



# A policy toolkit for global mass heat pump deployment

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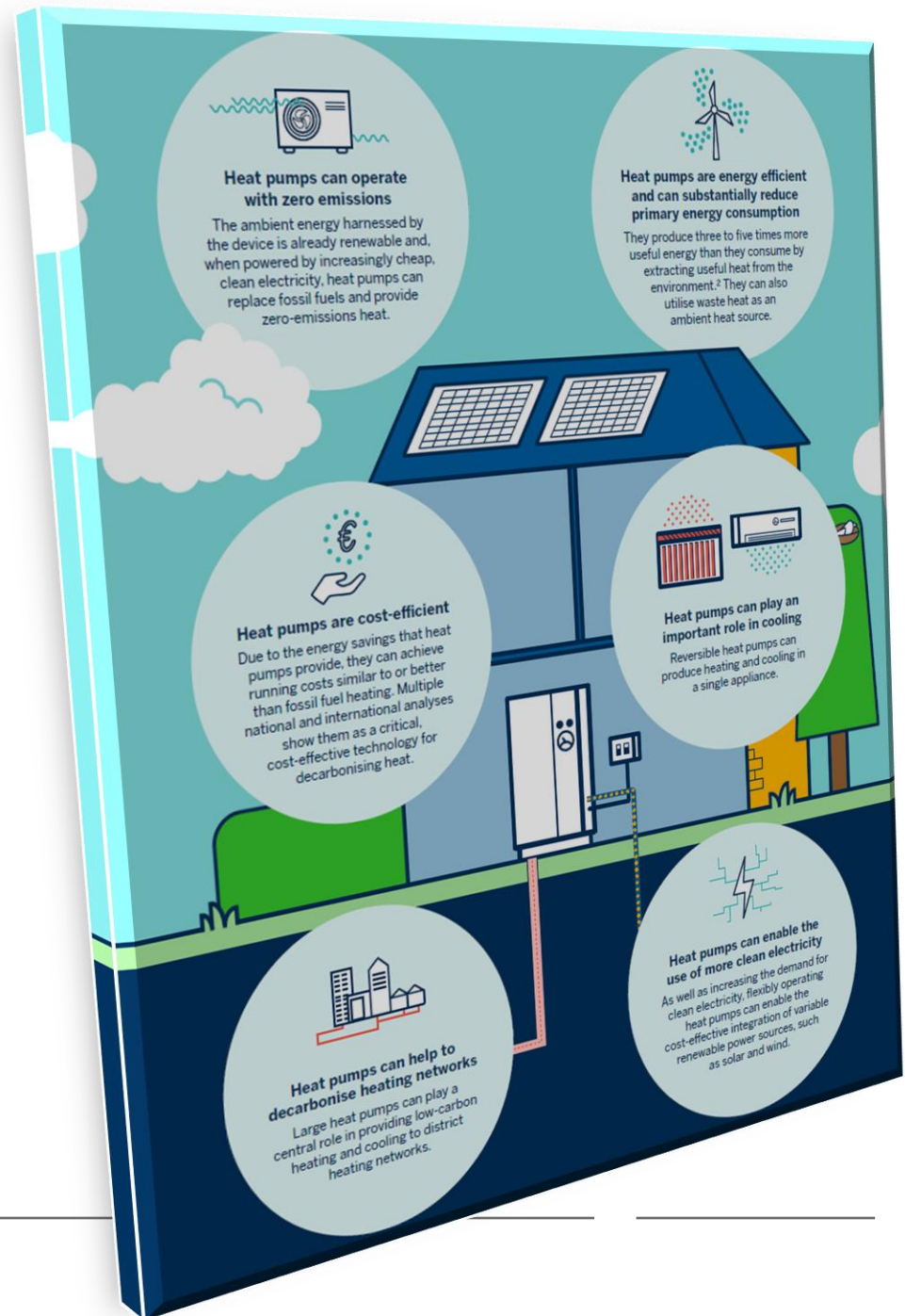
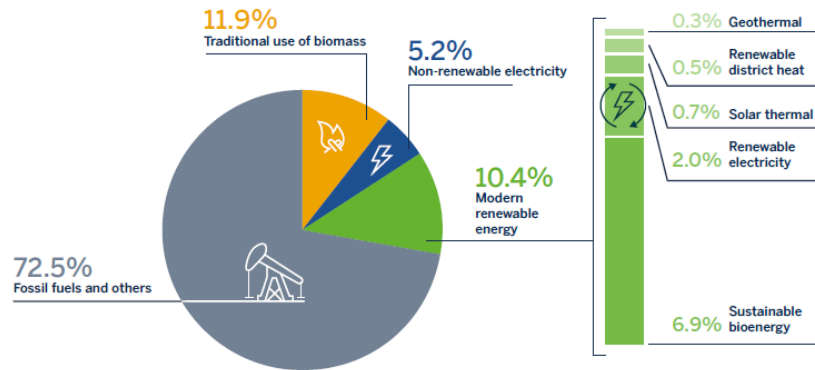
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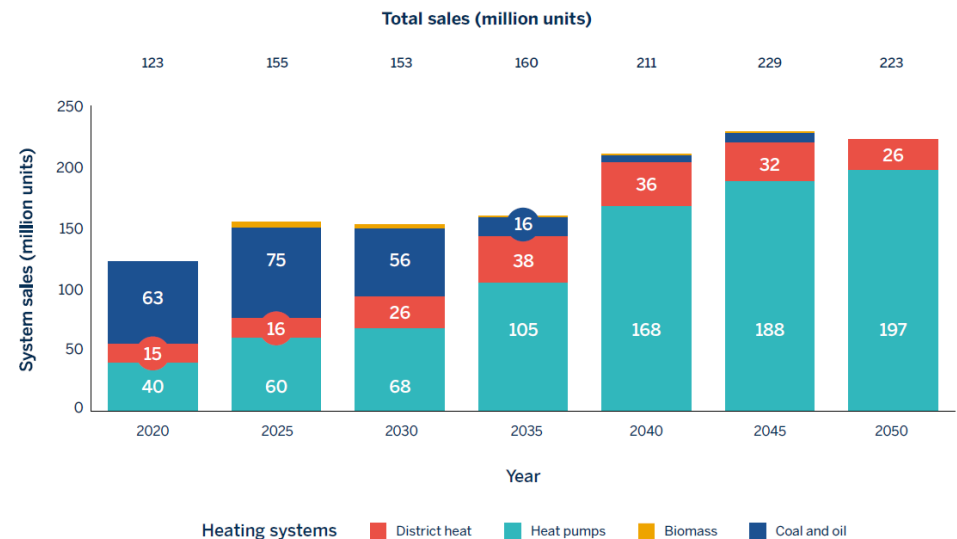
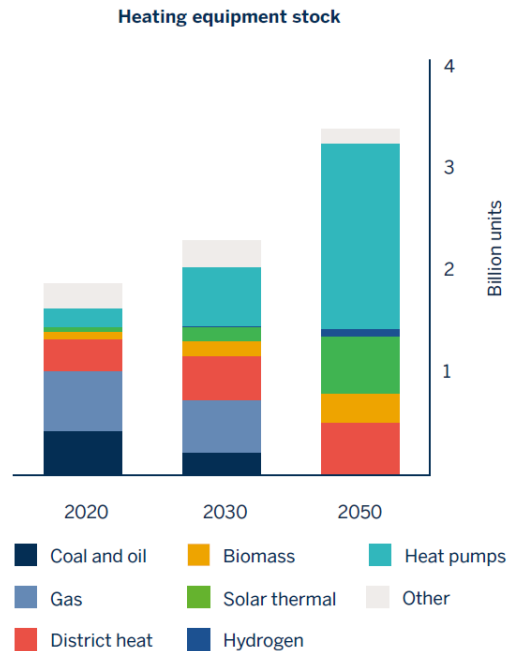
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# Why heat pumps?

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



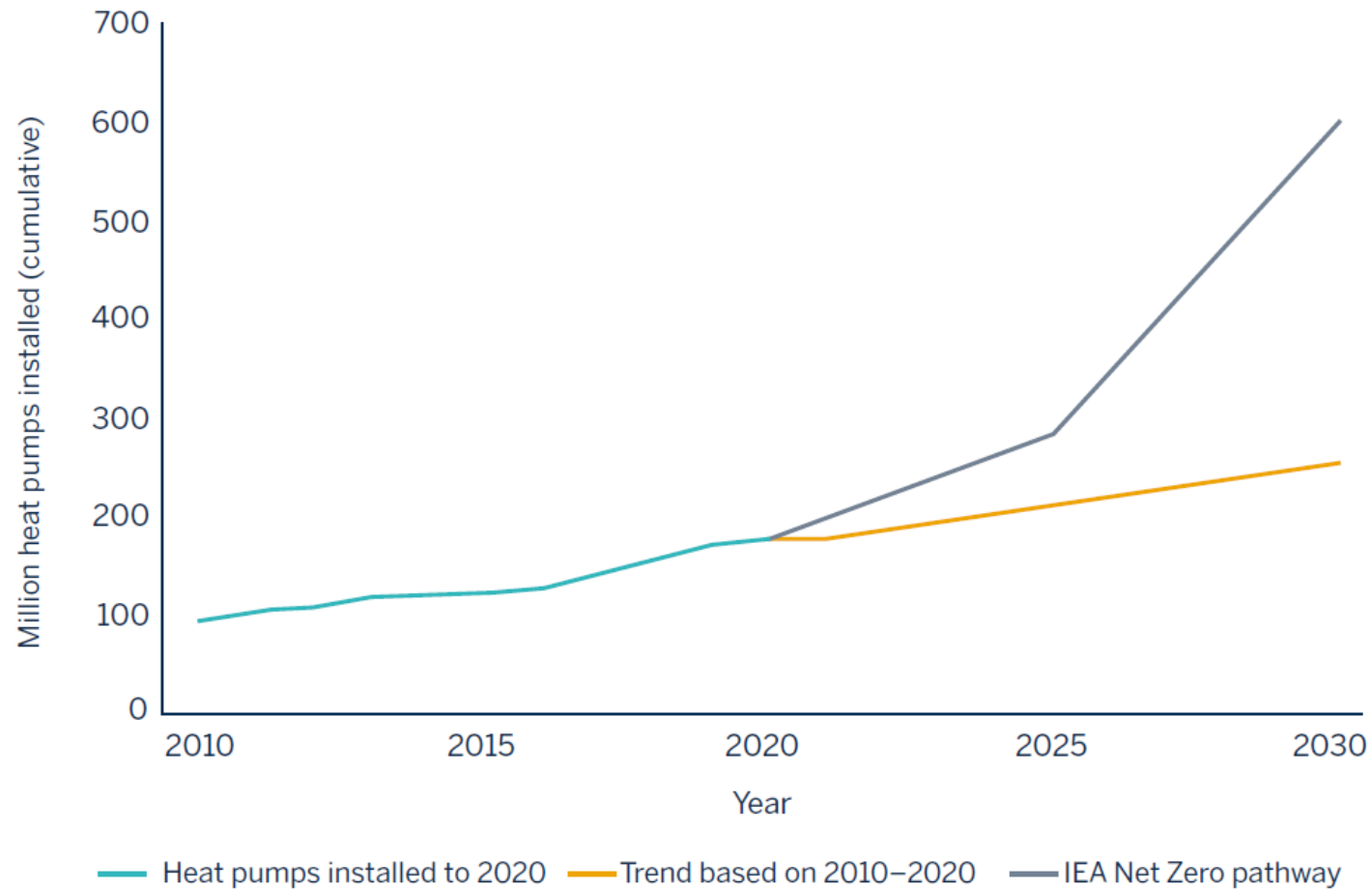
# Numbers need to grow rapidly



Source: McKinsey Global Institute. (2022, January). *The net-zero transition: What it would cost, what it could bring*.  
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Source: IEA. (2021, May). *Net Zero by 2050: A Roadmap for the Global Energy Sector*.

# A step change is needed



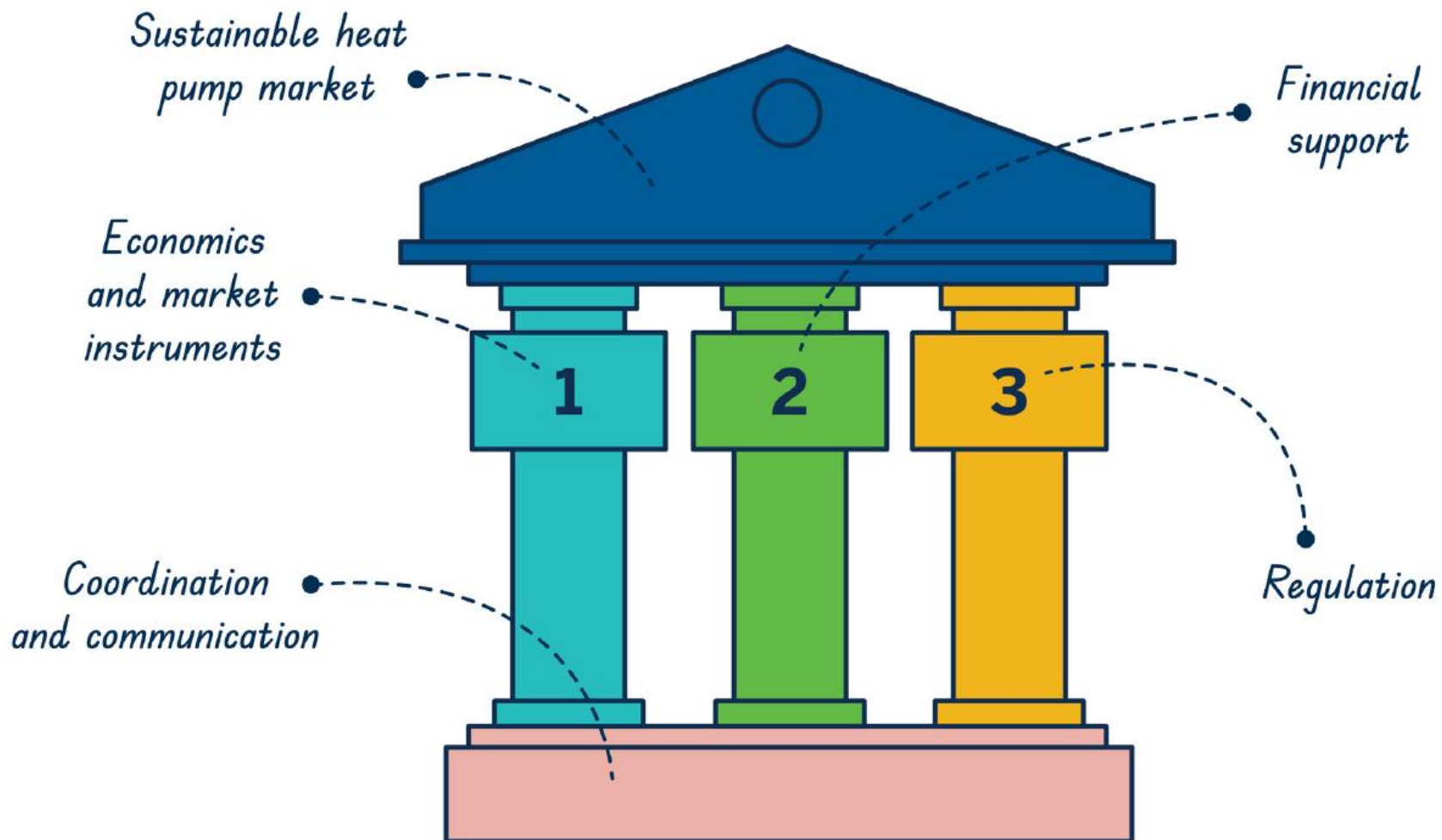
Rosenow, J., Gibb, D., Nowak, T. & Lowes, R. (2022a, September). Heating up the global heat pump market. *Nat Energy* 7, 901–904. <https://doi.org/10.1038/s41560-022-01104-8>

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# 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;

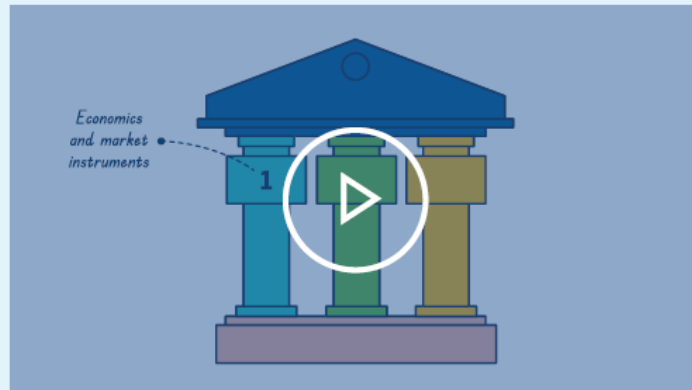




## 8 Pillar 1: Economic and market-based instruments

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.<sup>59</sup>

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.

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## Heat pump policy pillar 1 Economics and market instruments

Heat Pump Toolkit



9.1 Grants and rebates

One of the simplest policy tools available to support heat pumps is to provide building owners with capital to reduce the financial burden of installing a heat pump. Heat pumps can be installed directly on government spending or based on a tax credit. Both policies can also provide financial support following the installation of a heat pump, including up to 10 years, but such schemes may require households to deal with the costs of interest, and have more risk of a market-based scheme being possible to support the system.

**How does it work?**

In dealing with the potential issue of higher upfront costs, these policies are designed to reduce the capital expenditure on building conversion with heating or replacing heat pumps. Grants can be offered to building owners or paid directly to heat pump installers, with the latter option ensuring the work is done for the household but leaving it to installers. Grants should be designed to be based on government spending but could also be based on a tax credit. National governments can also offer grants to building owners, with grants to heat pumps and their installation being reduced compared to fossil fuel alternatives. The provision of grant and rebates may be dependent on the timing of the work and the type of building and heat pump system.

9.2 Loans

Loans help reduce the upfront cost of heat pump installation by providing financing to a homeowner which can be repaid over time.

**How does it work?**

Loans help reduce the upfront cost of heat pump installation, but the other benefits associated with heat pumps, such as energy efficiency, are not directly dependent on the loan. However, many households have a program that specifically targets energy efficiency improvements to help reduce government spending. These loans can be structured as a loan to the homeowner, with the loan being repaid over time. The loan can be structured as a loan to the homeowner, with the loan being repaid over time. The loan can be structured as a loan to the homeowner, with the loan being repaid over time.

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# 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

