

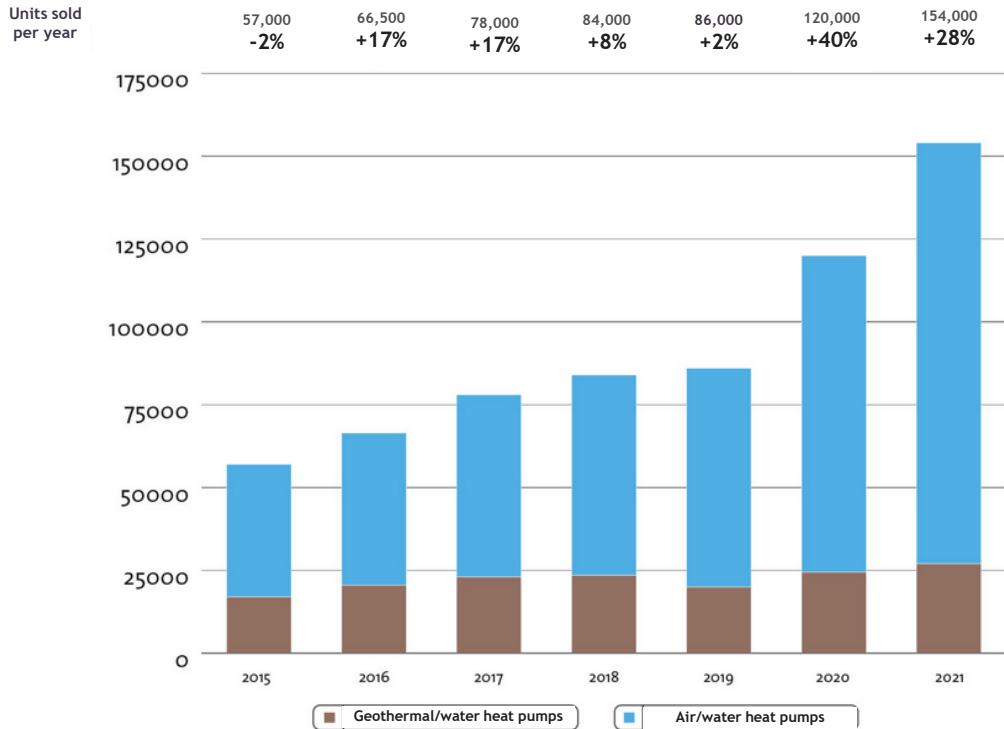


A dena survey among 10,000 energy efficiency experts

Heat pumps in energy consulting

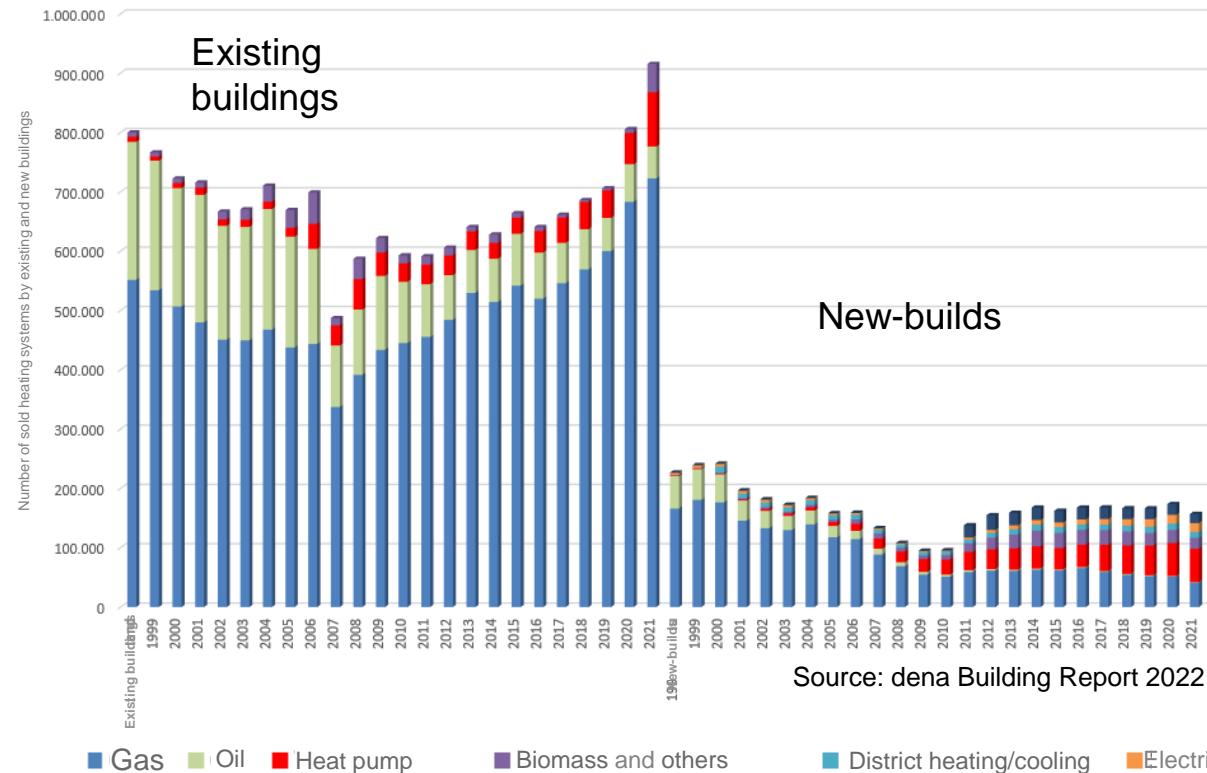
Data on buildings and heating systems

Status quo: Heat pumps in Germany – annual equipment sales



- over 150,000 heat pumps were installed in 2021
- The objective of the “heat pump offensive”: 500,000 new HPs per year (from 2024)
- heat pumps currently heat 1.2 million buildings
- Target for 2030: approx. 6 million units

Sales figures for heating systems by existing and new buildings



Existing buildings: approx. 800,000 new heating systems per year – share of gas/oil heating: 93%



In new buildings: every other heating system is now a heat pump



The **potential** for a switch to renewable energy sources is great.

Development of heating market 2022 – 1st six months

Entire heating systems market	+	1%	463,000	units
Heating system (gas)	-	6%	299,500	units
Gas-fired condensing boiler	-	5%	261,000	units
Gas LT	-	13%	38,500	units
Heating system (oil)	+	14%	24,000	units
Oil-fired condensing boiler	+	16%	23,000	units
Oil LT	-	14%	1,000	units
Biomass	+	6%	43,500	units
Firewood	-	19%	4,500	units
Pellets	+	12%	32,000	units
Combi boiler	-	7%	3,500	units
Wood chips	+	6%	3,500	units
Heat pumps for heating	+	25%	96,000	units
Air/water	+	32%	82,500	units
Brine/water	-	4%	11,500	units
Water/water and other	+	6%	2,000	units

Hybrid heat pumps¹

(The number of hybrid heat pumps is already included in the individual heating system categories)

+

28%

3,000

Source: BDH

Development of heating market 2022 – 1st six months

Gesamtmarkt Wärmeerzeuger					
Solar heating	+	7	%	347,000	m ²
Storage systems	+	6	%	379,000	units
Fresh water stations	+	1	%	37,000	units
Tank systems	+	10	%	15,500	units
CHP	+	3	%	3,000	units
of which fuel cells					units
Surface heating/cooling	+	7	%	173.6	million m
Radiators	-	10	%	2.1	million units
Ventilation (central with heat recovery)	-	6	%	26,000	units
Ventilation (decentralised with heat recovery)	+	9	%	139,500	units
Exhaust technology (stainless steel)	+	46	%	48.0	€ million
Burners	-	8	%	41,500	units

Residential buildings in Germany



- Over 15 million detached and semi-detached houses in Germany
- Use of heat pumps still predominantly in detached and semi-detached houses
- **Challenge of existing buildings:** 75% of residential buildings are more than 40 years old

Source: dena Building Report 2021

Energy consultations and survey in 2021

- Energy consulting for residential buildings 2021: **73,807**
- Funded consultations 2021: **39,994**

The survey: what did we do?

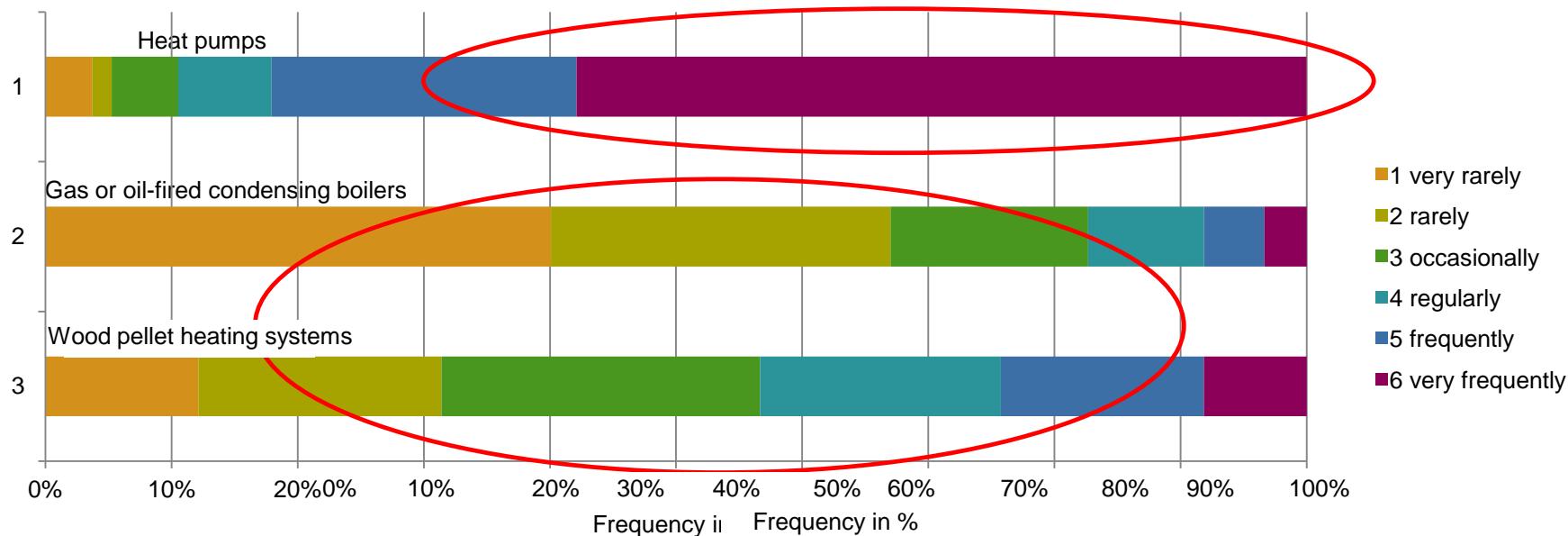
- We wrote to 10,000 energy efficiency experts
- Period: 27.06.2022 – 04.07.2022
- Response: 487



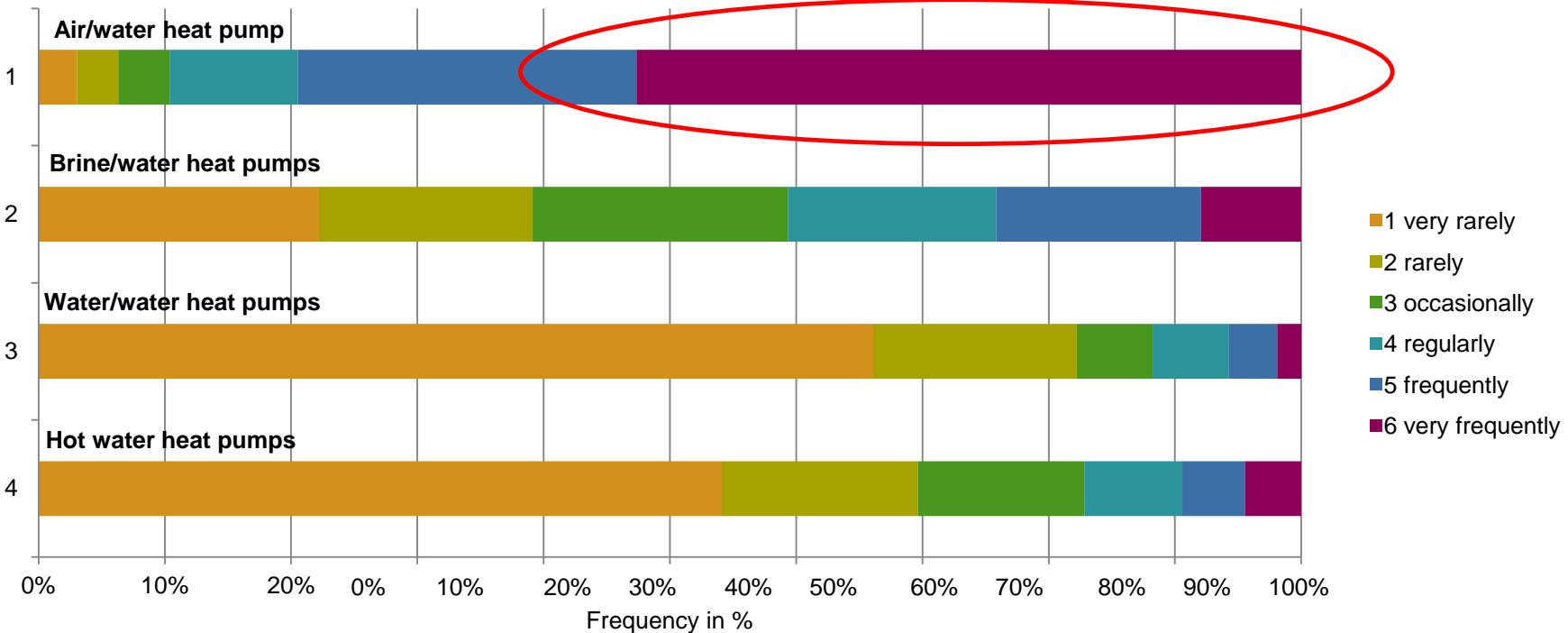
Enquiry and consulting process

Most frequently enquiries for heat pump

How often do building contractors currently actively enquire about the following heating technologies?

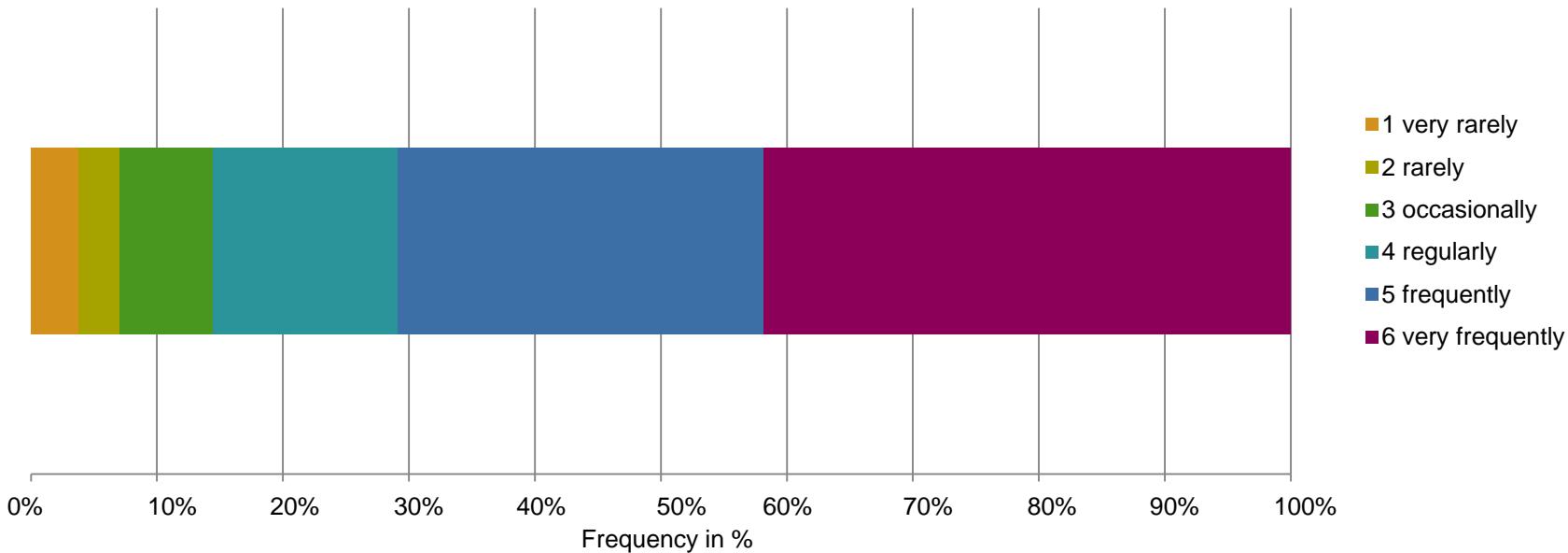


Which heat pumps do you recommend



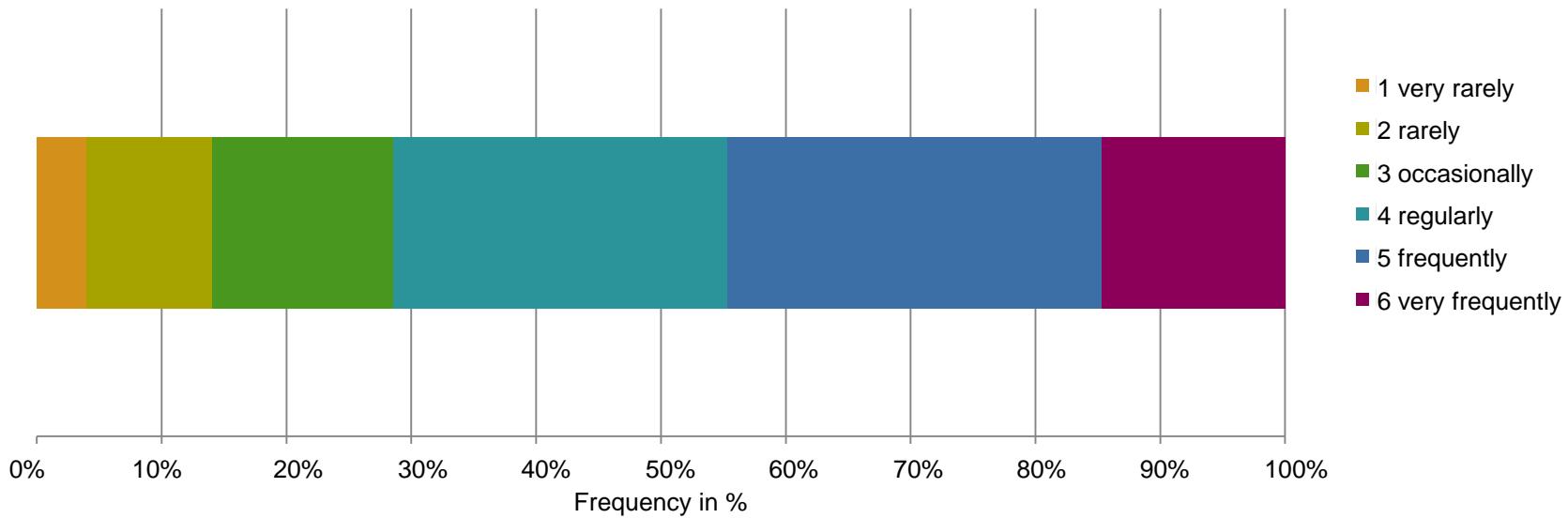
Heat pump in combination with photovoltaic system and battery storage

How often do you recommend a heat pump in combination with a photovoltaic system and battery storage?

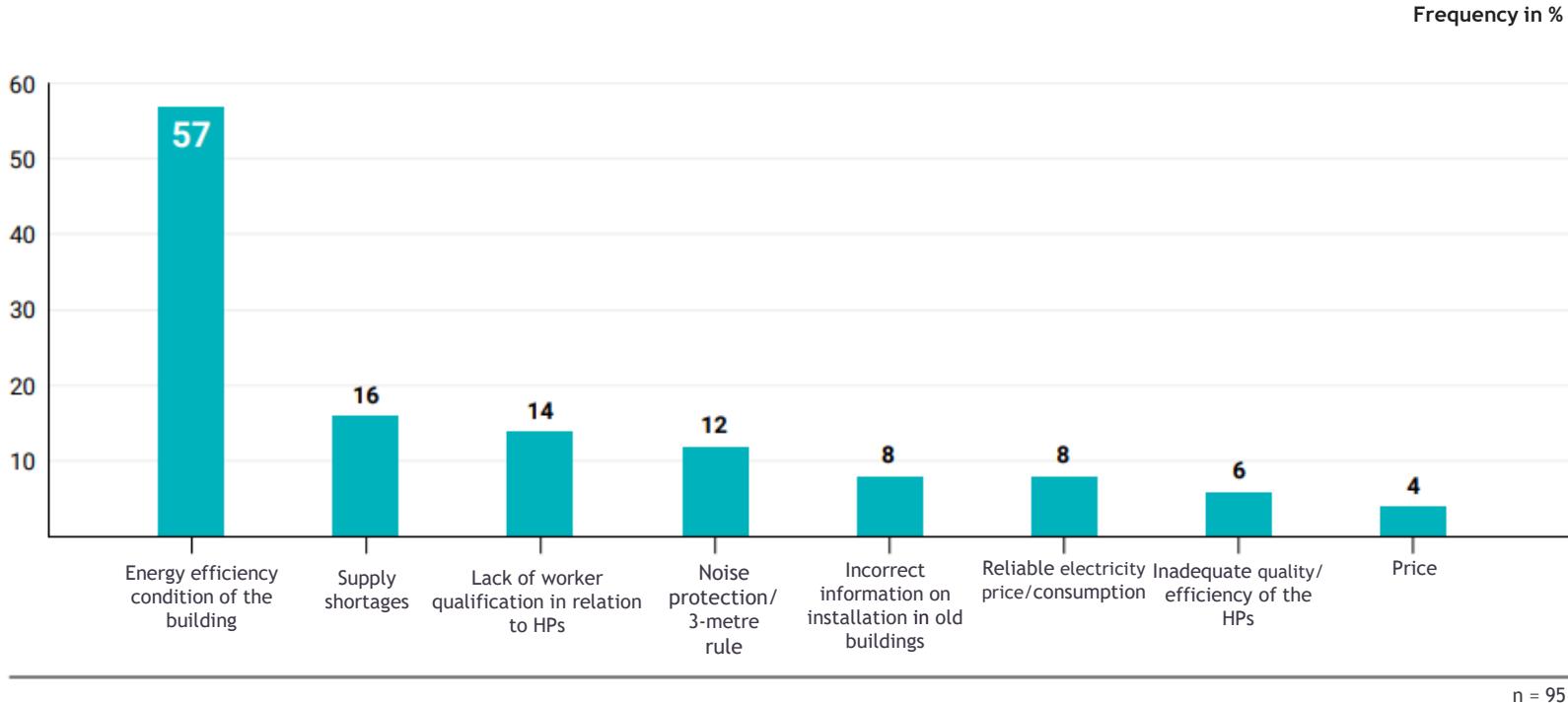


Structural condition more frequently deemed an obstacle

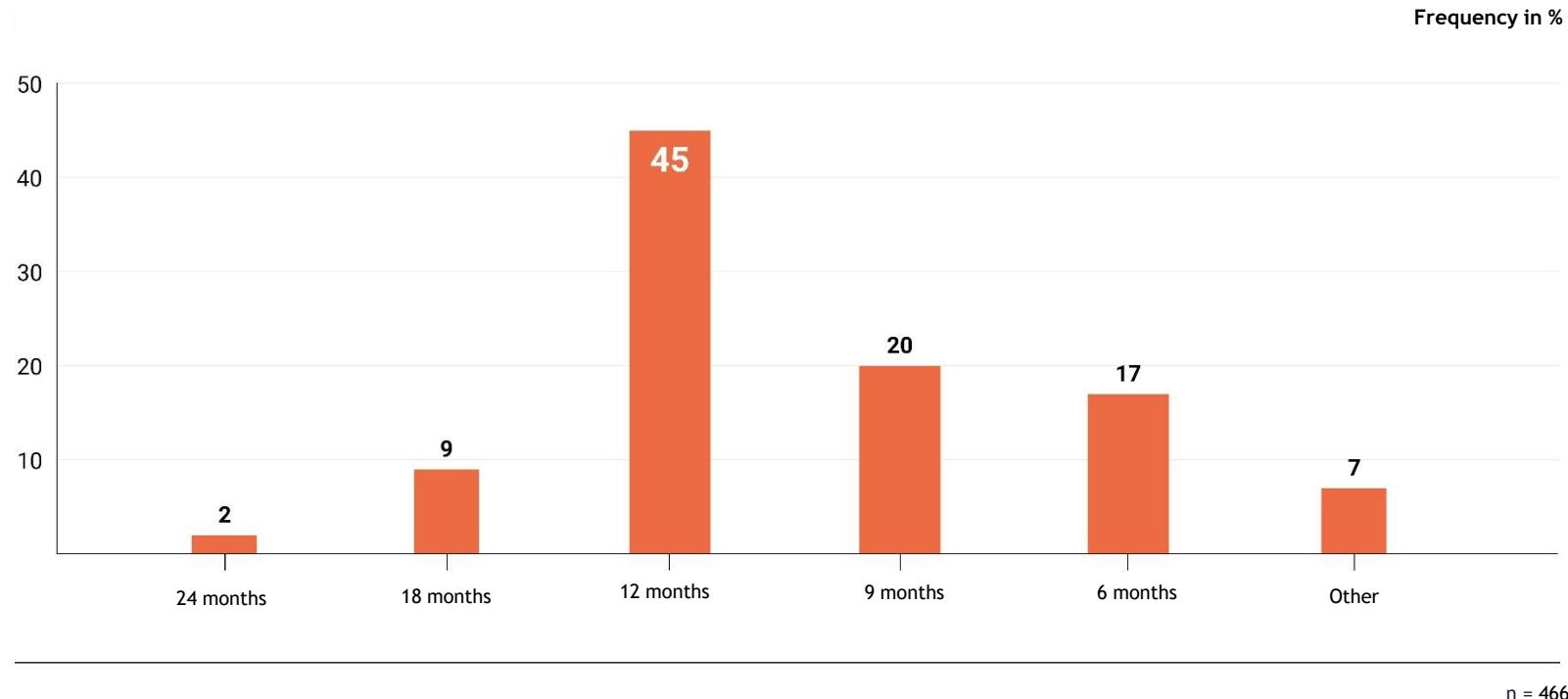
How often does it happen during your energy consultations that due to the structural condition of the building the installation of a heat pump is out of the question, for example due to excessive flow temperatures in the heating system?



Data on obstacles

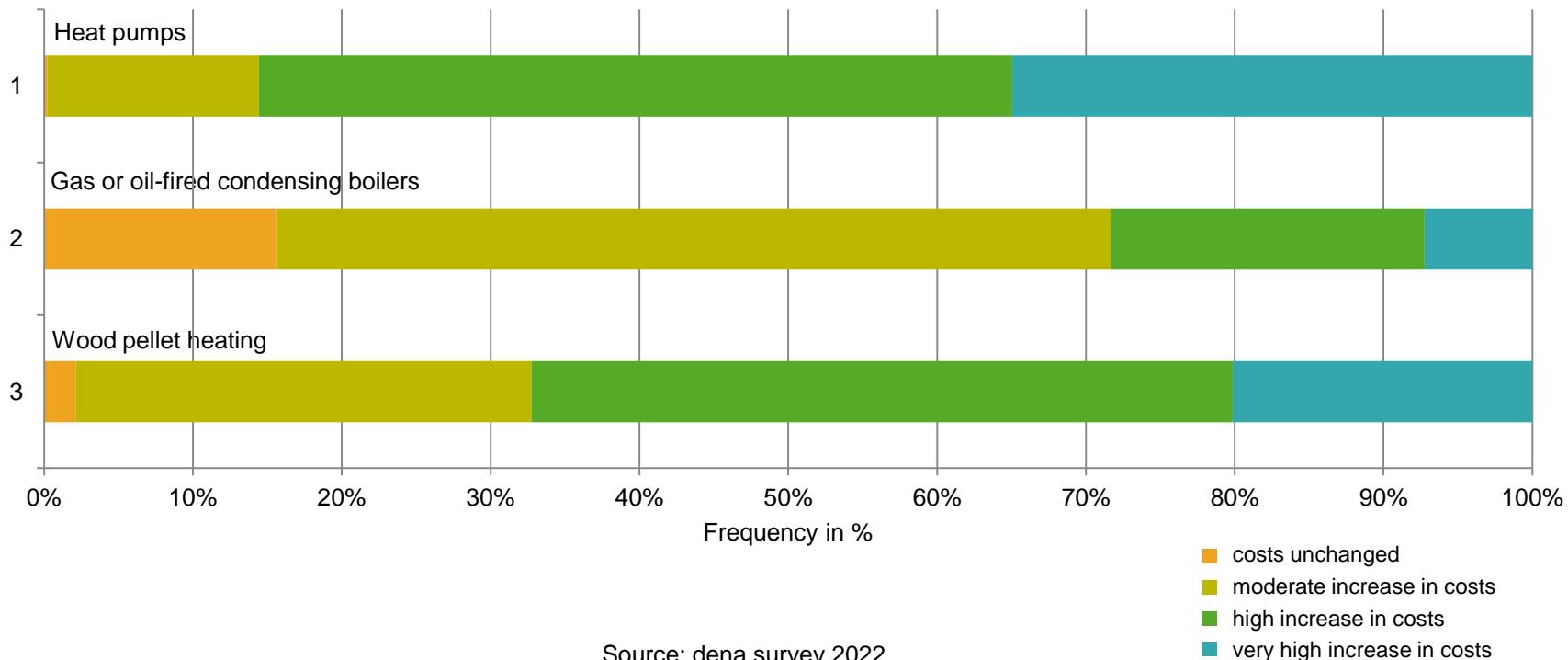


Assessment: How much time should be scheduled for the installation of a heat pump?



Assessment: Cost trend

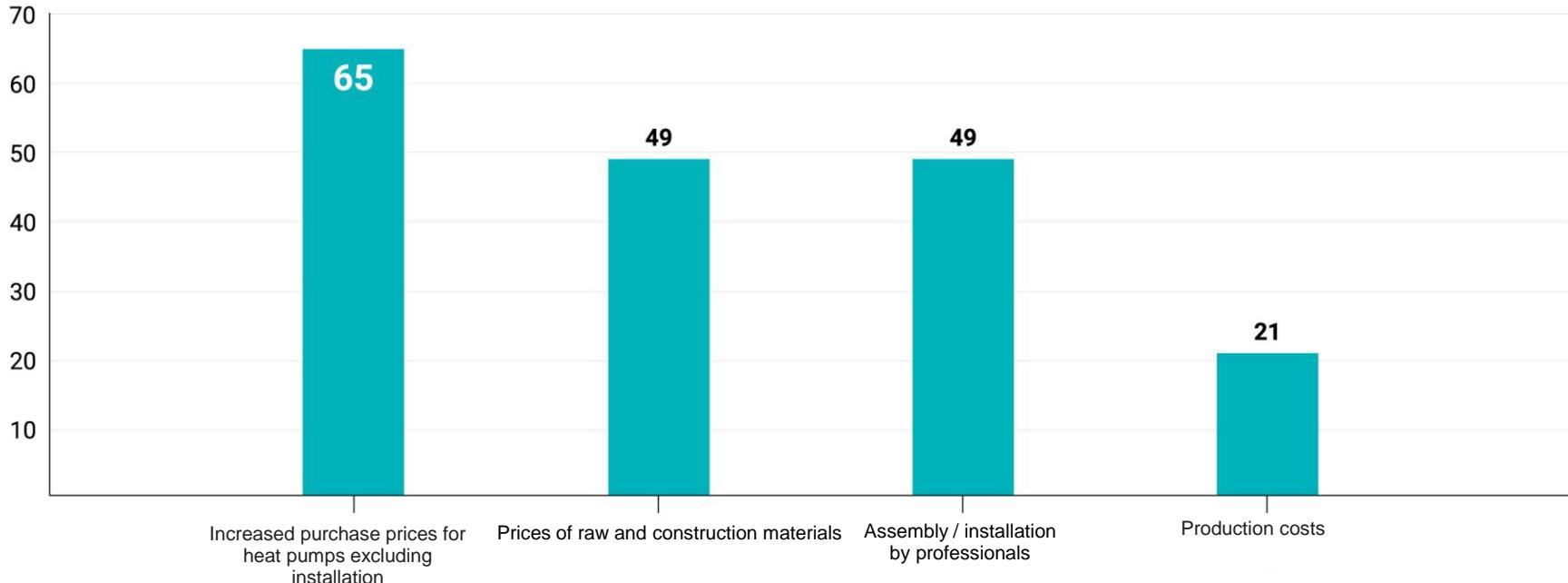
How have costs for individual heating technologies developed in the last 12 months?



Source: dena survey 2022

Assessment: Reasons for price development

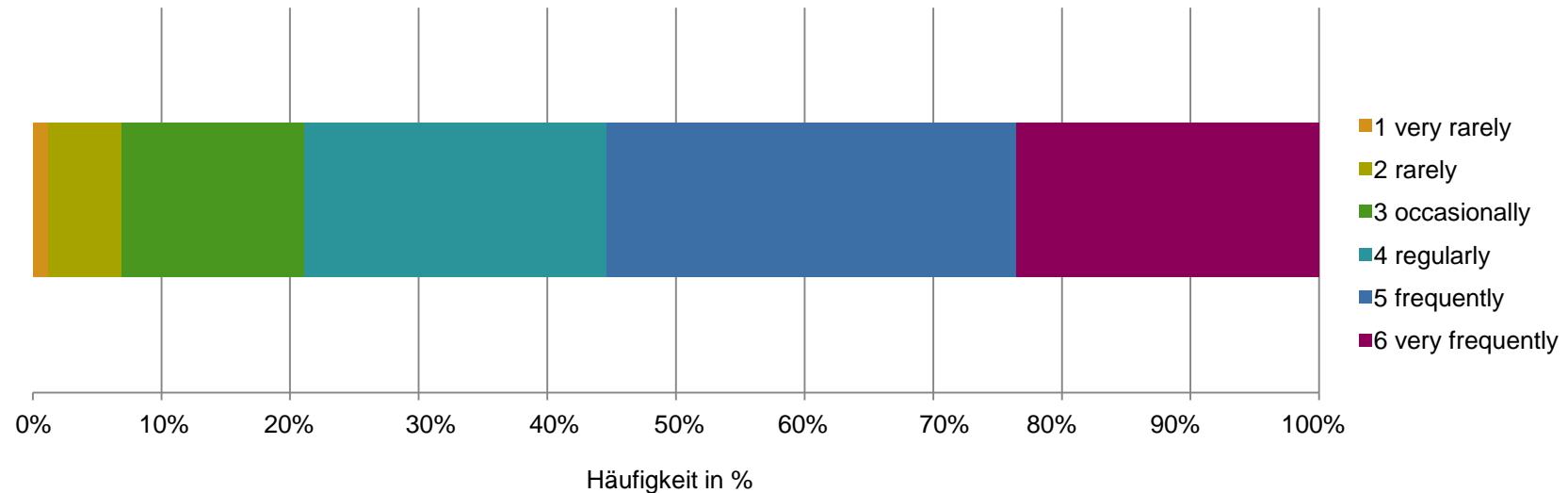
Frequency in % (of number of participants: 498)



*Participants could choose up to two possible responses.

Success through energy consulting

How often do your energy consultations currently lead to a recommendation to install a heat pump?



Suitability of the building – energy efficiency condition

dena estimate:

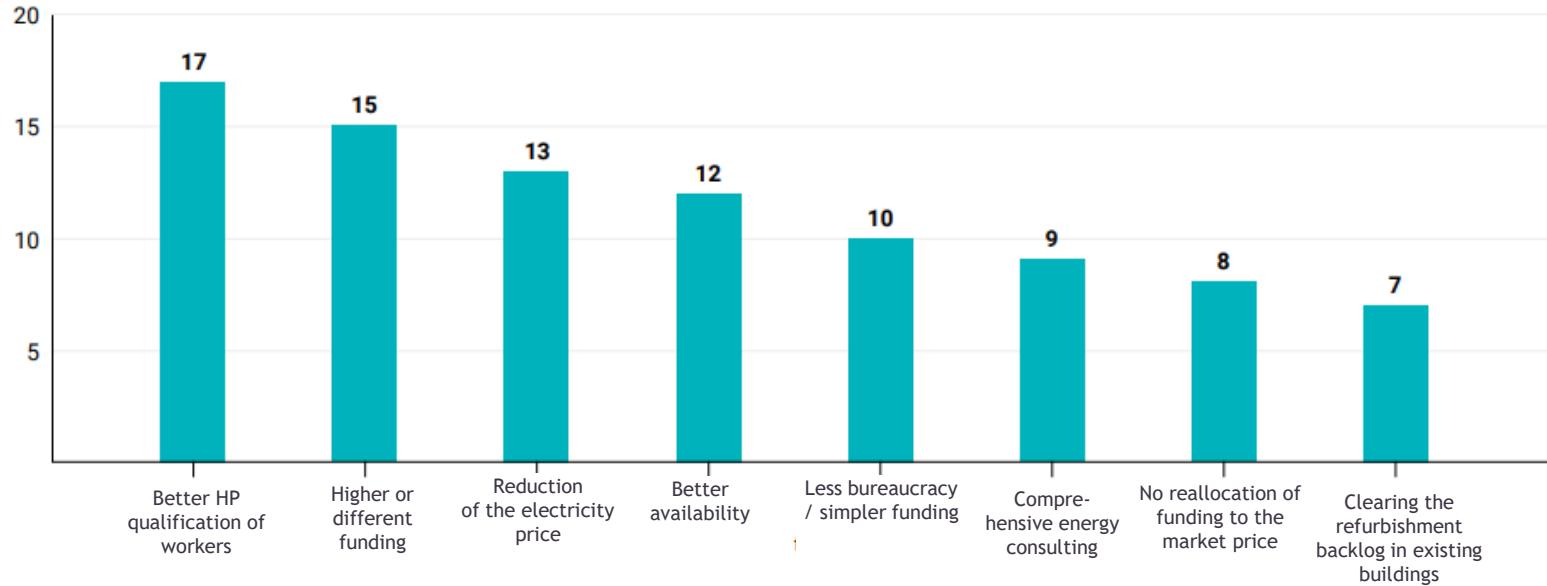
- **Demand for heat pumps very high.** Almost 90% of respondents stated that enquiries are made about heat pumps regularly to very frequently.
- **Energy consulting looks in detail at the characteristics of the specific situation** – from the building envelope to sound insulation. And it is successful: 80% of respondents recommend the use of heat pumps regularly to very frequently.
- **Underestimating the performance of heat pumps.** 44% stated that the use of heat pumps is impossible regularly to very frequently. By contrast, current field tests show that obstacles are often smaller than they are thought to be and can often be overcome with straightforward individual measures (replacing radiators or windows)

(Source: results of Fraunhofer ISE “Heat pumps in existing buildings”)

Approaches to improving heat pump ramp-up

What has to happen to enable the “ramp-up” to be successfully implemented?

Frequency in %

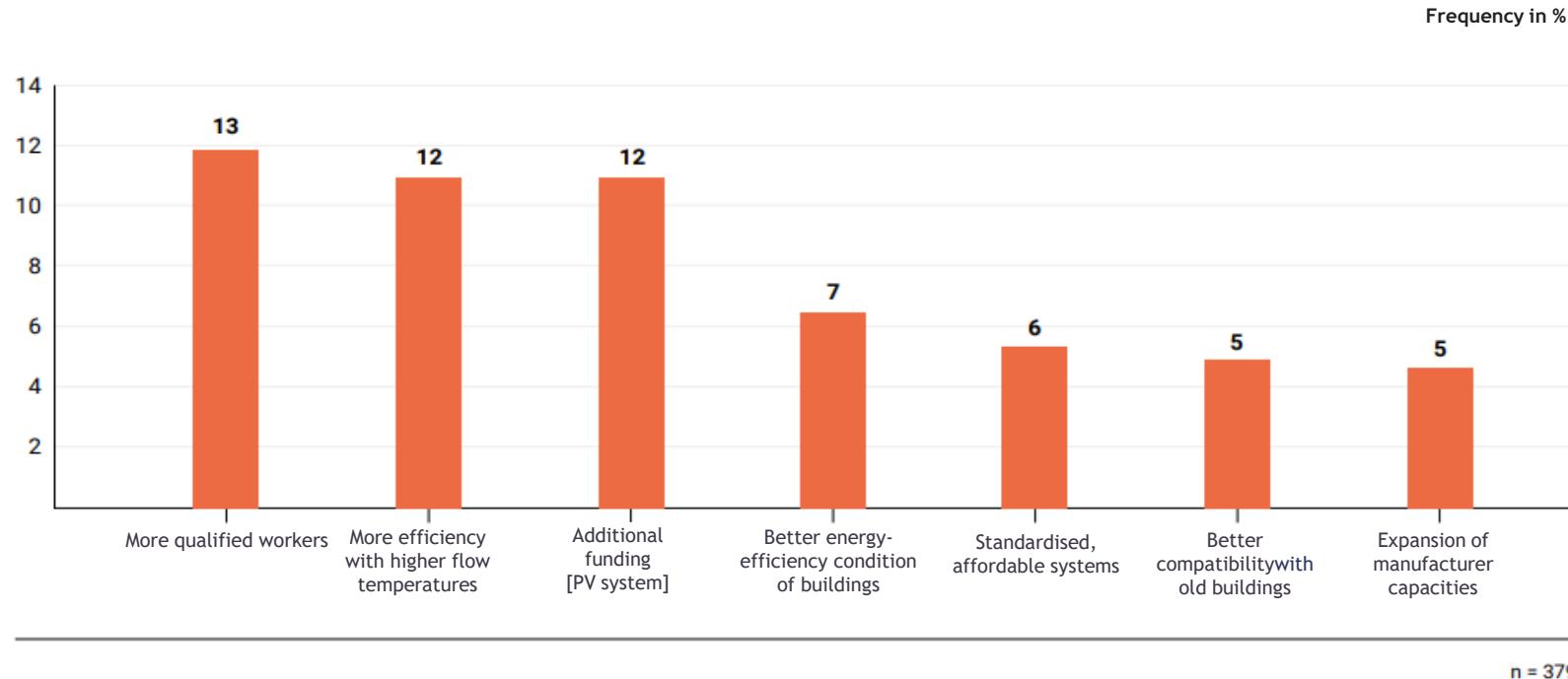


n = 182

Heat pumps in energy consulting

Source: dena survey 2022

What innovations are necessary in order to bring more heat pumps onto the market?



Heat pump ramp-up requires four pillars

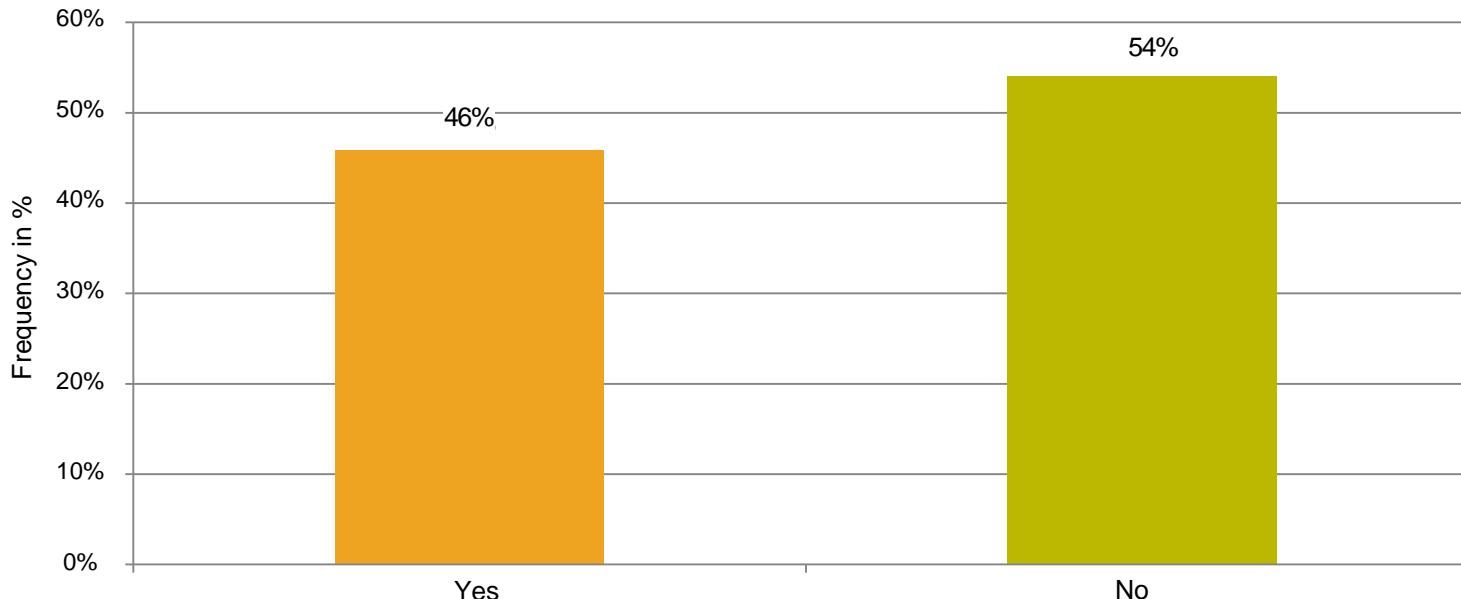
dena assessment:

- **Increasing specialists**
 - Modular training course content for further qualification which is uniform across Germany
 - Raising awareness among young trainees and students
 - Provision of support to those switching professions, breaking off training or retraining
- **Facilitating energy consulting**
 - Tools and information for supportive analysis of the suitability for heat pumps.
- **Driving innovation**
 - Developing technical and systemic approaches
- **Improving the cost situation**
 - Lower production and installation prices
 - Tailored funding without windfall effects

Requirement for information and support

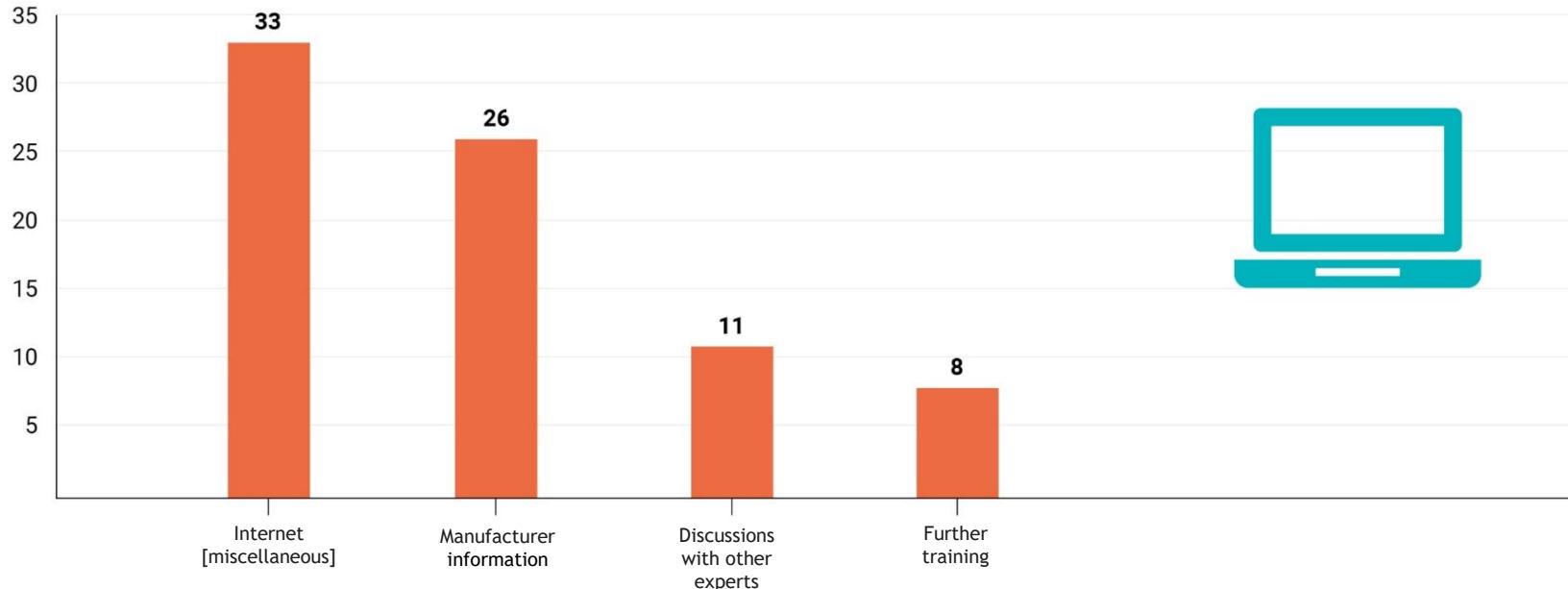
Availability of information

Do you have easily comprehensible information for your consulting which is independent of manufacturers and helps you when providing advice to building contractors?



Where do you find the most helpful information?

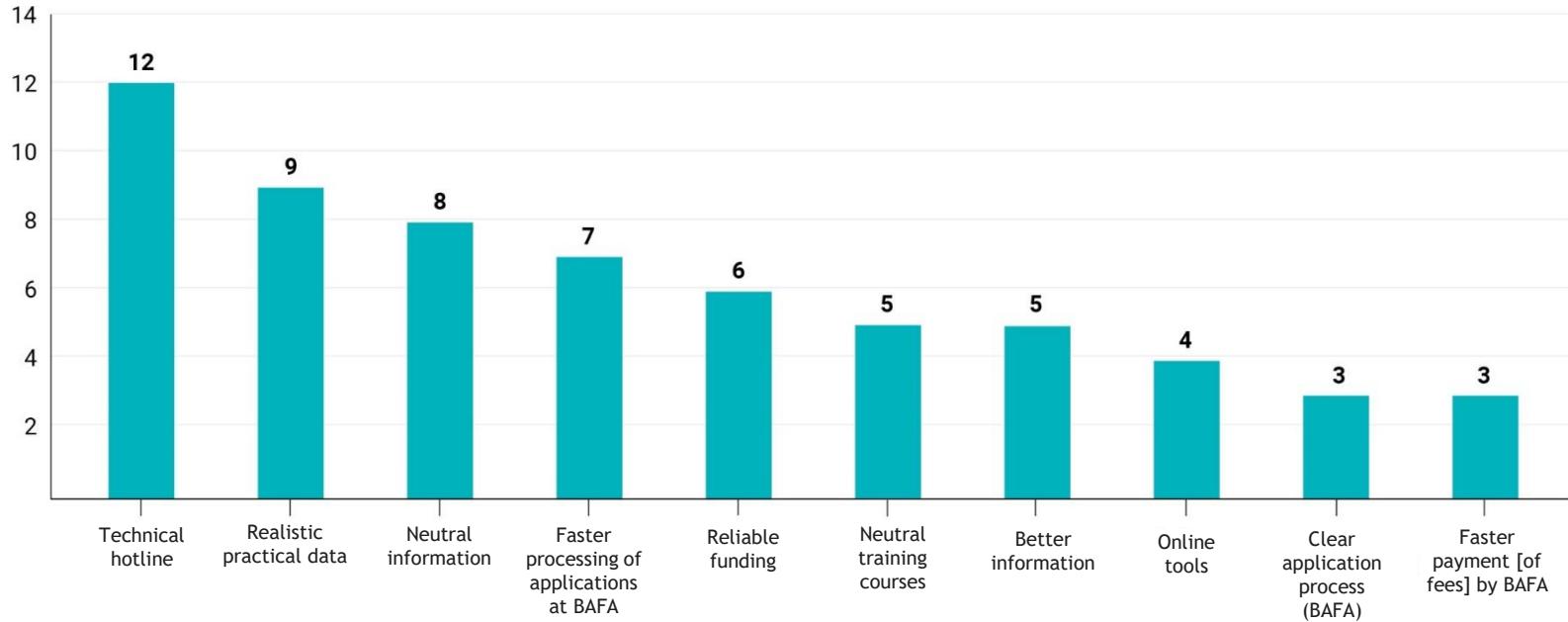
Frequency in %



n = 378

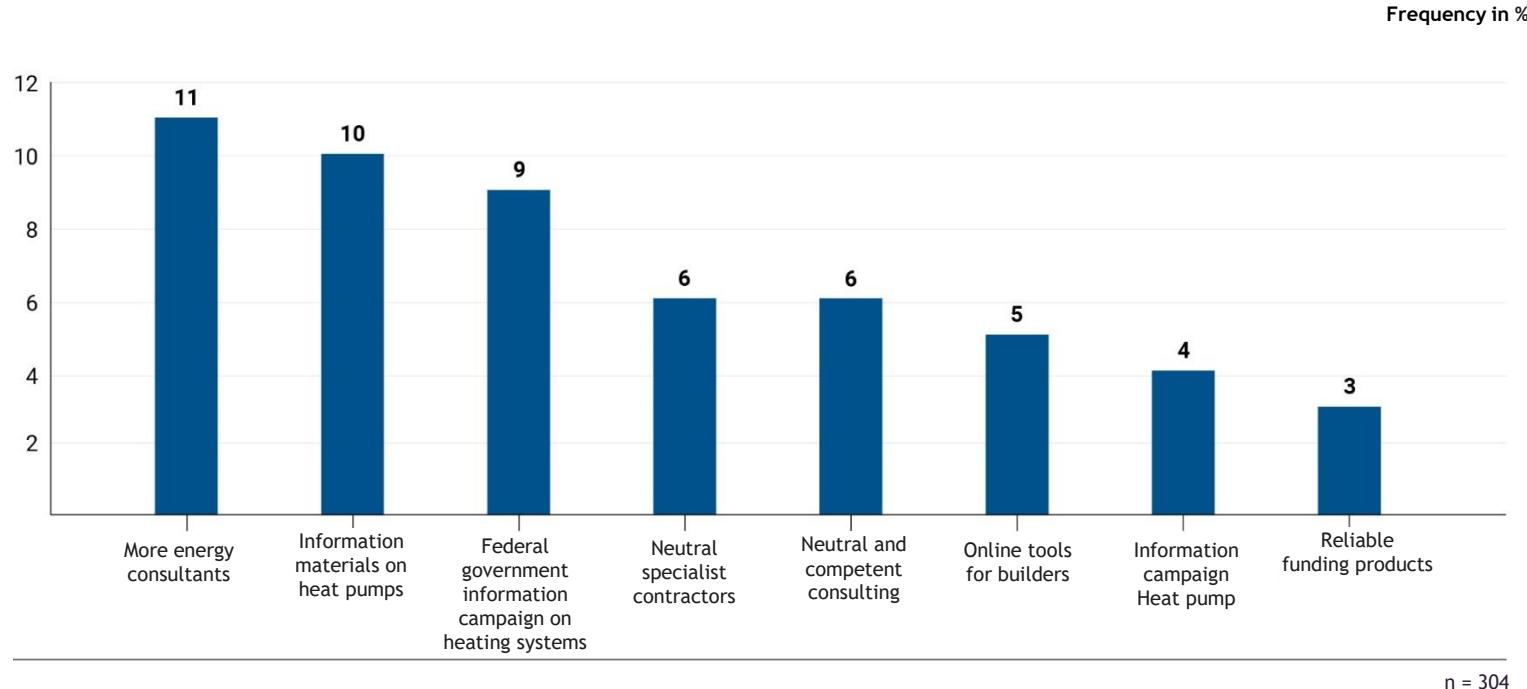
What support services are lacking for energy consultants on the market?

Frequency in %

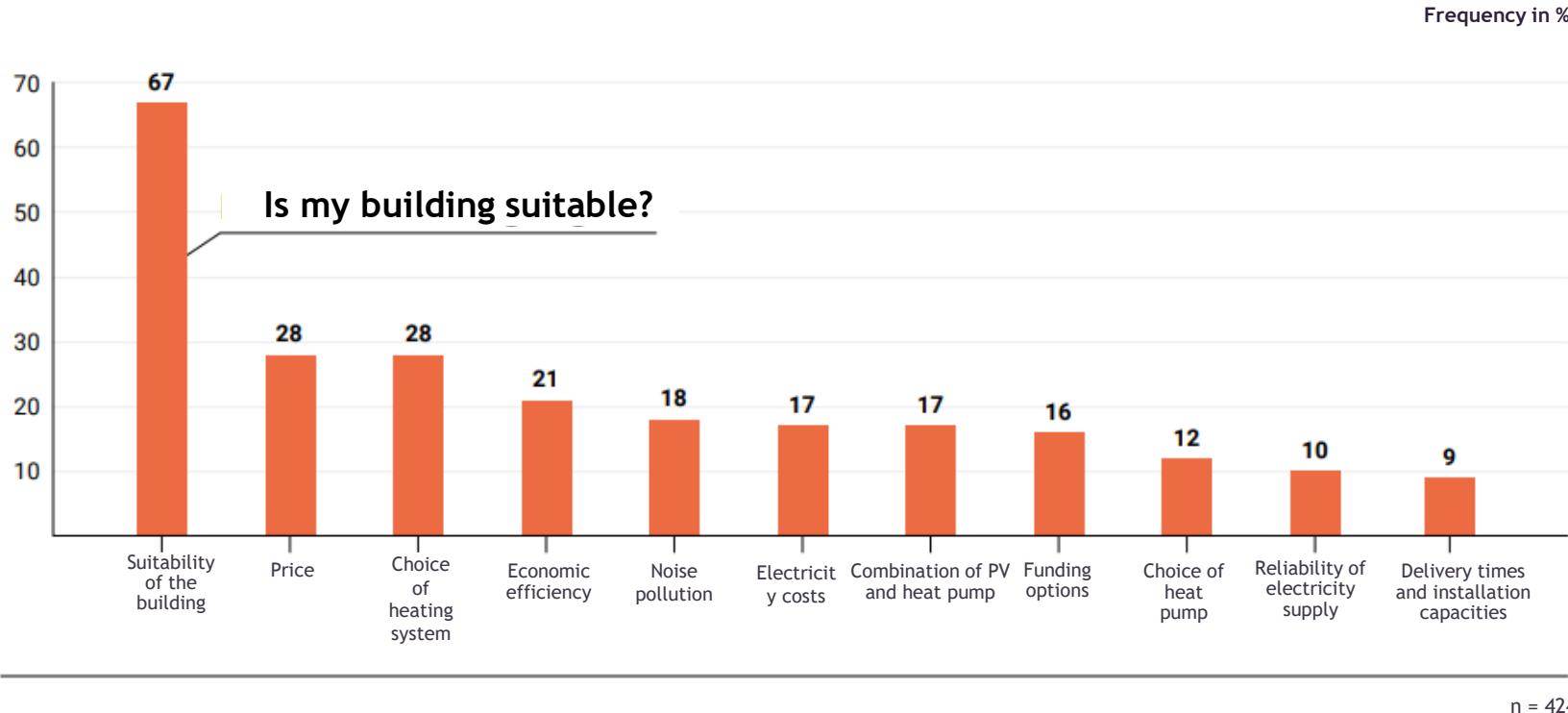


n = 330

What support services are lacking for building contractors?



Questions most frequently asked by building contractors



A need for neutral information on all sides

dena assessment:

-  **Support for energy consultants with information required.** Only around half have helpful information for their consulting work. More technical support is wanted.
-  **Building contractors also have a great demand for neutral information.** More energy consulting and a state information campaign are required in order to clarify uncertainties and support building contractors in their decision-making.

Overall conclusion

- **Demand** for heat pumps is currently very high. The supply side will react to the high demand. It is important to keep **demand stable also in the future**.
- **Costs** for the installation and operation of heat pumps are an important subject for homeowners. This cannot be solved exclusively through funding. **Manufacturers** must also continue to work on simplifications and innovations for increasing efficiency and cost reduction. The **efficiency** of heat pump operation must also be regularly and reliably reviewed.
- **Energy consulting and individual refurbishment roadmap** are valued and expedient instruments for supporting building contractors in the decision to opt for a heat pump.
- Better **information for resolving uncertainties** is required on all sides – by building contractors, planners and implementers. For technical specialists, a qualification offensive is required.



Thank you.

Christian Stolte

Head of Division Climate-neutral buildings

christian.stolte@dena.de

www.dena.de