Authors

Regulatory Assistance Project
Dr Richard Lowes (lead author)
Duncan Gibb
Dr Jan Rosenow
Samuel Thomas

CLASP
Matt Malinowski
Alexia Ross

Global Buildings Performance Network
Peter Graham

COP 27 side event 14th November 2022

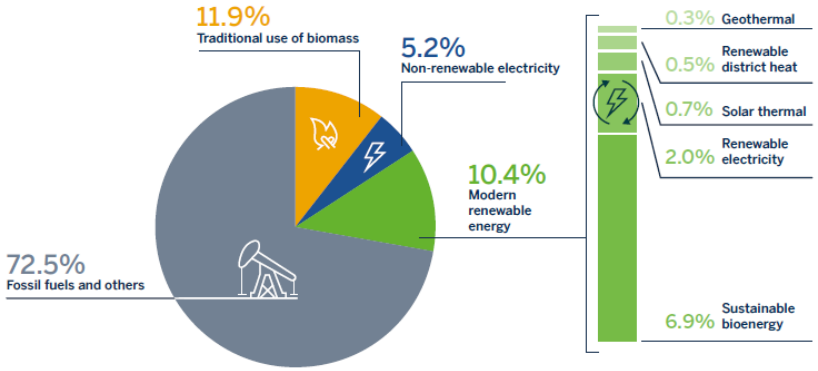
Dr Richard Lowes
Senior Associate
Regulatory Assistance Project (RAP)®

Rue de la Science 23
B-1040 Brussels
Belgium

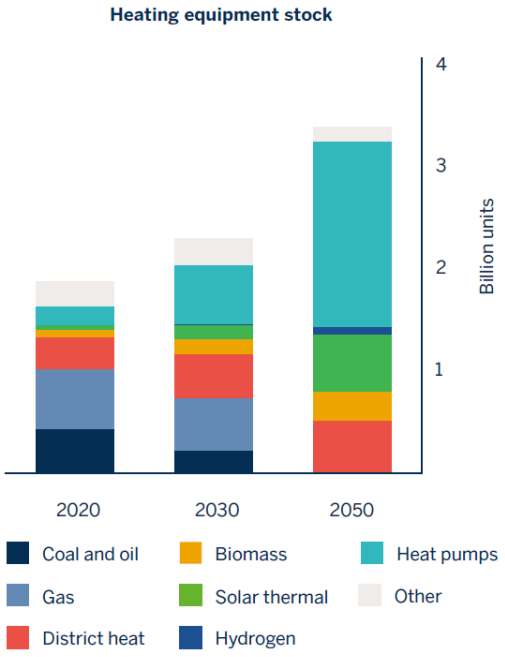
+44 7703 630776
rlowes@raponline.org
raponline.org

Why heat pumps?

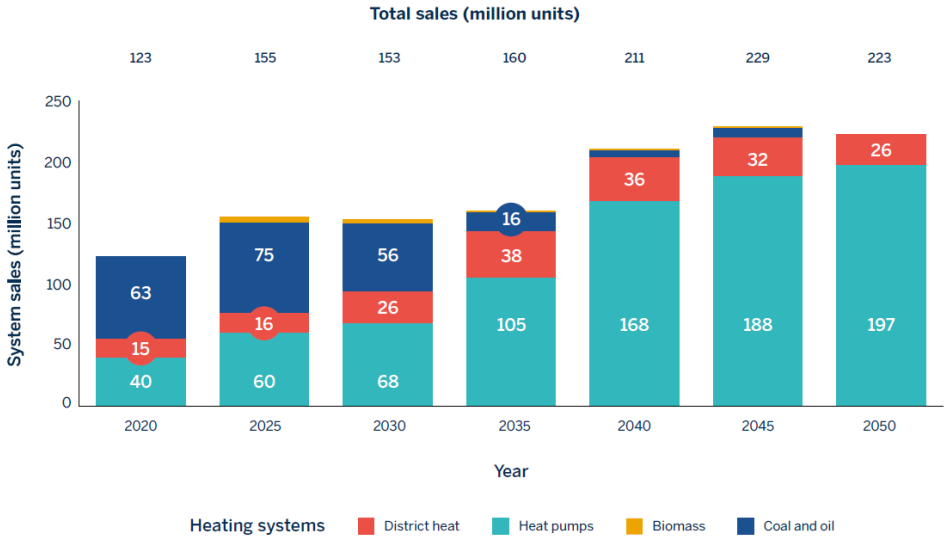
Figure 3. Share of energy sources in total final energy consumption for heating and cooling, 2019



Numbers need to grow rapidly



Source: IEA. (2021, May). *Net Zero by 2050: A Roadmap for the Global Energy Sector*.



Source: McKinsey Global Institute. (2022, January). *The net-zero transition: What it would cost, what it could bring*.
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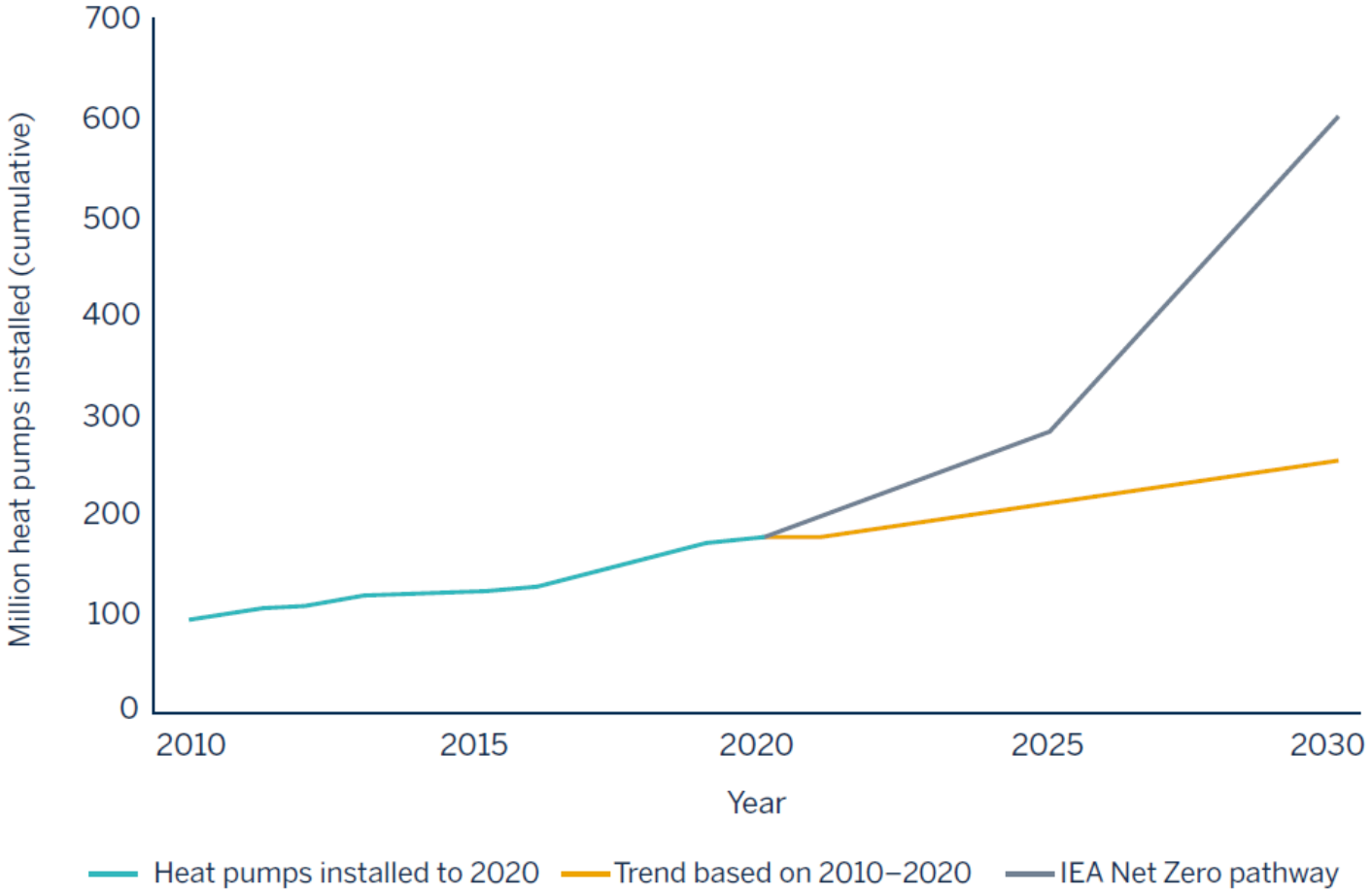
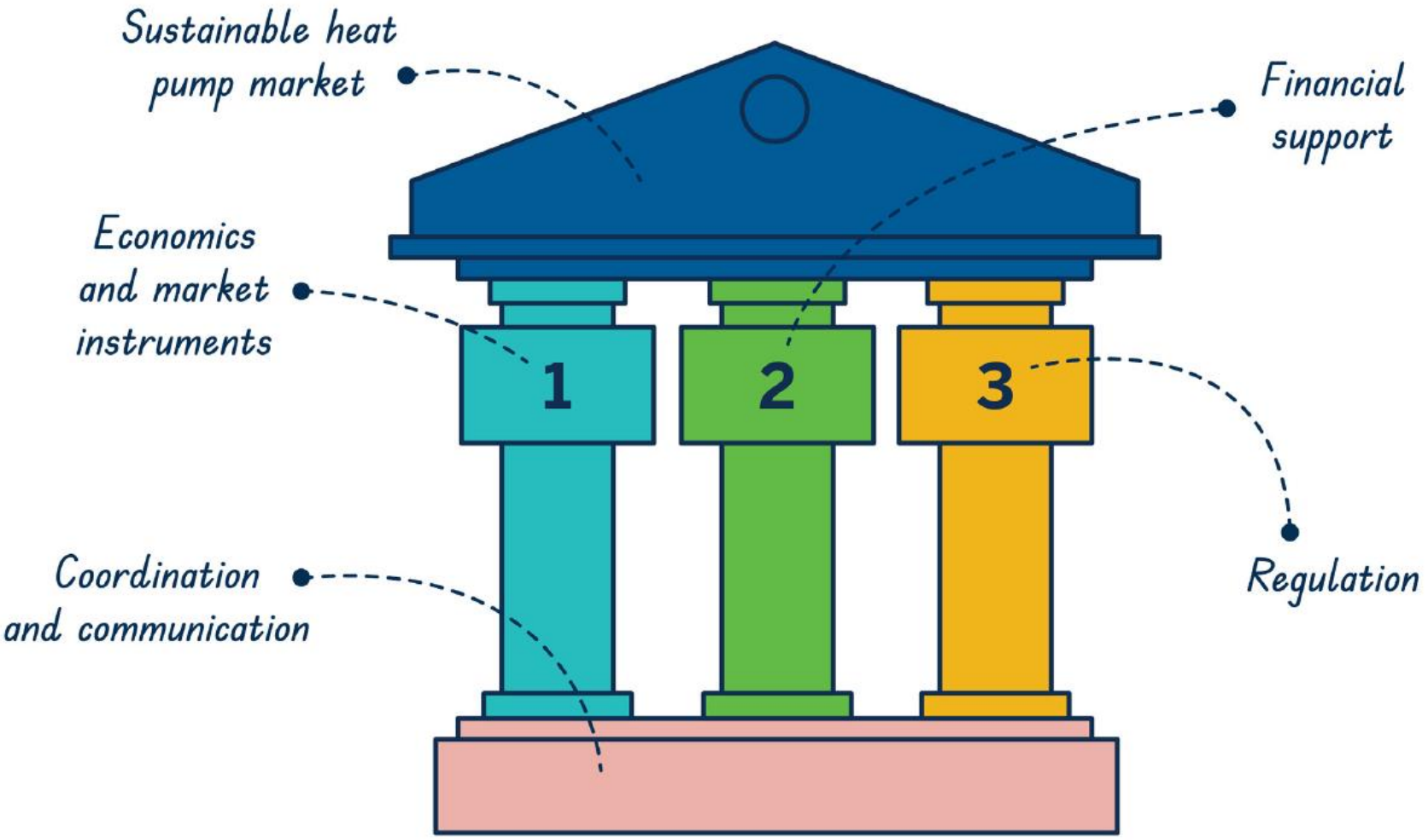
A step change is needed



Rosenow, J., Gibb, D., Nowak, T. & Lowes, R. (2022a, September). Heating up the global heat pump market. *Nat Energy 7,* 901–904. https://doi.org/10.1038/s41560-022-01104-8

Historical progress on heat pumps can inform the future

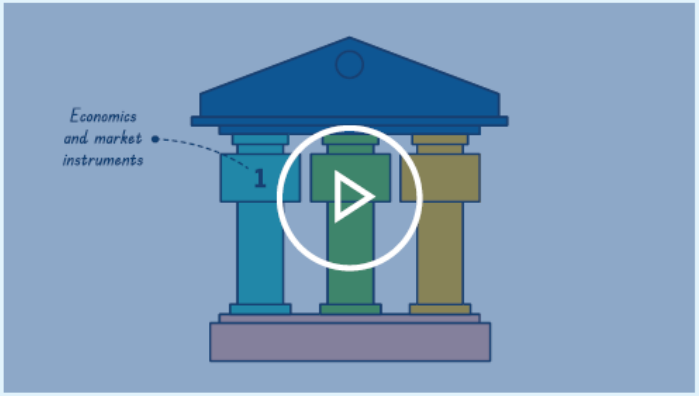
1. Packages of policy and regulatory measures are needed;
2. Pricing reform and financial support is needed;
3. Softer measures on skills and engagement are vital;
4. Policy support needs to be sustained;


Sustainable heat pump market
Financial support
Economics and market instruments
1
2
3
Coordination and communication
Regulation

8 Pillar 1: Economic and market-based instruments

Heat pumps currently often cost more to install than fossil fuel heating systems, and running costs compared to fossil fuel heating are often similar but vary by country or region. Policymakers should ensure that there is a clear financial incentive for building owners to invest in heat pumps, an issue considered in this chapter and in the short video below.

Figure 9. Policy toolkit pillar 1



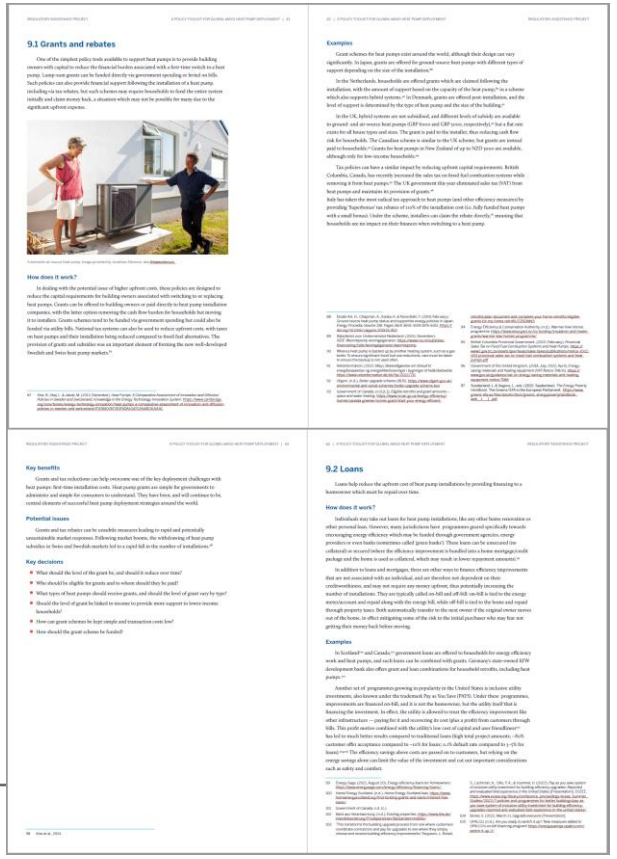
Note: Click for a link to section summary video.

Without a strong economic framework on both upfront heat pump costs and running costs, heat pump deployment is expected to be far slower than needed to reach net-zero emissions targets.[59]

The main running costs (associated with electricity used by the heat pump) will be determined by the cost of electricity, the efficiency of the heat pump and the overall heat demand of the building. If fossil fuels such as oil, gas and coal are cheaper to use per unit of heat delivered, there is a disincentive for customers to switch to heat pumps.

Even if the upfront heat pump costs can be reduced or subsidised, buildings and households that switch to a heat pump would see their running costs increase. It would also be a challenge to encourage the deployment of heat pumps through regulation if their operating costs were higher than existing fossil fuel systems.

There are several ways in which governments can change the economics of clean heating and incentivise people to adopt heat pumps. Subsections in this toolkit chapter consider carbon pricing and environmental taxation, taxes and levies on energy and obligations to develop markets. To shift the economics towards clean heating, combinations of such measures may be appropriate.



Wrapping up

1. Heat pumps are central to decarbonising heating globally.
2. Multiple policy tools exist to promote them, but packages of measures are needed.
3. Benefits go beyond climate;
    I. Air pollution reductions
    II. Growth of renewable energy
    III. Sustainable cities