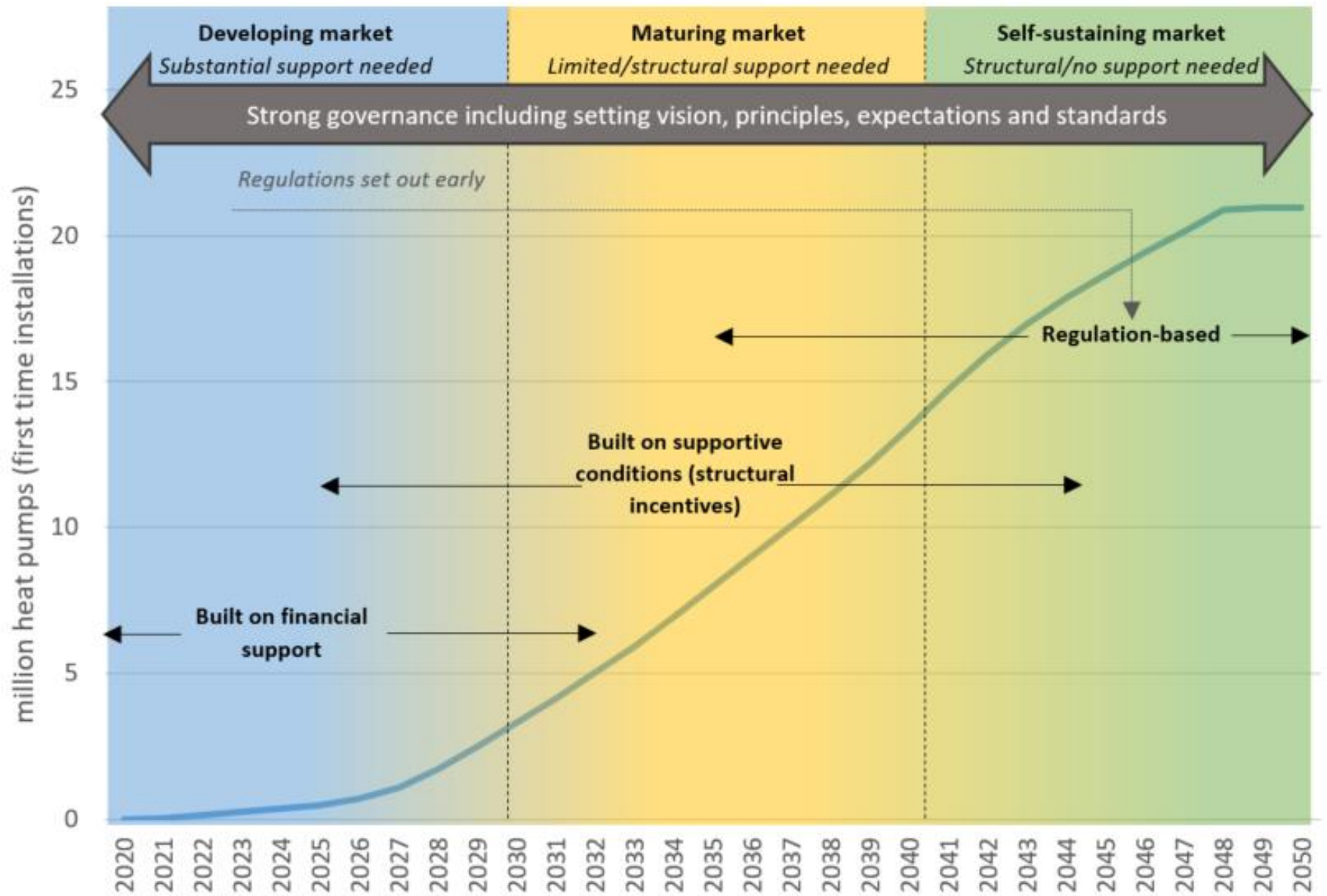
# Important policy questions

- Do we need regulation and if so, what does this look like?
- What should the role of carbon pricing be?
- How about the potential inclusion of buildings in the EU ETS?
- What financial support programmes are needed?
- What information needs to be provided?
- How can customers be protected?



# Innovation adoption curve





# 4 Role of cities





# GREATER MANCHESTER 2038

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## A DECARBONISATION PATHWAY

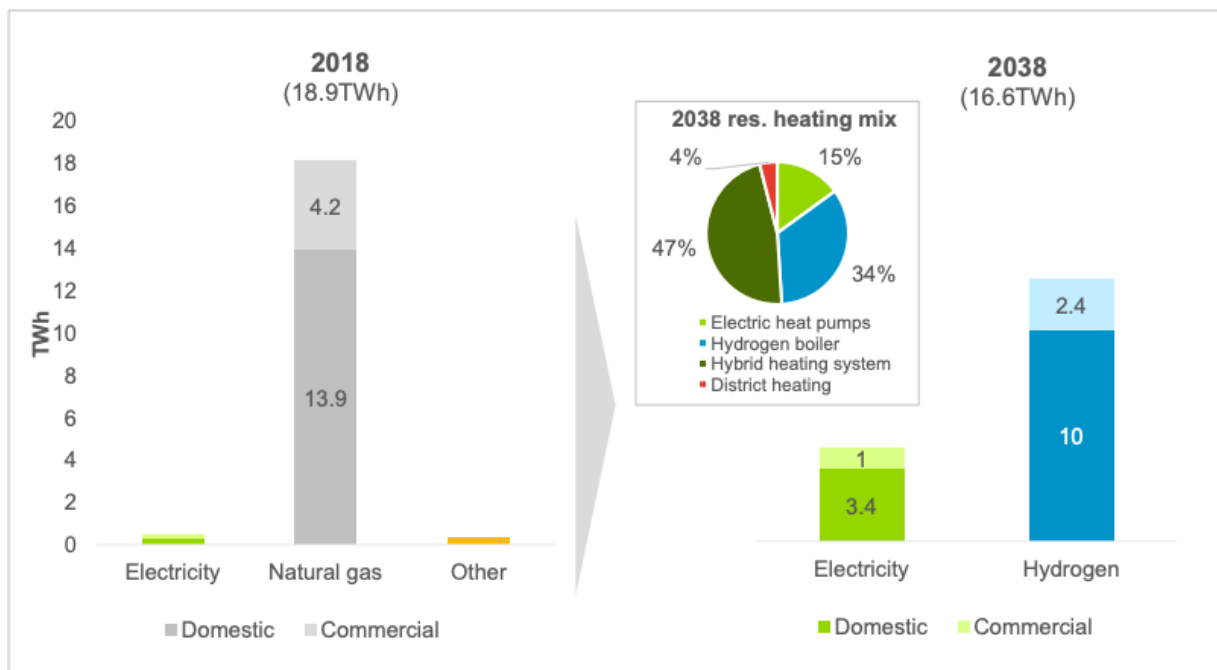
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**electricity**  
north west  
Bringing energy to your door

**NAVIGANT**  
A Guidehouse Company

## ENERGY DEMAND

# BUILDINGS – HEATING DEMAND DECLINES FROM 18.9TWH TO 16.8TWH IN 2038



Note: "Other" includes coal and oil.

## Short-term Actions

- Insulation of domestic properties (at least 2 EPC level improvement for all)
- Retrofit of public estate
- Streamline policy framework
- Lobby for national policy direction
- Embed detailed energy planning
- Pilot BEMS

## Research

- Large scale technology trial

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# What can cities do?

- Local heat planning for district heating (Vienna)
- Leverage role as trusted actor and coordinator building local partnerships (Birmingham)
- Impose bans on the use of fossil heating (Seattle)
- Require renewable heating for new heating systems (Hamburg)
- Lead by example and decarbonise heating in public buildings and social housing (Boston)



# 5 Conclusions



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# Conclusions

- Decarbonising heat is critical for meeting climate goals
- Energy efficiency is key to minimise costs
- Electrification is a central pillar together with district heating
- Whole range of policy instruments needed to accelerate replacement rates
- Cities have an important role

# About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at [raponline.org](https://raponline.org)



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