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KfW Energy Transition Barometer 2025

Support remains stabile – one in three households uses green technologies

Imprint

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KfW
AKfW Research
Palmengartenstrasse 5-9
60325 Frankfurt / Main
Phone +49 69 7431-0, Fax +49 69 7431-2944
www.kfw.de

Authors
Dr Daniel Römer
Phone +49 69 7431-6326

Dr Johannes Rode
Phone +49 69 7431-40496

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Contents

Illustrations

Executive summary

After moderate declines in recent years, public support for the energy transition has stabilised again. The energy transition is seen as important or very important by 83% of households. That is a moderate increase on last year. People's willingness to act dipped slightly and now sits at 59%.

Households that face very high costs to heat their homes are showing strikingly low levels of support. Their willingness to act is also the lowest. While the financial burden of heating has eased significantly for wealthier households, many low-income households still face a high burden.

The share of households using green technologies grew to 13.5 million households, or 33%. That means around 0.8 million households have newly adopted a technology that supports the energy transition. The increase was slightly lower than in the previous year, when 1.2 million new users were added.

The differences in the uptake of green technologies have grown slightly. This applies to, for example, net household income, the home ownership situation, settlement structure and region.

Battery energy storage systems, electric vehicles and photovoltaic systems experienced particularly strong growth. Within just two years, the uptake of home batteries almost tripled. At the same time, the adoption of electric vehicles grew by nearly 70%. One in six households now has a photovoltaic (PV) system.

Almost half of German households are contributing to the generation of green electricity. Around 16% of households have a rooftop PV system, 4% a balcony PV power plant and a further 29% pay a green electricity rate without generating solar electricity themselves.

One in two photovoltaic systems are now being used in conjunction with a home battery. Two years ago, it was only one in four. The desire to be independent of electricity suppliers has overtaken climate action as the main motive of potential users of photovoltaic systems.

Almost two thirds of households (64%) currently use fossil energy sources to generate heat. In households with below-average incomes, that share is slightly higher, at 68%.

Households were more receptive to insulation measures and heat pumps than in the previous year. Households that are informed about the energy situation of their dwelling are even more receptive.

Concerns about cost-effectiveness are the greatest obstacle to switching to heat pumps. Rising prices of fossil fuels under the EU-ETS2 could support the future uptake of heat pumps.

Nearly one in ten households (9%) now has an electric vehicle. Households with high incomes are most likely to use electric vehicles. Medium-income households also have high adoption levels.

Owning a detached or semi-detached house is an important factor for the adoption of electric cars, often in combination with a rooftop photovoltaic system. This combination enables charging with low-cost self-generated electricity. Accordingly, 46% of households with an electric car cited the option of charging with green electricity as a motive for buying it.

The KfW Energy Transition Barometer shows that the transition is proceeding slowly particularly among households in the lower income segment. They often lack the funds for the necessary investments. If the financial burden continues to rise, the energy transition could lose support in this group of households. Information and targeted investment support measures may help.

1. Introduction: Energy transition under pressure

For many people, climate action is no longer the most pressing issue. The public now regards domestic security, social security, immigration and economic growth as more important than climate action.[1] Although the topic may receive less attention in the short term, it will not become less urgent. This is related to the commitments that Germany has made, for example to the EU. Primarily, though, a fossil fuel-based economy will have little future because the costs caused by carbon emissions are becoming increasingly apparent. Estimates of the social cost of climate damage are now at EUR 1,000 or more per tonne of greenhouse gas.[2]

Burning fossil fuels creates considerable negative health impacts.[3] It is responsible for one in five deaths[4] – eight million worldwide – each year.[5] There is also evidence that climate change has significant adverse effects on biodiversity.[6] Not least, green technology adoption creates new market opportunities and the possibility to move away from substantial amounts of fossil fuel imports, particularly in Germany. After all, fossil fuel imports create geopolitical dependencies and come with high costs.[7]

Extensive adoption of climate-friendly technologies helps achieve the climate goals and supports domestic manufacturing. In particular, the automobile industry is facing a major transition. Growing domestic demand for electric cars can help Germany remain a premier location for automotive manufacturing in the future. German manufacturers of heat pumps and systems for generating electricity from renewables are also in a promising position. Potentially, the transition to non-fossil fuel technologies can benefit Germany as a location.

The transition does not only offer opportunities but also challenges existing structures that have so far created many jobs in Germany. In the country, the general working conditions are currently much more tense than during the 'economic miracle' or in the years around the turn of the millennium, when domestic manufacturers were able to act as technology leaders and generate high export surpluses. The deterioration of this comfortable situation is partly due to the technological transition in the wake of decarbonisation, which was pursued more consistently by emerging industrial nations such as China. However, more intense international competition, demographic change and structural factors are also contributing to the fact that Germany now has to work harder to maintain its prosperity. In the long term, sticking to existing structures appears to be the worse strategy compared to adapting to future conditions, even if this involves costs in the short term.

For a successful transition, policymakers have to implement efficient conditions. Ultimately, most of the work must be done by private-sector players. Particularly, private households hold a key position for the success of the transition in the important building and transport sectors. These are also the two sectors which will soon be covered by the new European EU-ETS2 emissions trading system. The literature already predicts EU-ETS2 prices between EUR 51 and 391 per tonne of greenhouse gas for the year 2030.[8] This is likely to cause significant cost increases for households that use gas or oil heating systems.

The KfW Energy Transition Barometer provides insights into how Germany's households are set up and how they view the energy transition. The report focuses on trends in household electricity supply, heating supply and electric mobility.

[1] Cf. FAZ (2025): Wie wichtig das Klima den Wählern noch ist, (*How important climate still is for voters* – our title translation, in German) article by Lukas Fuhr, published on 6 August 2025.

[2] Cf. Bilal and Känzig (2024): The Macro-economic impact of climate change – global vs. local temperature, NBER Working Paper 32450.

[3] Cf. Wolf et al. (2025): Scientists' warning on fossil fuels, Oxford Open Climate Change, 5(1), kgaf011.

[4] Cf. Vohra et al. (2021): Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem, Environmental Research, 195, 110754.

[5] Cf. Lelieveld et al. (2023): Air pollution deaths attributable to fossil fuels: observational and modelling study, BMJ, 383, e077784.

[6] Cf. Katovich (2024): Quantifying the Effects of Energy Infrastructure on Bird Populations and Biodiversity, Environmental Science & Technology, 58, 323–332.

[7] Cf. Rode (2025): Jedes Jahr importiert Deutschland fossile Brennstoffe im Wert von Ø 81 Mrd. EUR (Germany imports fossil fuels worth an average of EUR 81 billion each year – in German), Economics in Brief No. 251, KfW Research. Photovoltaic systems and batteries are largely imported as well. However, these are in use over long periods of time while fossil fuels are burned only once. Further, their import value is lower than that of fossil fuels. In the year 2024, photovoltaic systems worth some EUR 2 billion were imported (Federal Statistical Office, 2025, 4,2 Millionen Photovoltaikanlagen in Deutschland installiert (*4.2 million photovoltaic systems installed in Germany*)), along with batteries worth around EUR 21 billion (ZVEI, 2025, Deutscher Batteriemarkt erlebt 2024 einen Dämpfer (*German battery market experienced a setback in 2024*)).

[8] Cf. Literature overview in 'Figure 2' in Günther et al. (2025): Carbon prices on the rise? Shedding light on the emerging second EU Emissions Trading System (EU ETS 2), Climate Policy, 1–12.

2. Attitudes towards the energy transition

After moderate declines in recent years, public support for the energy transition has stabilised again. Now 83% of households consider the energy transition to be important or very important. That is a moderate increase on last year. People's willingness to act dipped slightly and now sits at 59%.

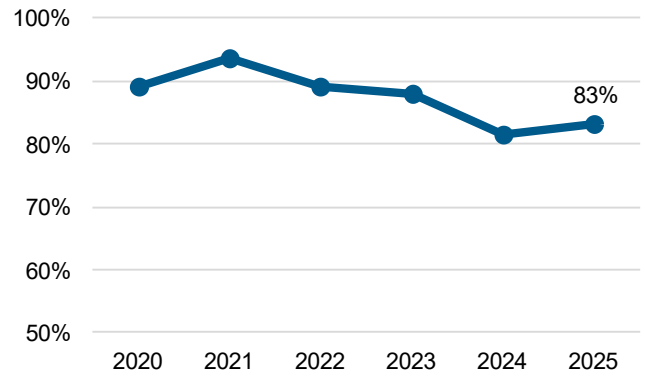
Households that face a high financial burden from heating their homes are showing strikingly low levels of support. Their willingness to act is also the lowest. While the financial burden of heating has eased substantially for wealthier households, many low-income households still experience a high burden.

2.1 Support for energy transition has stabilised

Households continue to strongly support the energy transition. Whereas last year 82% of households believed the energy transition was important or very important, that rate was 83% this year. The slight downward trend from previous years came to a halt. Approval ratings have remained almost steady. Public support for the goals of the energy transition remains high (Figure 2.1).

Figure 2.1: Support for the energy transition has grown slightly again

Households that regard the energy transition to be *important* or *very important*



Source: KfW Energy Transition Barometer

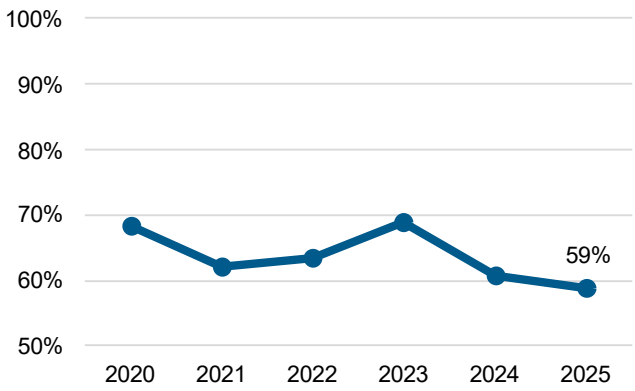
Besides expressing general support, it is also important that households be willing to accept sacrifices to advance the energy transition. This willingness is measured on a scale of 0 to 10 in the KfW Energy Transition Barometer. Households are seen as having a 'high' willingness if they give a score of more than 5.

The share of households reporting high willingness to act is typically lower than the overall support rate because it reflects a further step towards implementation. In the current year, 59% of all households expressed a high willingness to act. That is still the majority but also the lowest value ever recorded. Last year it was 61% and 5 years ago as high as 68% (Figure 2.2).

Overall, support for the energy transition remains high, but activating households is becoming increasingly difficult. Therefore, the question arises whether the two variables in the individual subgroups are developing in similar ways or whether there are diverging trends.

Figure 2.2: Household willingness to act is decreasing slowly

Proportion of households with a high willingness to act to advance the energy transition



Source: KfW Energy Transition Barometer

2.2 The picture across various types of households has generally remained steady

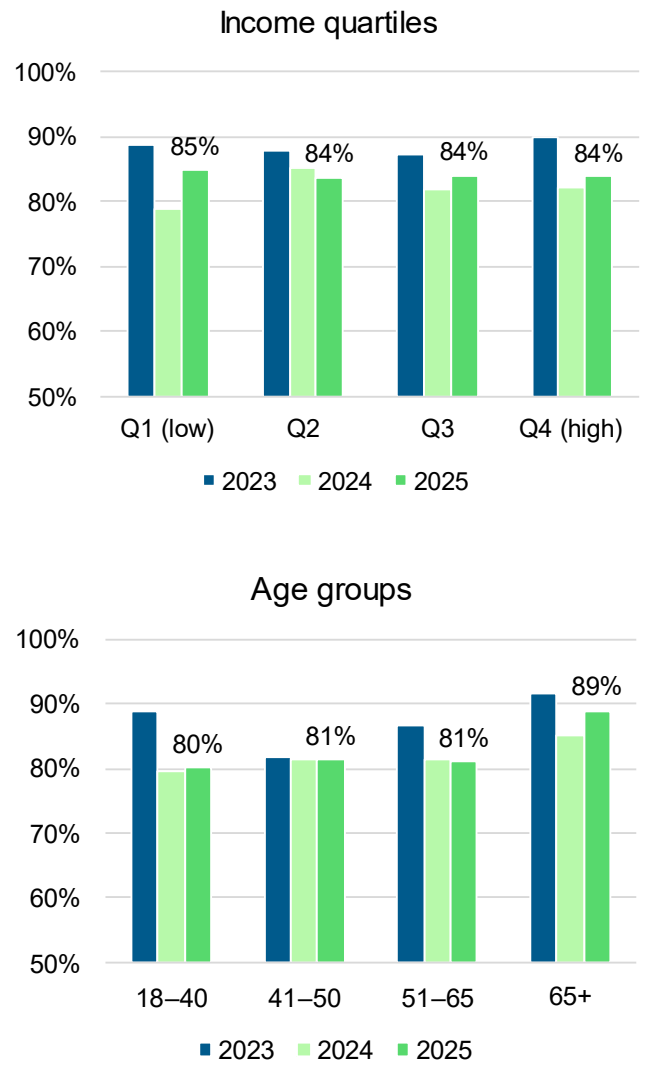
Different household characteristics make it possible to assess whether there are any noteworthy developments in the various subgroups. In this regard, the picture is largely homogeneous.

In terms of **household income**, there are hardly any differences in support levels. That was also the case in the past years and shows that general attitudes towards the goals of the energy transition are not a question of money. By contrast, the higher the net household income, the more willing households are to act. Again, this correlation was more pronounced this year than before.

The willingness to act of low-income households fell at a particularly steep rate in the past two years.

Figure 2.3: Support for the energy transition by socio-demographic characteristics

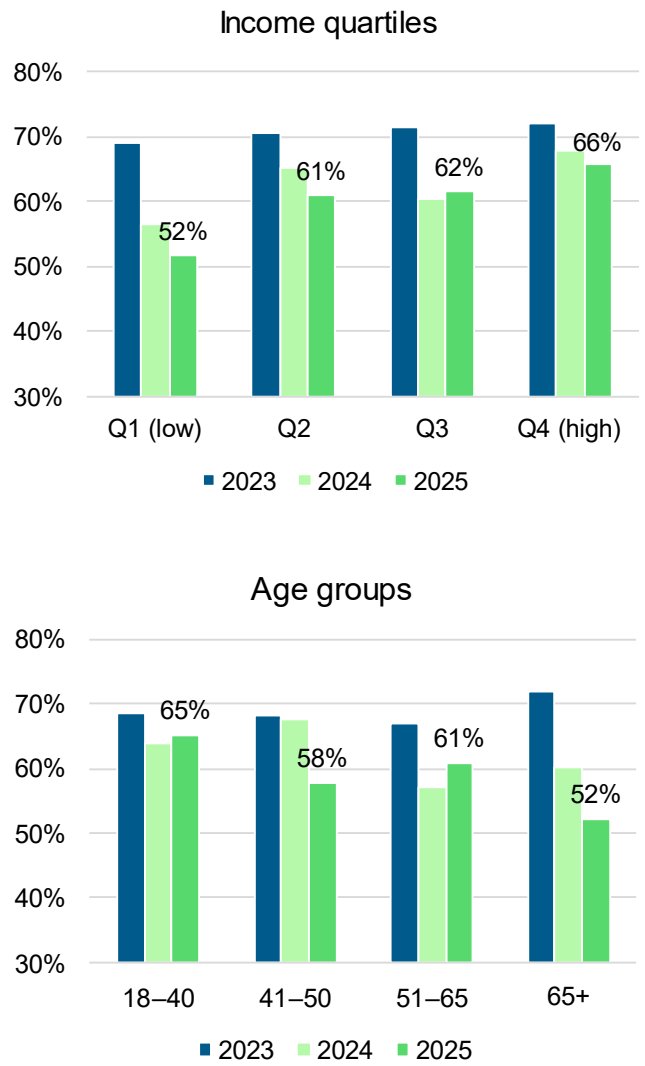
Proportion of households that regard the energy transition to be *important* or *very important*



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

Figure 2.4: Willingness to act for the energy transition by socio-demographic characteristics

Proportion of households with a high willingness to act to advance the energy transition



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

Focusing on **age**, the survey reveals that older people are disproportionately more likely to regard the energy transition as important. At the same time, their own willingness to act is low. One reason for this may be the shorter remaining lifetime, particularly with a view to expenditures. The decline in willingness to act in the last two years of the 65+ category is striking.

There are also differences with respect to households' **educational background**. University graduates express slightly higher support (88%) and a moderately higher willingness to act (71%) than people with vocational qualifications. However, these differences did not widen in the past year (no graphic depiction).

2.3 Socio-demographic differences

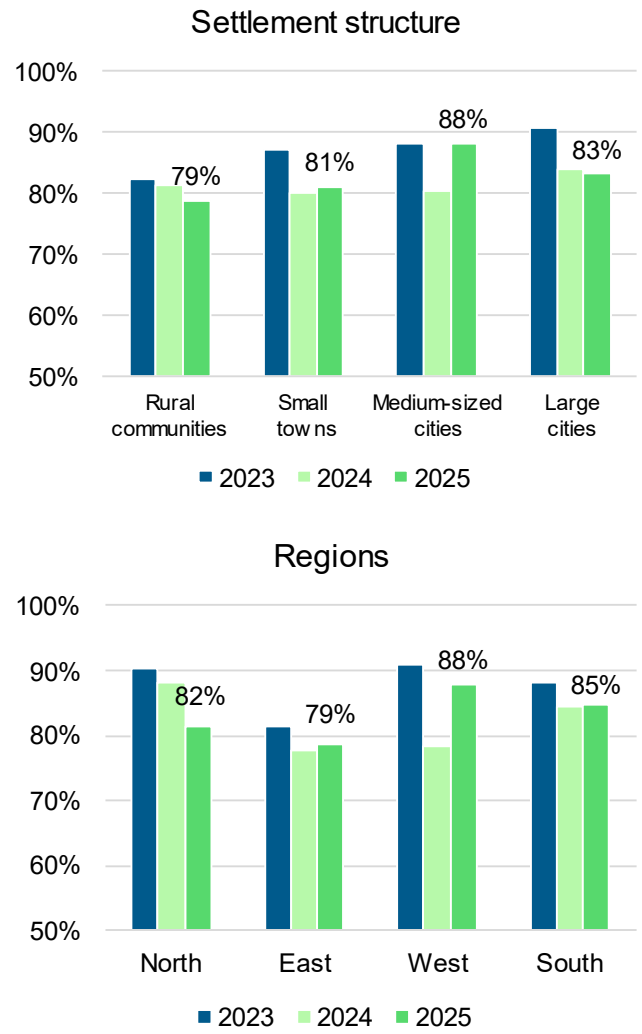
There are minor differences in **settlement structure**. Support is lowest in rural regions, at 79%, but highest for the first time in medium-sized cities, at 88%. Household willingness to act tells a similar story. Large cities always top the list. But overall, community size does not have any influence on the two variables.

Regional differences also become evident but are not so relevant for the levels of support. With respect to household willingness to act they become more noticeable, which has continued to fall in the East of Germany, dropping below 50% for the first time.[9]

[9] Throughout the report, the regions refer to the following federal states: *North:* Bremen, Hamburg, Lower Saxony, Schleswig-Holstein; *East:* Berlin, Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia; *West:* Hessen, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, *South:* Baden-Württemberg, Bavaria.

Figure 2.5: Support for the energy transition by settlement structure and region

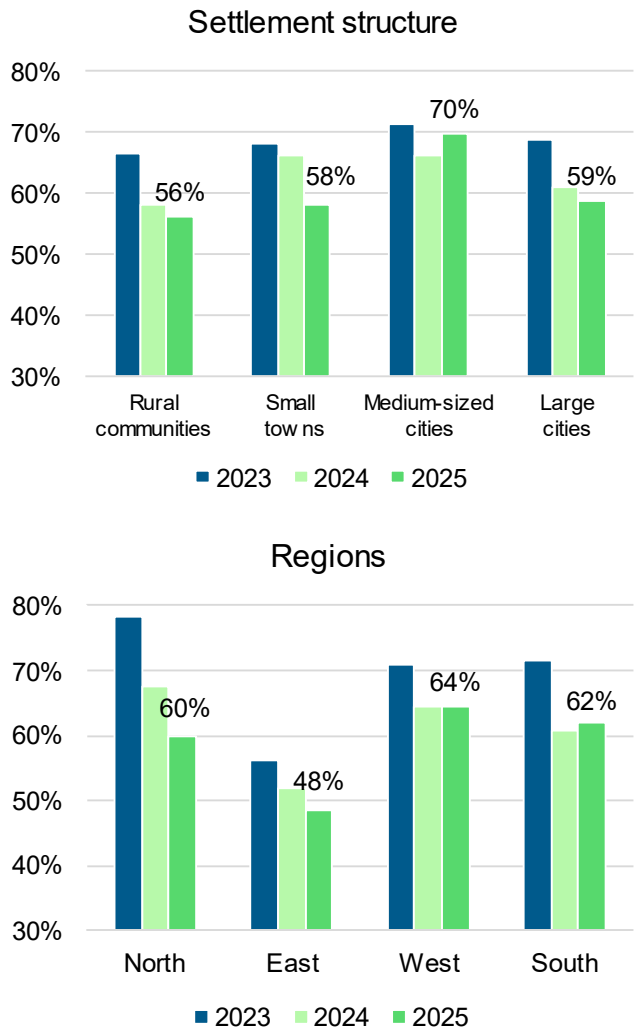
Proportion of households that regard the energy transition to be *important* or *very important*



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

Figure 2.6: Willingness to act by settlement structure and region

Proportion of households with a high willingness to act to advance the energy transition



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

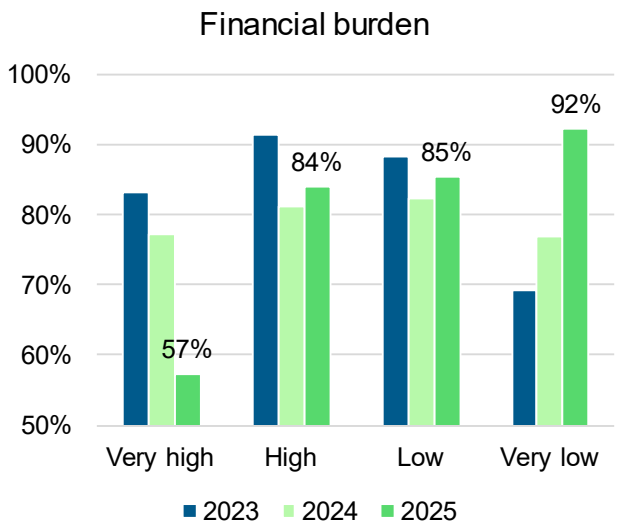
Over the years, **home ownership structures** have played a moderate, steady role in the support for the energy transition. Households that own the dwelling in which they live, express the highest levels of approval – 86% this year. Households residing in detached houses are lowest on the list, at 80%, with tenants in the middle, at 82%. The pattern is similar regarding their willingness to act. Here, the differences are even smaller (no figure).

2.4 Perceived financial burden as a driver

One subgroup that exhibits particularly low rates of support are households that experience heating as a very high **financial burden**. This is the case for around 10% of households in Germany. Just over half (57%) of these households consider the energy transition to be important or very important. This is well below the average rate (Figure 2.7).

Figure 2.7: Support for the energy transition by financial burden of heating supply

Proportion of households that regard the energy transition as *important* or *very important*



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

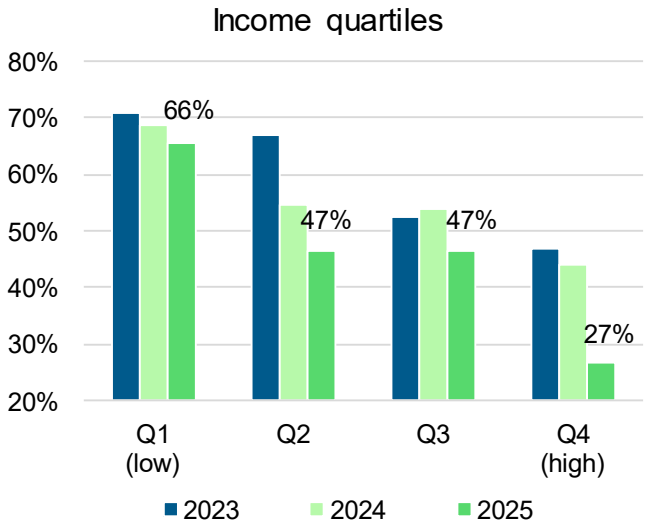
The link between support and financial burden has changed over time. Two years ago, support was highest among households that experienced heating as a high financial burden. It seems that the perception of the energy transition has changed. Two years ago, the focus was on high gas prices resulting from import dependencies and on the potential of the energy transition to reduce energy costs. Electricity and gas prices for household customers have since almost returned to normal. As a result, cost reduction potentials of green technologies are less visible but the need to invest remains, which poses a particular challenge for households experiencing a high financial burden.

With the introduction of the second European Emissions Trading System (EU-ETS2), fossil fuels used for heating will in future be priced at European level. The expected price level ranges from EUR 51 to 391.[10] This is still significantly below the social costs of greenhouse gas emissions but above the current pricing set in Germany by the National Fuel Emissions Trading System. In extreme cases it could be even seven times higher, which is likely to significantly increase the financial burden on households. But these additional costs are not caused by external factors, as was the case two years ago, but are set by politics. Figure 2.7 suggests that rising carbon prices could cause affected households to turn their backs on the energy transition.

Which households are facing high financial burden? The perceived financial burden has decreased overall. However, growing disparities between household incomes are evident (Figure 2.8).

Figure 2.8: Differences in the financial burden between income groups have grown

Proportion of households reporting that heating costs are a high financial burden



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

Whereas two years ago roughly one in two households in the top income quartile was affected by a high financial burden, today it is only around one in four households (27%). Two thirds of households in the bottom income quartile still face a high financial burden, slightly less than two years ago.

In summary, the findings of the KfW Energy Transition Barometer indicate that it could become particularly difficult to incentivise low-income households to make the necessary investments. Information campaigns and targeted investment support measures could help prevent the existing broad support from eroding and increase households' willingness to act.

[10] Cf. Günther et al. (2024): Carbon prices on the rise? Shedding light on the emerging second EU Emissions Trading System (EU ETS 2), Climate Policy, 1–12.

3. Energy transition activities of households

The share of households using green technologies grew to 13.5 million households, or 33%. That means around 0.8 million households have adopted a technology that supports the energy transition for the first time. The increase was slightly lower than in the previous year, when 1.2 million new users were added.

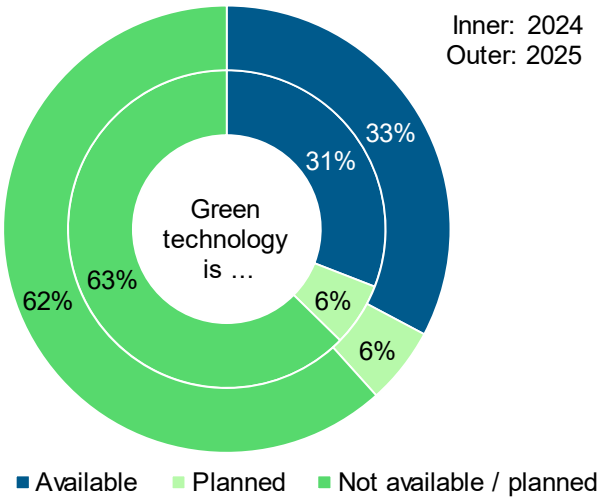
Adoption rates differ by household characteristics. This applies to, for example, net household income, home ownership situation, settlement structure and region.

Home battery storage systems, electric vehicles and photovoltaic systems experienced particularly strong growth. The uptake of home batteries almost tripled within just two years. At the same time, the use of electric vehicles grew by nearly 70%. One in six households now has a photovoltaic system.

3.1 Increase in the adoption of green technologies last year

Around 33% of households – some 13.5 million – use at least one of the following technologies: solar thermal energy, photovoltaic (PV) system, home battery storage, heat pump, combined heat and power, wood pellet heating or electric vehicle (Figure 3.1). A further six per cent (some 2.3 million households) plan to acquire at least one of these technologies in the coming 12 months.

Figure 3.1: Uptake of green technologies has increased



Note: The term green technologies covers solar thermal energy, photovoltaic systems, home battery storage, heat pumps, combined heat and power, wood pellet heating and electric vehicles.

Source: KfW Energy Transition Barometer 2024 and 2025

The share of households that uses at least one green technology increased by about 2 percentage points on the previous year: that equates to around 0.8 million households last year. A year ago, the increase was a slightly higher 3 percentage points, or 1.2 million households.

Last year's rise was evident across most socio-demographic groups in Germany (Figure 3.2). Some existing disparities increased slightly.

With respect to the **settlement structure**, increases occurred in almost all categories. Only in large cities does the development continue to stagnate. This could be due to the tenancy/ownership and dwelling structure and is in line with the development by housing tenure type. Large cities have many tenants and only few households living in detached or semi-detached houses. But for these households it is more difficult to implement the green technologies because they are often dependent on the activity of landlords or the approval of co-owners. As both the support and willingness to act have decreased slightly in large cities, there are no signs of a trend reversal in large cities so that further policy approaches would be helpful to increase the share of households that use green technologies.

Adoption rates differ by **net household income**. Those in the highest income quartile are more than three times as likely to use green technologies as households in the lowest income quartile (50 vs. 16%). Last year adoption rates differed only by factor 2.5.

Households with low incomes are also less likely to have a need to invest. For a photovoltaic or thermal solar system, households who rent are usually dependent on the landlord's investments. And those who do not have a car cannot and need not switch to an electric one (see Chapter 6). The weak dynamic in low-income groups is nonetheless challenging because, first, it is important for both the success and the societal acceptance of the energy transition that all households can participate and second, households with low incomes are particularly affected by a high financial burden and are more likely to live in dwellings with poor energy efficiency.

The share of households with green technology has grown particularly in the south of the country. Regional differences have also increased again. Households with green technology are almost twice as common in southern Germany as in eastern Germany (44 vs. 23%). In northern and western Germany, the share of households with green technology now sits at 27 and 31%.

Figure 3.2: Households with green technology by socio-demographic characteristics

Proportion of households with at least one green technology

Note: The term green technologies covers solar thermal energy, photovoltaic systems, home battery storage, heat pumps, combined heat and power, wood pellet heating and electric vehicles. DH are detached houses, SDH are semi-detached houses.

Source: KfW Energy Transition Barometer 2023, 2024 and 2025

Figure 3.3 illustrates the shares of households with green technology by **federal state**. The low adoption rates in Bremen (12%) and Hamburg (15%) are noteworthy and could be due to the housing tenure type in large cities. They typically have many tenants and only few households living in detached or semi-detached houses, making it more difficult to implement the green technologies. A look at the map also highlights the south-north divide, with the two southern states of Bavaria and Baden-Württemberg clearly ahead of the rest. Among other factors, the more favourable local conditions for electricity from photovoltaics could be the reason for the north-south divide.

The **year of completion of the dwellings** for households with green technology also reveals major differences (Figure 3.4). This analysis includes both homeowners and tenants. In dwellings completed before 1978, the share of households that use at least one green technology stands at 26%. In dwellings built from the year 2002, the share with green technology rises to 72%. In new dwellings, green technology adoption increased more than in older dwellings.

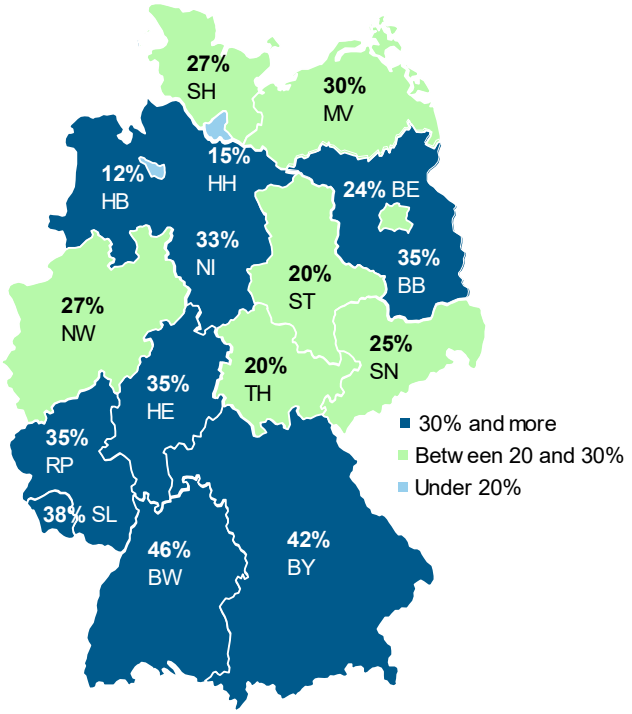
In buildings completed before 1994, adoption dynamics are low. This observation may be associated with the energy systems installed and the residents' age. This part of the housing stock should receive particular attention to harness the full potential and achieve the goal of a climate-neutral housing stock.

3.2 Strong growth in home batteries, photovoltaic systems and electric vehicles

PV systems are the most widely used green technology (Figure 3.5). Today, around 16% of households have a rooftop photovoltaic system.

Figure 3.3: Households with green technology by state

Proportion of households with at least one green technology

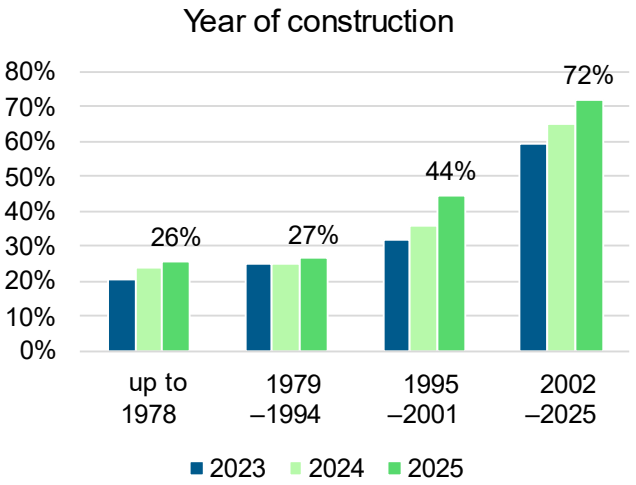


Note: The term green technologies covers solar thermal energy, photovoltaic systems, home battery storage, heat pumps, combined heat and power, wood pellet heating and electric vehicles.

Source: KfW Energy Transition Barometer 2025

The current wave of the report distinguishes between balcony power plants and rooftop PV systems for the first time. The info box to the right contains details on balcony power plants. Here, we focus on rooftop PV systems only. Transferring this methodological adjustment to the past waves, reveals an increase of nearly 2 percentage points for rooftop PV systems for this year on the previous year.[11] Two years earlier that share was only 11%. These increases of just under 50% within two years demonstrate the strong momentum in the uptake of photovoltaic systems. Among homeowners, over 29% already have a PV system compared with around 24% in the previous year.

Figure 3.4: Households engaged in the energy transition based on year of construction of dwelling



Note: The term green technologies covers solar thermal energy, photovoltaic systems, home battery storage, heat pumps, combined heat and power, wood pellet heating and electric vehicles.

Source: KfW Energy Transition Barometer 2023, 2024 and 2025

Info box: Balcony power plants

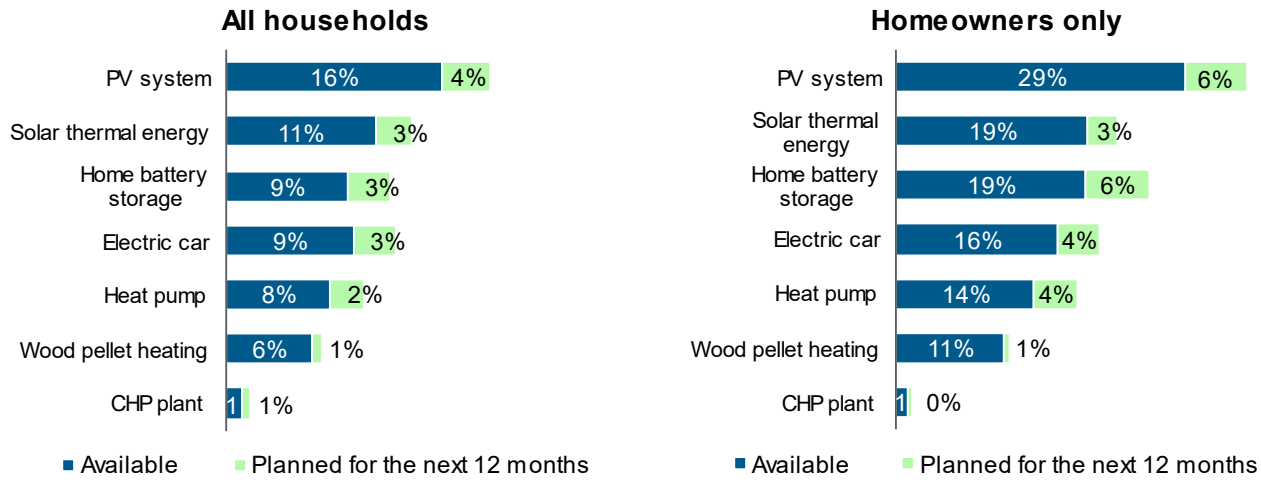
Balcony power plants are small photovoltaic systems. They comprise one or more solar modules typically plugged into the final consumer's electrical supply with a low voltage lead through a small inverter. Balcony power plants are therefore also known as plug-in or mini-PV systems. They are often mounted to a balcony, carport or garage rooftop. They are allowed to feed up to 800 W into the home electricity supply. The electricity they generate can be used immediately. Unused electricity flows unpaid into the public grid.

This edition of the KfW Energy Transition Barometer considers balcony power plants explicitly for the first time in order to capture the equipment used for solar electricity generation with precision. The term green technology covers only rooftop photovoltaic system because a balcony power plant supplies only a low amount of green electricity. Section 4 on electricity supply analyses the use of balcony power plants.

[11] The survey data of the KfW Energy Transition Barometer show that balcony power plants were in some cases reported as rooftop photovoltaic systems because of the survey method used in the previous years. In this wave, the share of balcony power plants was explicitly surveyed for the first time with an additional question. On that basis, a correction factor was determined to calculate the share of households with a rooftop photovoltaic system for the previous year.

Figure 3.5: PV, electric cars and home batteries have the strongest planned growth rates

Proportion of all households (on the left) and households residing in their own home (on the right), that use or plan to use the respective technology.



Source: KfW Energy Transition Barometer 2025

Solar thermal systems follow in second place. Around 11% of all households and 19% of homeowner today use a solar thermal system. Two years ago, that share was only around nine per cent. Adoption increased, although at a much slower pace than for photovoltaic systems. Three per cent of households plan an installation in the next years. This demonstrates a slow but steady increase in the use of solar thermal systems.

Home battery storage saw very dynamic growth. Around nine per cent of all households now use such a system. That was another substantial increase on the previous year (6%). Two years ago, only three per cent of households used home battery storage – a mere one third of the current rate. The uptake has also tripled among homeowners. In 2023 the rate was only seven per cent. Last year it was 13% and currently it is 19%.

Electric vehicles are currently used by nine per cent of all households and 16% of all homeowners. Furthermore, 3% of all households and 4% of all homeowners plan to acquire an electric vehicle in the coming 12 months. A year ago, that share still stood at seven per cent and two years ago it was just under 6% of all households. In relative terms, the share increased by almost 70% in just two years, demonstrating the very rapid uptake of this technology.

Heat pumps also saw growth on the previous year. Today, 8% of all households and 14% of all homeowners report using a heat pump as their primary source of heating, compared with 6 and 12% in the previous year.

The use of **wood pellet heating** (6% of all households, 11% of homeowners) is on a similar level as in the previous year. Planned purchases over the next 12 months are also lower.

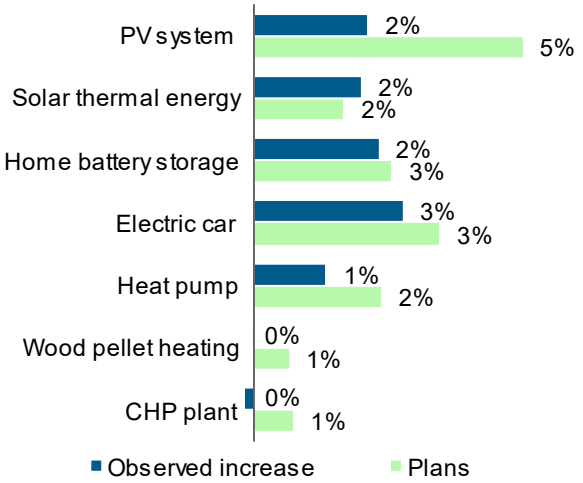
Combined heat and power (CHP) plants do not play a particular role in terms of actual distribution nor planned acquisitions.

3.3 Differences in the implementation of planned projects

Comparing the purchases planned a year ago with realised purchases shows different patterns (Figure 3.6). A wide gap between plan and implementation emerges for photovoltaic systems. Here, fewer than half of planned installations were implemented, while realised growth of home batteries, electric cars and solar thermal systems was in line with planning. Potentially, these technologies are more easily adopted than photovoltaic systems – or that households rather planned a balcony power plant. Heat pumps occupy a medium position regarding the implementation gap. Half the planned heat pumps were installed.

Figure 3.6: Actual vs. planned acquisition

Proportion of all households, observed increase as difference in usage rates between both years, planning rates from previous year



Source: KfW Energy Transition Barometer 2024 and 2025

4. Household electricity supply

Almost half the households in Germany are contributing to the generation of green electricity. Around 16% of households have a rooftop solar system, 4% a balcony power plant and 29% pay a green electricity rate without generating solar electricity themselves.

Every second photovoltaic systems is now combined with home battery storage. Two years ago, it was only one in four. Being independent of electricity suppliers has overtaken climate action as the main motive of potential users of photovoltaic systems.

4.1 Contributions to green electricity generation

The KfW Energy Transition Barometer provides insights into the electricity rates paid by households in Germany. Overall, 38% of households are paying a green electricity rate. Another 5% plan to sign up for a green rate in the next 12 months.

The adoption of such a green rate grows with income. In the bottom income quartile, a good one quarter of households are paying a green electricity rate (27%), while in the top quartile it is almost twice as many, or 51%. Furthermore, homeowners are more likely to pay a green electricity rate (42%) than tenants (36%). Among the youngest households (up to 40 years), those who pay a green electricity rate is the highest (42%), whereas among the oldest households (65 years and older) it is the lowest (33%).

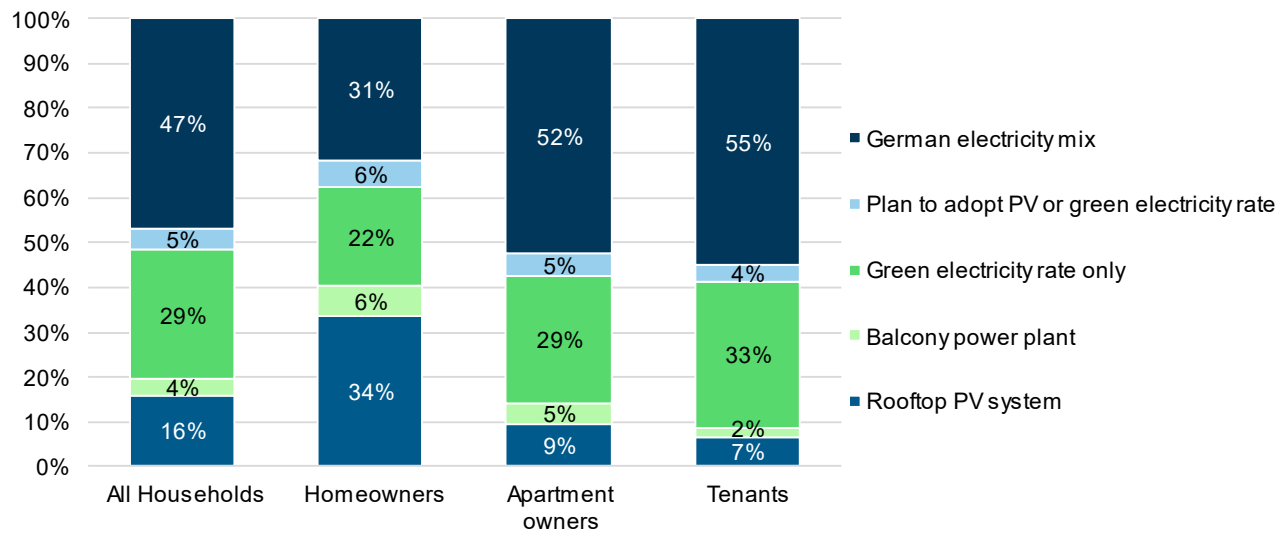
An analysis of how many households pay green electricity rates depending on whether they generate solar electricity follows. The survey reveals that households tend to use both instruments complementarily. Those that have a photovoltaic system are more likely to use green electricity (49%) than those that do not (36%).

Figure 4.1 shows the options how households can obtain green electricity. Nearly half (48%) of all households in Germany can already access green electricity, either by using a PV system (16%), with a balcony power plant (4%) or by signing up for a green electricity rate (29%). Four years ago, it was a much lower 39%. A further rise appears to be imminent. Around 5% of households have planned one of these three measures for the next 12 months. The remaining 47% of households have not taken or planned any measures to access green electricity (beyond the German electricity mix).

Among homeowners, almost two thirds of households (62%) are already accessing green electricity directly, either from their rooftop PV system (34%), a balcony power plant (6%) or through a green electricity rate (31%). Another 6% plan to do so in the next 12 months. That leaves 31% of households with no access to green electricity or relevant plans.

Figure 4.1: Household electricity supply

Proportion of households by access to green electricity



Note: The category rooftop PV system includes households that are additionally using a balcony power plant, a green electricity rate or both. The category balcony power plant includes households that have additionally signed up for a green electricity rate.

Source: KfW Energy Transition Barometer 2025

4.2 Heterogeneity of green electricity contributions

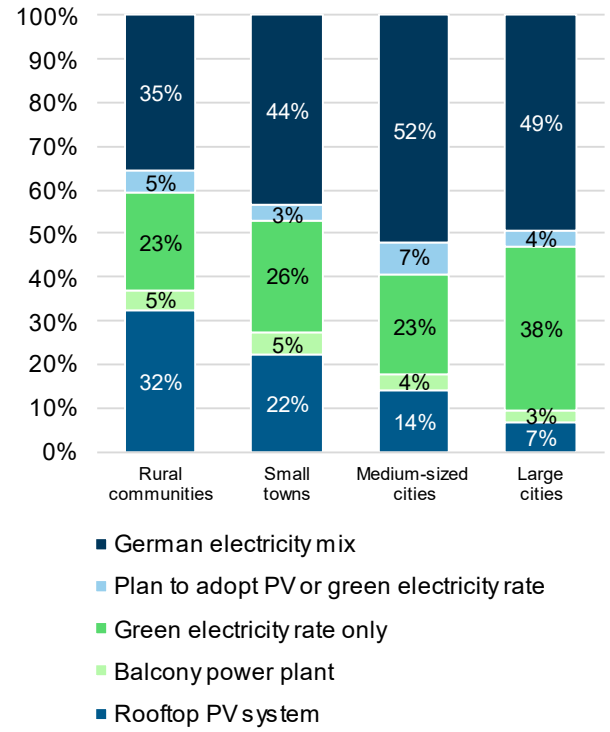
Photovoltaic systems are less common among owners and tenants of flats, at 9 and 7%.

When also considering balcony power plants and green electricity rates, the share of such households that have no access to green electricity exceeds 50% in both cases.

A look at the various groups reveals a clear urban-rural divide in PV installations (Figure 4.2). The divide is slightly reduced by households that use green electricity rates without a PV system, particularly in large cities. The countryside, however, still has the smallest share of households that exclusively use the German electricity mix (35%). That share is larger in medium-sized cities (52%) and large cities (49%).

Figure 4.2: Electricity supply by settlement structure

Proportion of households by access to green electricity



Note: Figure 4.1 contains details on the categories.

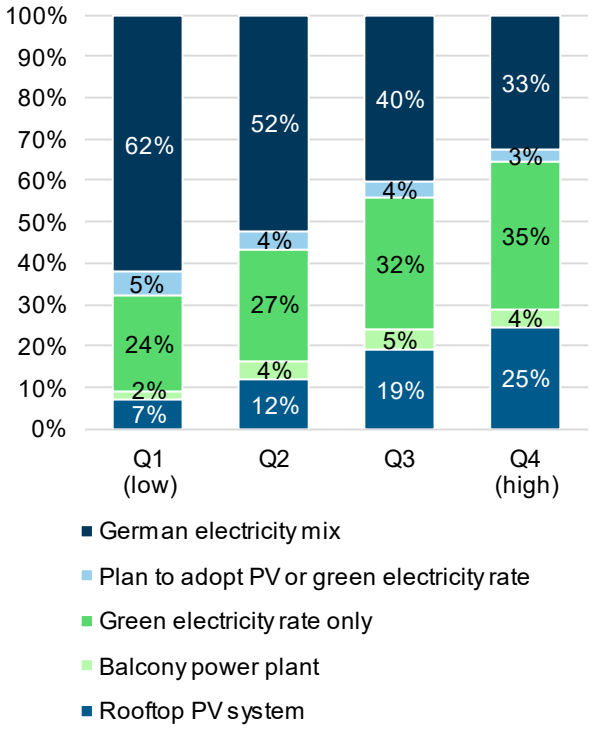
Source: KfW Energy Transition Barometer 2025

In addition, the adoption of rooftop photovoltaic systems differs by **household income**. The pattern is similar for the additional use of green electricity rates (Figure 4.3). In the top income quartile, only one third of households use the German electricity mix exclusively.

From a **regional perspective**, the survey reveals that rooftop PV systems are most likely to be installed in the south of the country. With respect to the share of 'passive' households that use only the German electricity mix, however, differences are less pronounced. Only in eastern Germany does this share stand out at 58% (Figure 4.4).

Figure 4.3: Electricity supply by income

Proportion of households by access to green electricity

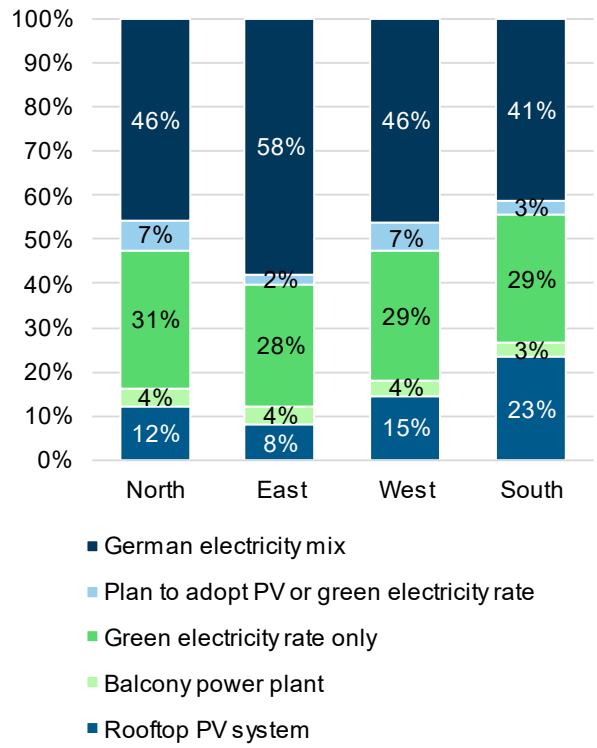


Note: Figure 4.1 contains details on the categories.

Source: KfW Energy Transition Barometer 2025

Figure 4.4: Electricity supply by region

Proportion of households by access to green electricity



Note: Figure 4.1 contains details on the categories.

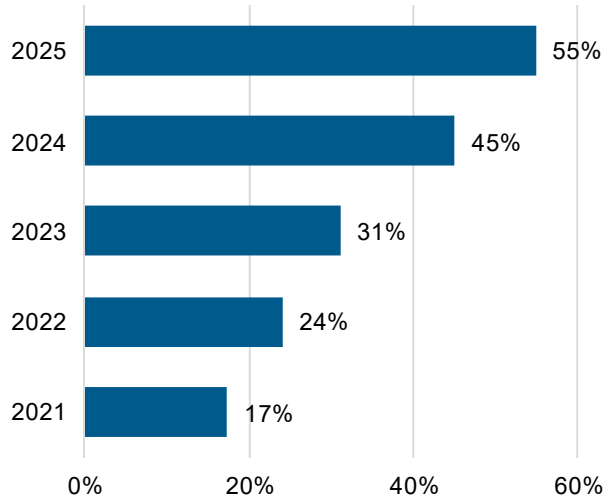
Source: KfW Energy Transition Barometer 2025

4.3 Combination with home battery storage

Photovoltaic systems are increasingly combined with home battery storage (Figure 4.5). While 17% of households with photovoltaic systems combined them with a home battery four years ago, that share now sits at 55%. The main reason for this is the sharp drop in the prices of battery storage systems. Prices fell by some 85% between 2013 and 2024.[12]

Figure 4.5: More than half of all household PV systems are now combined with a home battery

Proportion of households with home battery storage out of all households that use a rooftop photovoltaic system



Source: KfW Energy Transition Barometer 2025

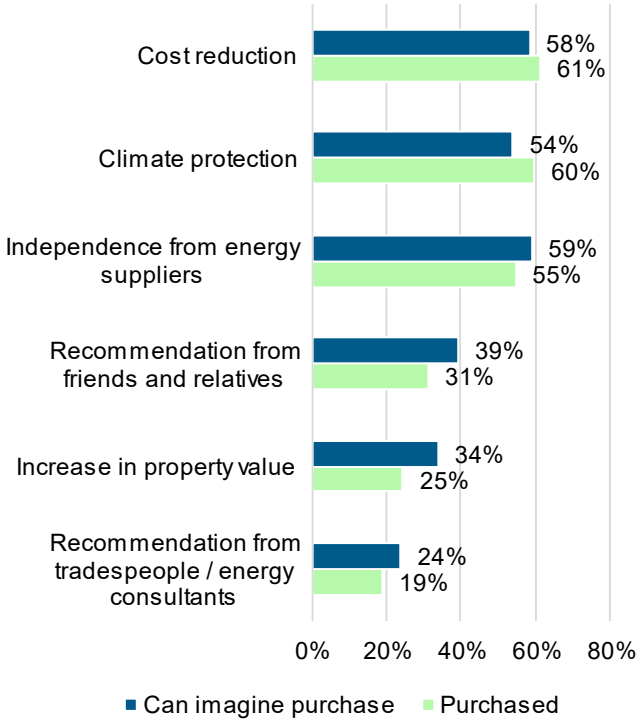
4.4 Perceived benefits

The majority of homeowners without a photovoltaic system can generally imagine installing one (57%). In households that are already paying a green electricity rate without generating electricity themselves, that share was even slightly higher at 62%. Households with balcony power plants, on the other hand, are slightly less inclined to also install a rooftop photovoltaic system (51%). In some of these cases, installing a rooftop system may not be that easy. Overall, there continues to be growth potential for household photovoltaic systems.

What motivates households to use a photovoltaic system? The survey asked both existing users and households who can generally imagine installing one. It revealed moderate differences (Figure 4.6). Current users stated climate action (61%) and cost savings (60%) as the main reasons. Independence from energy utilities ranked third, with 55%. For prospective users, independence is the main motive (59%).

Figure 4.6: Benefits of photovoltaic systems

Proportion of households that currently have or can imagine adopting a photovoltaic system, who see the relevant aspect as a benefit



Source: KfW Energy Transition Barometer 2025

Cost savings rank second (58%) and climate action only ranks third, with 55%. A year ago, prospective users were much more euphoric about the benefits of taking climate action (76%) and cost savings (73%).

Recommendations from friends and relatives were the fourth most important driver for installing photovoltaic systems. This factor plays a larger role for potential users, with 39%, than for households that already use a photovoltaic system. This result demonstrates that social networks play an important role.[13]

4.5 Perceived barriers

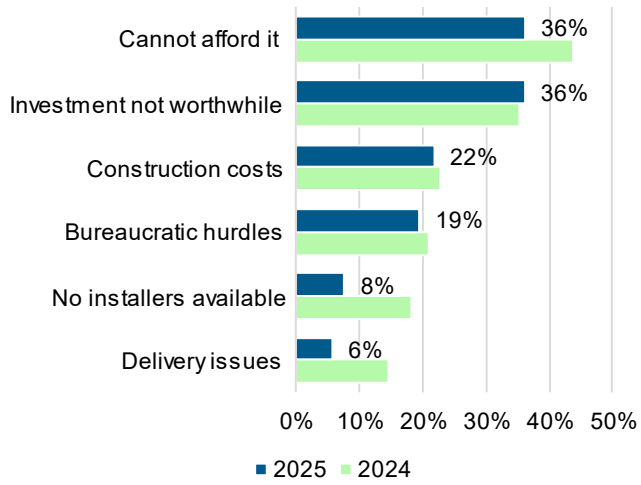
Financial aspects are the main barrier to install. Around 36% of all households said that they cannot afford a photovoltaic system even if they can generally imagine acquiring one. This was closely followed by doubts about the cost-effectiveness of the investment, with 36%. Around 20% of households also shy away from the cost of installation and the paperwork involved (Figure 4.7). While concern about installer availability and photovoltaic system supply bottlenecks was much higher last year, it now hardly plays a role, at 8 and 6%, respectively.

[12] Cf. BloombergNEF (2024): Lithium-Ion Battery Pack Prices See Largest Drop Since 2017, Falling to $115 per Kilowatt-Hour, last visited on 12 September 2025.

[13] The literature confirms the relevance of social linkages, i.e., of peer effects: for Germany; see Rode and Weber (2016, Does Localized Imitation Drive Technology Adoption? A Case Study on Rooftop Photovoltaic Systems in Germany, Journal of Environmental Economics and Management, 78, 38–48), and the USA, see Bollinger and Gillingham (2012, Peer Effects in the Diffusion of Solar Photovoltaic Panels, Marketing Science, 31(6), 900–912).

Figure 4.7: Barriers to PV adoption

Frequency of reasons given for not yet purchasing a photovoltaic system. Multiple responses were possible.



Source: KfW Energy Transition Barometer 2025

5. Household heating supply

Almost two thirds of households (64%) still use fossil energy sources for heating. In households with below-average incomes, that share is slightly higher, at 68%.

Households are now more open to insulation measures and heat pumps than last year. Households that are informed about the energy situation of their dwelling are even slightly more receptive.

Concerns about cost-effectiveness are the greatest obstacle to making the switch to heat pumps. Rising prices of fossil fuels under the EU-ETS2 could support the future uptake of heat pumps.

5.1 Household heating supply

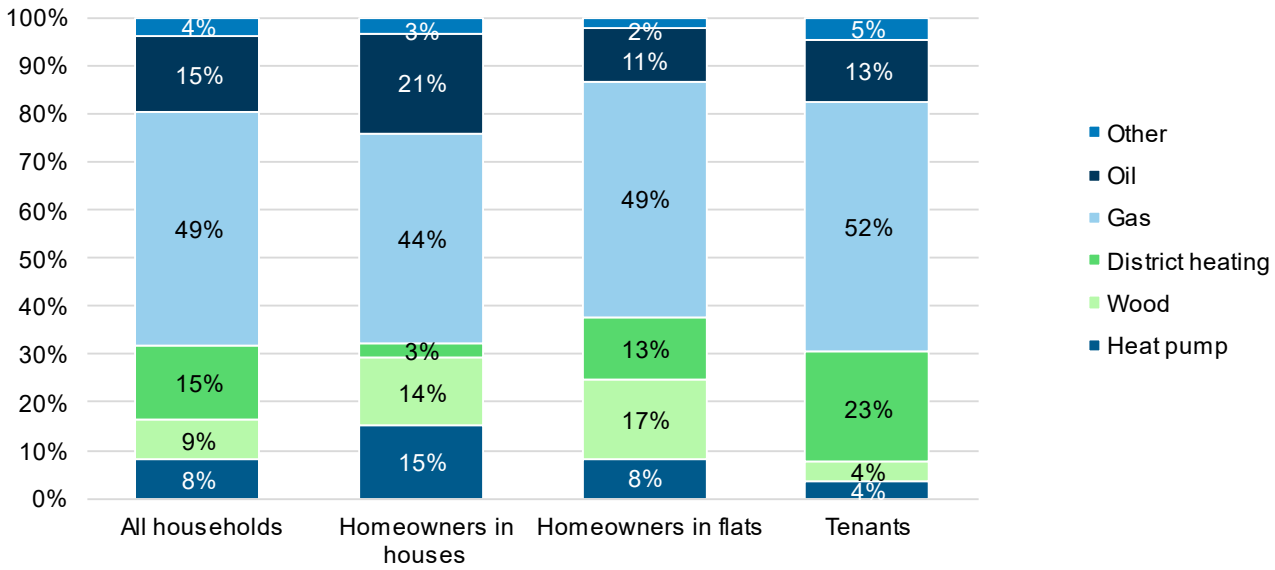
A look at how homes are heated highlights the need for modernisation on the road to climate neutrality. Heat pumps are in line with the goal of a climate-neutral building stock since electricity is to be generated largely emission-free in Germany by the year 2035.[14] Wood is another energy source. It is used in wood and wood-pellet heaters and is regarded as climate neutral in life-cycle assessments because its combustion only releases previously stored carbon. Households that are connected to a district heating system do not have any investment requirement either. Most district heat is still being generated from the combustion of gas and coal and only one fifth from renewable energy, so that district heating providers are facing substantial investment expenditure.[15] As a result, households bear a certain price risk but are not forced to make any investments of their own. Taken together, around 32% of all households use these three types of heating. These households do not have to take any action themselves (Figure 5.1).

It is a different story in households where heating is based directly on the combustion of oil or natural gas – both fossil fuels. Climate-neutral substitute fuels are unlikely to become available for heating in the medium term either, partly because generating heat using synthetic fuels is more electricity-intensive and therefore less efficient than using electricity directly in heat pumps. Households with oil or gas heating systems will therefore likely face the need to make investments in the coming years. Carbon pricing is also likely to increase the costs for fossil fuels for heating. This applies to almost two thirds of all households (64%).

The remaining four per cent of households use other types of heating such as night storage heating systems or no heating at all. Looking ahead, these households can also expect to face the need for investment.

Figure 5.1: Primary sources of heating in German households

Primary energy source used for heating by all households by ownership situation



Source: KfW Energy Transition Barometer 2025

[14] Cf. BMWE (2025): Ein Strommarkt für die Energiewende (*An electricity market for the energy transition* – our title translation, in German), last visited on 12 September 2025.

[15] Cf. AGEE (2024): Nah- und Fernwärmeerzeugung nach Energieträgern (*Local and district heat generation by energy sources* – our title translation, in German). See also DENA (2025): Benötigen wir eine Preisregulierung für Fernwärme? (*Do we need price regulation for district heating?* – our title translation, in German), each last visited on 12 September 2025.

5.2 Heating by group

There are substantial differences in household heating by **ownership situation** (Figure 5.1). Of homeowners in houses, 15% use heat pumps. In contrast, the adoption rate for heat pumps is lower for homeowners in flats (8%) and for tenants (4%). Wood (pellet) heaters and district heating, on the other hand, are used less frequently by homeowners in houses than by homeowners in flats and tenanted properties. On balance, around one third of households have a future-proof heating system in all three ownership constellations. Conversely, almost two thirds of households have a substantial need for upgrades. This is the case for 65% of homeowners in houses, for 60% of homeowners in flats and for 65% of tenanted properties.

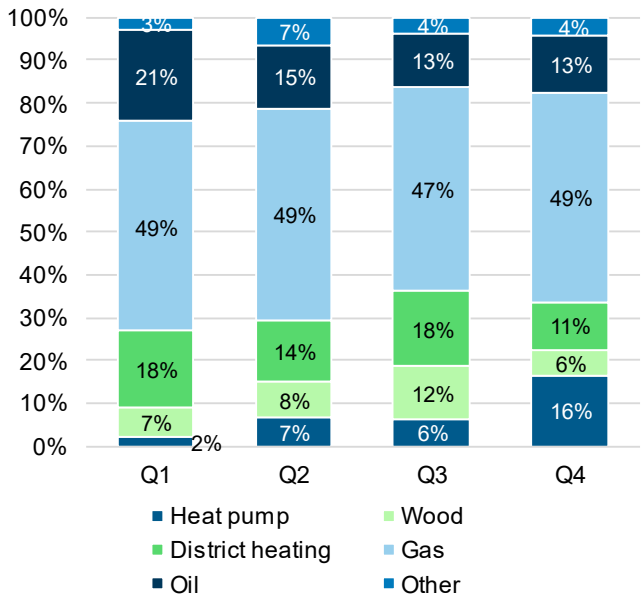
Regarding the age of the heating system, the situation is as follows: In tenanted properties, 39% of oil and gas heating systems are already more than 20 years old, while in tenanted units it is as many as 41%. Fewer homeowners in houses (30%) and in flats (31%) have oil and gas heating systems which are more than 20 years old.

Differences also exist in terms of **net household income** (Figure 5.2). Heat pumps are used eight times more often in the top income quartile (16% of households) than in the bottom income quartile (2%). District heating, on the other hand, is most common in the bottom income quartile, which narrows the gap but does not eliminate it. Oil and gas heating systems are used more often in the bottom two income quartiles (70 and 64%) than in the top two (60 and 62%). Of course, households with higher incomes also tend to live in their own homes. Homeowners can thus directly benefit from investing in their heating system.

In terms of **regional differences**, we can see a moderate south-north divide in the use of heat pumps. The northern German states have the lowest share at 5%. The survey also reveals that burning wood for heating is particularly common in the south. At 17%, it is much more widespread than in the rest of the country – especially compared with the north, where only 2% of households primarily use wood for heating. District heating, on the other hand, is more widespread than average in eastern Germany. A good one third of all households there (34%) use district heating. Regarding oil and gas heating systems, there are significant differences between the north and the west, where around three quarters of households currently heat with fossil fuels. In the south and the east, only around half of households rely on fossil fuels (Figure 5.3).

Figure 5.2: Source of heating by income

Primary energy source used for heating by income quartile

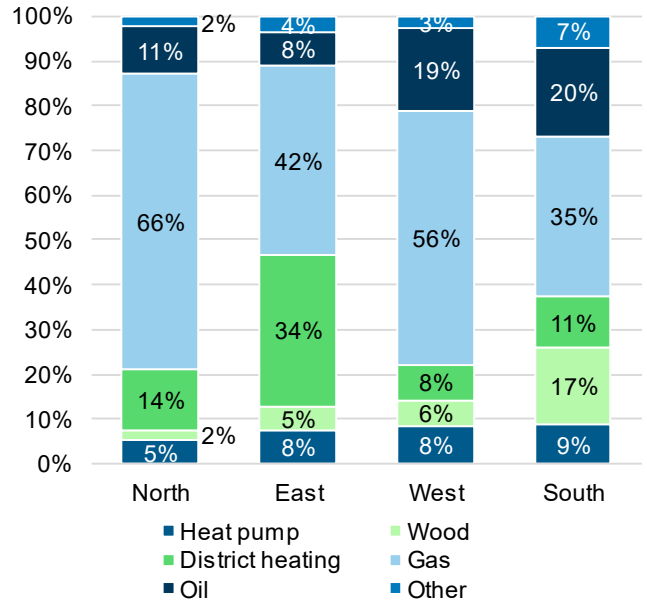


Source: KfW Energy Transition Barometer 2025

Exploring heterogeneity in terms of **settlement structure**, the survey reveals differences in the use of heat pumps. This technology is much more widespread in rural communities and small towns than in larger cities. Wood is most often used for heating in the countryside. In cities, district heating is the predominant source. Thus, fossil fuels are less common in rural communities (59%) and large cities (61%). Households in small and medium-sized cities are less likely to use wood or district heating. Higher shares of oil and gas heating systems (66 and 70%) are used here (Figure 5.4).

Figure 5.3: Type of heating system by region

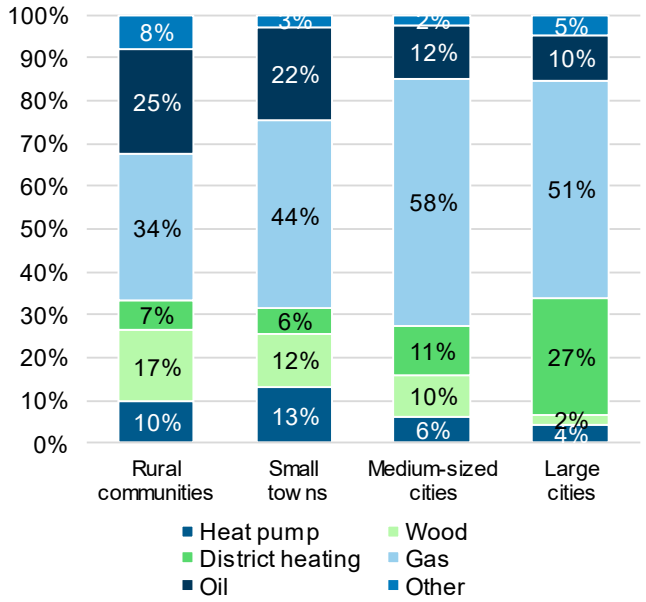
Primary energy source used for heating by region of place of residence



Source: KfW Energy Transition Barometer 2025

Figure 5.4: Type of heating by settlement structure

Primary energy source used for heating by settlement structure

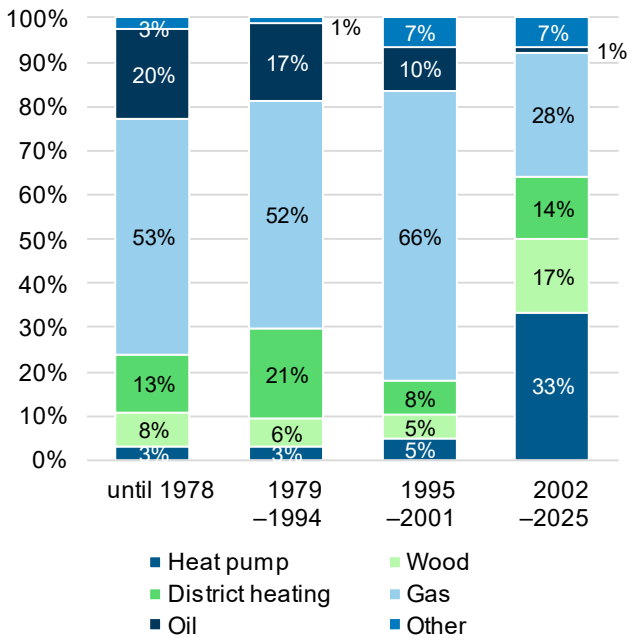


Source: KfW Energy Transition Barometer 2025

Due to the building codes that are in effect, the **year of construction of the dwelling** is key for heating (Figure 5.5). The Heat Insulation Ordinance of 1995 (*Wärmeschutzverordnung – WSVO*) was an important regulation that set strict minimum standards for the insulation of new buildings. The German Energy Saving Ordinance (*Energieeinsparverordnung – EnEV*) replaced it and again required a reduction of heat losses through the building shell.

Figure 5.5: Type of heating system by year of construction

Primary energy source used for heating by year of construction



Source: KfW Energy Transition Barometer 2025

The bulk of heat pumps is installed in buildings constructed after 2001. In these buildings, they have a share of 33%. In buildings completed prior to that year, their share is between 3 and 5%. More than 70% of these buildings have fossil-fuel based heating systems.

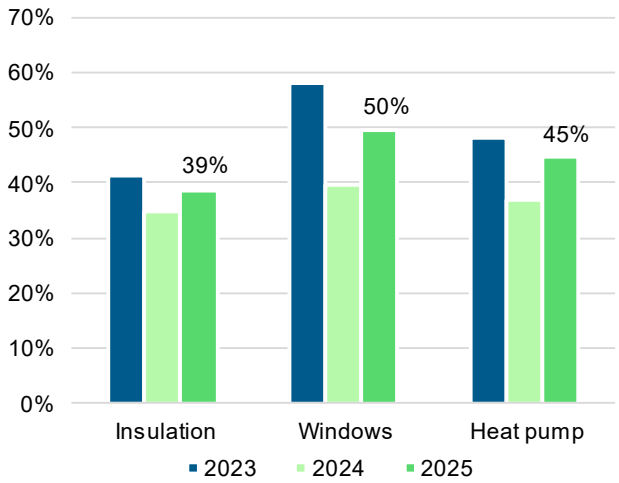
Given the improved thermal insulation standards, there is great potential for heat pumps particularly in buildings constructed between 1995 and 2001 (compared with even older buildings). Further, a good three quarters of buildings from between 1995 and 2001 have fossil-fuel based heating systems. In addition, replacement investments are due particularly often in these buildings anyway. Some 45% of all heating systems in buildings completed between 1995 and 2001 are more than 20 years old (compared with 33% on average across all households).

5.2 Households have become more open to modernising their homes

For adoption in future, it is important whether households without a heat pump would, in principle, be willing to install one. After falling moderately last year, that willingness has increased again. This applies to the heat pump itself, to insulation measures and to an upgrade of windows (Figure 5.6).

Figure 5.6: Conceivable measures

Proportion of homeowners who are not using the relevant technology but can imagine installing it in the future



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

The willingness of users of fossil-fuel based heating systems to switch to a heat pump is also important. Here again, an increase has been observed. One in two households with a gas heating system can now imagine a conversion (50 vis-à-vis 43% last year). In households with an oil-fired heating system, the rate is a notable 46% (compared with 38% last year).

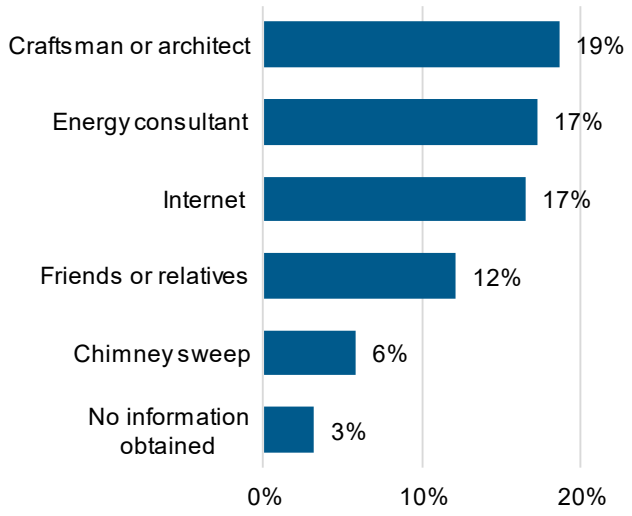
5.3 Awareness of the energy condition of the building is important for modernisation

Obtaining information about the energy condition of the dwelling also plays an important role in the implementation of modernisation measures. One in every two households has already acquired information (48%). Installers, who provided information to 22% of all households, are the most important source. They are followed by energy advisers and the Internet (14% each), friends and relatives (13%) and chimney sweeps (10%).

If we look at the uptake of heat pumps in relation to information obtained, we see a positive link that varies with the source of information (Figure 5.7). Households that have not yet obtained information on the energy condition of their home are less likely than average to use heat pumps (3%). Among households that have obtained information from installers, energy advisers or the Internet, on the other hand, the uptake of heat pumps is higher, ranging from 17 to 19%. Advice from friends is linked to a 12% rate of uptake. When information is provided by chimney sweeps, the uptake of a heat pump is lower than average across all households (six compared with eight per cent). In consequence, chimney sweeps do not seem to have a stimulating effect. However, chimney sweeps could be an important factor as they regularly visit the heat-producing appliances. In this connection, conflicts of interest may occur because heat pumps do not require chimneys.

Figure 5.7: Uptake of heat pumps is higher depending on the source of information

Proportion of households with a heat pump depending on information obtained on the energy condition of the home. Multiple sources of information could be given.



Source: KfW Energy Transition Barometer 2025

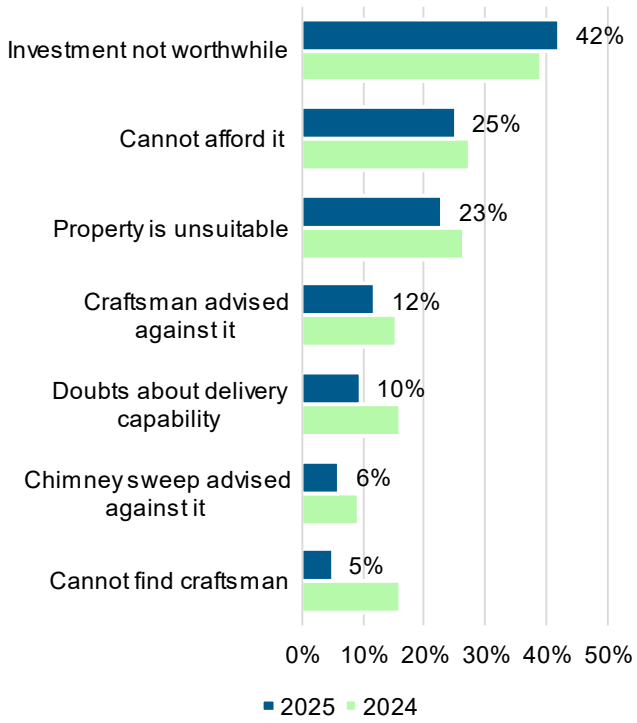
5.4 Barriers to heat pump adoption

The analysis turns to factors that prevent people from installing a heat pump although they can generally imagine using one. Figure 5.8 illustrates a slight shift in perception compared with last year. The perception that the investment was not worthwhile is the only reason that has gained importance to now 42% (39% last year). All other barriers have reduced moderately. For example, the dwelling is now somewhat less likely to be seen as unsuitable (23 vs. 26% last year) and installers and chimney sweeps are both less likely to advise against a heat pump than last year. Negative advice is now down to 12 and 6%.

Now, the focus is even more on cost-effectiveness than before. The expected carbon price increases under the EU-ETS2 could lead to a faster uptake of heat pumps in future. At the same time, the strong concerns about cost-effectiveness show that the information about rising carbon prices has not reached all households. Strengthening energy advice could create transparency and improve households heating decisions in the long term.

Figure 5.8: Most households are concerned about cost-effectiveness

Frequency of mentions by households not using a heat pump yet but considering installing one. Multiple responses were possible.



Source: KfW Energy Transition Barometer 2024 and 2025

6. Uptake of electric vehicles by households

The uptake of electric cars has increased. Nearly one in ten households in Germany (9%) now have an electric vehicle. The total number of new registrations in Germany shows that the trend has been pointing upward since the first quarter of 2024. The share of all-electric vehicles and plug-in hybrids currently sits at just under 30%.

Electric vehicles are gaining traction worldwide, too, thus becoming more important for German exports. Germany now generates the highest export surplus with all-electric vehicles.

High-income households are most likely to use electric vehicles but the uptake also grew sharply in medium-income households. Other typical features of households with electric cars are middle age, homeownership and higher levels of education.

Living in a detached or semi-detached house is an important factor in owning an electric car because these houses are likely to have a rooftop photovoltaic system. Households with a photovoltaic system can charge electric cars with cheap self-generated electricity. Accordingly, 46% of households with an electric car cited the option of charging with green electricity as a motive for purchasing it.

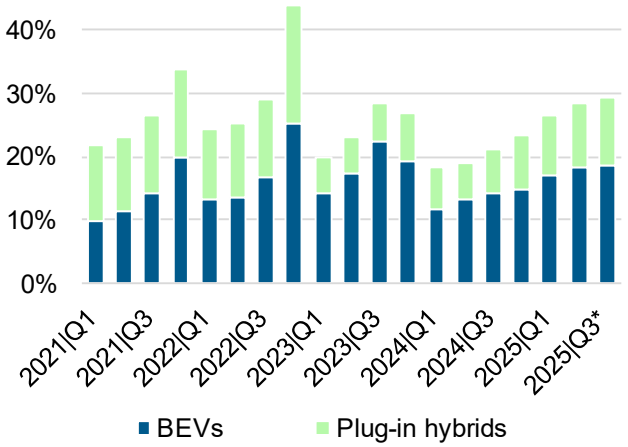
Approaches that can support the market ramp-up of electric vehicles include removing information deficits, providing incentives for time-optimised charging and creating simplified charging options for households in multi-family dwellings.

6.1 Electric cars are gaining market share

Around the world, the share of electric cars in new registrations has recently increased sharply. In 2024, battery-electric vehicles (BEVs) and plug-in hybrids accounted for 22% of all new registrations, more than twice as much as three years ago. This growth was mainly driven by **China**. In 2024, more than 40% of new registrations were BEVs or plug-in hybrids in China. By way of comparison: That share was a good 20% in the EU and around 10% in the US.[16] In Germany the trend is now pointing upwards again. Electric vehicles (EVs) climbed from their low in the first quarter of 2024, when they made up 18% of new registrations, to around 29% in the third quarter of 2025 (see Figure 6.1).

Figure 6.1: Detailed trend in Germany

Proportion of battery-electric vehicles and plug-in hybrids in new registrations; * preliminary figures based on July/August.



Source: Federal Motor Transport Authority, own calculations.

The electrification of commercial vehicles is also gaining traction. According to the German Federal Motor Transport Authority, in the first half of 2024 only 12% of newly registered buses were all-electric. In the first half of 2025 that share was already 22%. The share of newly registered all-electric trucks was 5% in the first half of 2024 but rose to 7% in the first half of 2025.[17]

6.2 Exports of electric vehicles are increasing

Electric vehicles are becoming increasingly important for Germany as a business location as well. Exports of all-electric vehicles from Germany have substantially increased. Figure 6.2 illustrates the monthly figures since January 2020 in the form of dots. The continuous lines represent a local approximation for the average and the green areas show the corresponding 95% confidence interval. Whereas the share of exports of cars that run on petrol and diesel has decreased since 2020, the share of BEVs has grown almost ten-fold from around 3% in the first half of 2020 to now 27% (Figure 6.2).

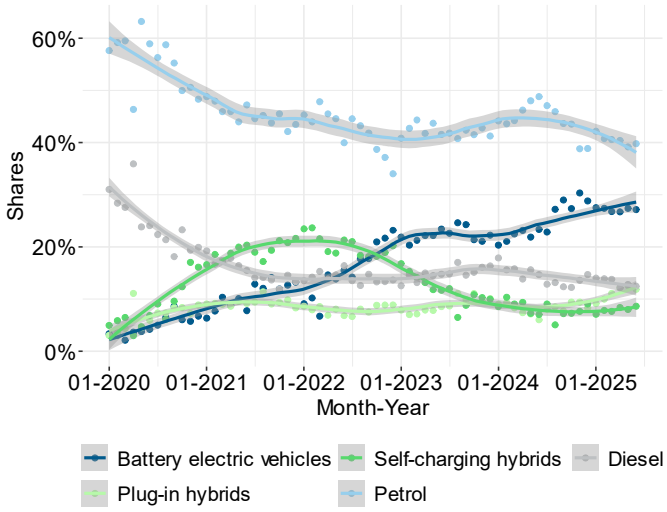
Absolute figures confirm this trend. In the first half of 2020, approx. 7,000 BEVs worth EUR 0.3 billion were exported on average each month. In the first half of 2025, that average monthly figure had risen to approx. 83,000 BEVs worth EUR 3.4 billion.

[16] Cf. Rode, Römer and Salzgeber (2025): Growing demand for electric cars – German exports are also picking up, Focus on Economics No. 511, KfW Research.

[17] Own calculation based on the Federal Motor Transport Authority (2025): Produkte der Statistik – Neuzulassungen Alternative Antriebe, (*Products of statistics – new registrations of alternative drives* – our title translation, in German), last visited on 5 September 2025.

Figure 6.2: Exports of new cars from Germany by type of engine

Monthly values shown as dots; continuous lines show smoothed averages with 95% confidence intervals in grey



Source: Foreign trade statistics of the Federal Statistical Office

Germany has recorded the largest export surplus for BEVs since the end of 2023, as measured by the export-to-import value ratio. That ratio averaged around 5 for BEVs in the first quarter of 2025. It was roughly twice as much as for internal combustion engine (ICE) cars, where the average ratio is a good 2.5. These figures demonstrate the competitiveness of BEVs manufactured in Germany – even if some of the value added is generated abroad.[18]

6.3 Typical adopters are high-income, middle-aged, home-owning and highly educated

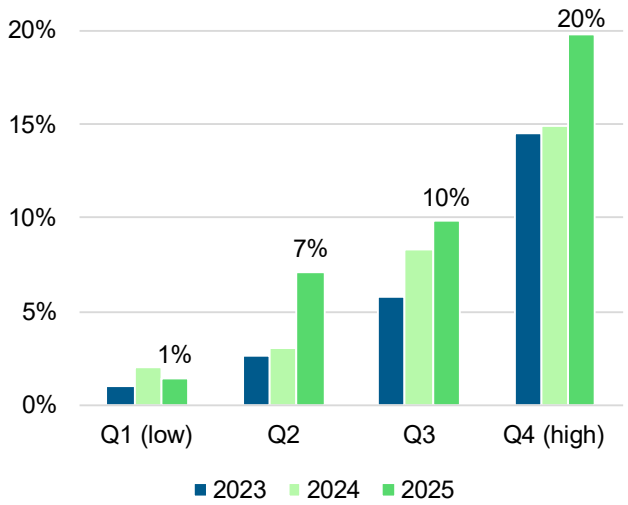
Providing a profile of households with electric vehicles facilitates a better understanding of the uptake. Electric vehicles are defined as those that have a battery-electric engine as well as hybrid vehicles. Privately used company vehicles are also counted.

The uptake of an electric vehicle is associated with **net household income** (Figure 6.3). The rate of uptake of electric vehicles is 20% in the highest income quartile and only 1% in the lowest. This income effect was also present in past years. It is consistent with mentions of price as the most common argument against the purchase of an electric car. In 2025, 59% of respondents to the KfW Energy Transition Barometer provided this answer.

However, the price gap between electric and ICE vehicles narrows. The fact that this has not led to a decline in the number of mentions of price as a barrier could be due to the phase-out of purchase subsidies for electric cars and the underdeveloped used electric car market.

Figure 6.3: Adoption of electric vehicles by income

Proportion of households with electric vehicles by quartiles of net household income



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

More small battery-electric car models in the lower price segment have been announced for the coming years. Once these are also available as used cars, electric vehicles could become affordable for households with low-income.

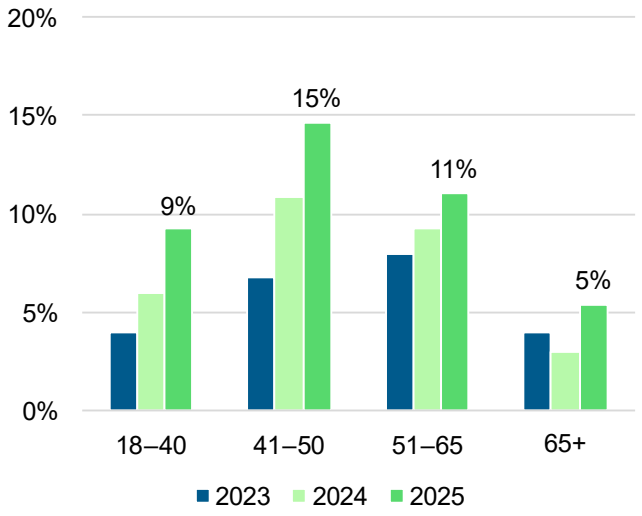
For interpretation purposes, it is important to note that many low-income households do not own a car. These households have no need to invest in electric vehicles. Nearly one in every two households in the bottom income quartile (47%) does not own a car, while in the second income quartile it is still 20%. In the two top quartiles, a much lower number of households does not own a car, with 12 and 11%. The share of households using only ICE cars is the smallest in the low-income quartile, with 51%.

Another interesting breakdown is the adoption of electric vehicles **by age**. The group of 41 to 50-year-olds has the highest adoption rate. Those aged 65 and older are particularly sceptical, although the number of adopters in this age group has increased on the past year (Figure 6.4). One reason for this could be that older users tend to be more reluctant to embrace new technologies and may shy away from investing in a wall box charger.

[18] The battery makes up around one third of the value added of an all-electric vehicle. In 2022, 71% of lithium-ion batteries were manufactured in China (EU: 11%), cf. McKinsey (2023): A road map for Europe's automotive industry, last visited on 4 September 2025.

Figure 6.4: Electric vehicle adoption by age group

Proportion of households with an electric vehicle by age of respondent



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

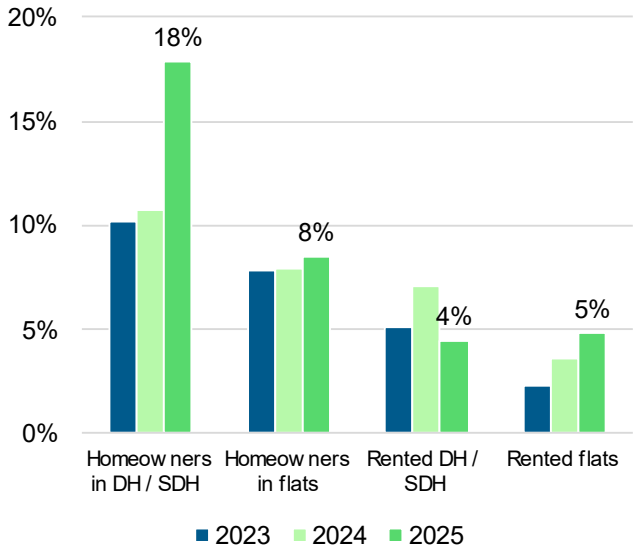
The **housing tenure type** can be relevant for the uptake of an electric car. Electric vehicles are most adopted by homeowners of detached and semi-detached houses. For those, the adoption rate currently sits at 18% (Figure 6.5). Installing a wall box charger tends to be uncomplicated and requires little or no coordination for this group of adopters. For tenants, this is more complicated as it requires coordination with the landlord or community of property owners. Being able to charge an electric car at home provides cost benefits over the use of public charging points. Having the option of combining an electric car with a rooftop solar system provides further cost savings. Current studies corroborate this link: The diffusion of household photovoltaic systems drives the adoption of BEVs both in Germany[19] and in the US[20].

Simplified rules for installing charging points could also facilitate the use of EVs by households in multi-family dwellings. Here in particular, residents could also benefit from smart meters in combination with dynamic electricity rates. This combination enables households to charge EVs at low cost, even without self-generated electricity, by charging at low-demand times.

Recent studies show that EV users are sensitive to pricing signals and indeed plan their charging times accordingly.[21] Timing EV charging can potentially reduce the overall cost of the electricity system since the growing demand for electricity can be matched with the increasingly weather-dependent supply.

Figure 6.5: Electric vehicles by housing tenure type

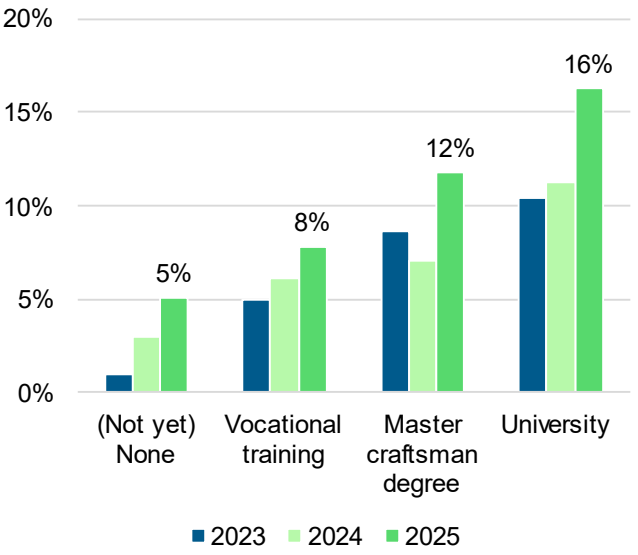
Proportion of households with electric vehicles by tenure type. DH are detached houses, SDH are semi-detached houses.



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

Figure 6.6: Adoption of electric vehicles by education level

Proportion of households by respondent's education level



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

[19]Rode (2024): Solar Photovoltaics and Battery Electric Vehicles, Working Paper, available at SSRN.

[20] Lyu (2023): Are Electric Cars and Solar Panels Complements? *Journal of the Association of Environmental and Resource Economists* 10.4, p. 1019–1057; freely available as SSRN Working Paper.

[21] According to Bailey et al. (2025, Show me the Money! A Field Experiment on Electric Vehicle Charge Timing, *American Economic Journal: Economic Policy* 17(2):259–84; freely available as NBER Working Paper 31630), a 23% discount on the electricity rate cuts EV charging at times of high demand in half in Calgary, Canada. Bernard et al. (2025, The Impact of Dynamic Prices on Electric Vehicle Public Charging Demand: Evidence from a Nationwide Natural Field Experiment, Working Paper) confirm that EV users respond to pricing signals at public charging points in the United Kingdom.

The **education level** also correlates with the diffusion of electric cars in Germany (Figure 6.6): 16% of university graduates drive an electric car, compared with only 5% of respondents who do not (yet) have formal qualifications. Interestingly, however, this difference has decreased over time. In 2023, the adoption rate among university graduates was 10 times higher, while today it is only around three times higher than among individuals with no formal qualifications.

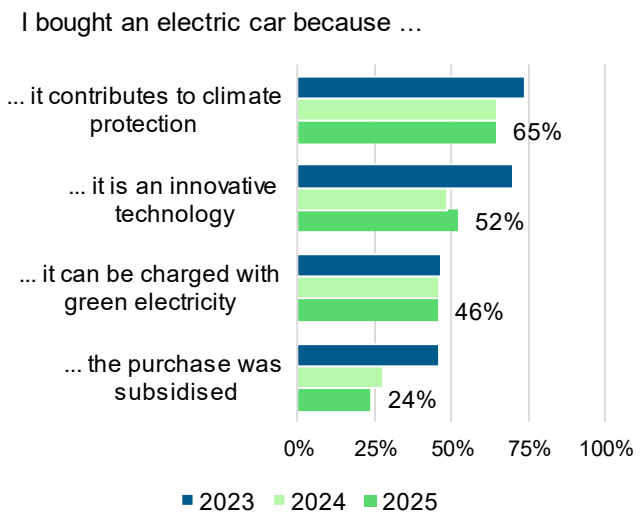
6.4 Barriers to and reasons for a purchase

Overall, households' reluctance to adopt electric vehicles has decreased moderately in Germany. EVs could therefore continue growing in importance. In the KfW Energy Transition Barometer, the purchase price was mentioned most often as a barrier to adoption, followed by concerns around charging infrastructure and range.[22] Reservations around the safety of EVs were the only concern that increased slightly of late. Given the continuing advances in safety, this is surprising and could be driven by broad media coverage of electric vehicles on fire. Multiple studies confirm that EVs do not have a higher risk of catching fire.[23] Breakdown statistics of the German motoring club ADAC also confirm that EVs are more reliable than ICE cars in general.[24] In consequence, to work on reducing existing information deficits could be a promising approach to spur BEV diffusion.

Figure 6.7 reveals reasons for purchasing an electric car. Two in three households with an electric car report a desire to contribute to action on climate change as a reason for their purchase, while 46% stated the option of charging it with green electricity. This is also in line with the cost benefits described above. After all, most home PV systems are installed on detached or semi-detached houses, which allows their inhabitants to benefit from the cost advantages of self-generated electricity.

Figure 6.7: Reasons for purchasing an electric car

Proportion of households with an electric car that agree with



Source: KfW Energy Transition Barometer 2023, 2024 and 2025

[22] Cf. Rode, Römer and Salzgeber (2025): Growing demand for electric cars – German exports are also picking up, Focus on Economics No. 511, KfW Research.

[23] Cf. Wietschel et al. (2025): Batterien für Elektroautos: Faktencheck und Handlungsbedarf – Ein Update (*Batteries for electric cars: fact check and need for action – an update* – our title translation, in German) (Policy Brief 01/2025), Fraunhofer ISI, last visited on 8 September 2025.

[24] Cf. ADAC (2025): ADAC-Pannenstatistik 2025: Sind Elektroautos zuverlässiger? (*ADAC Breakdown Statistics 2025: Are electric vehicles more reliable?* – our title translation, in German), last visited on 8 September 2025.

7. Conclusion and outlook

Human-caused climate change is becoming increasingly evident. For example, heat waves have become much more common and intense.[25] Germany recently felt the impact, e.g. in the form of an extended drought[26] and with the collapse of the Ice Chapel at the foot of the Watzmann mountain in the Bavarian Alps.[27]

Still, climate change appears to be less in focus because Germany as a business location is coming under increasing pressure. This shift makes technical solutions for decarbonisation even more important because they also provide benefits beyond climate action. The positive trend is unbroken. Renewables and batteries have become much cheaper in the past decades.[28] Their advantages over fossil fuels are obvious, as reduced or zero emissions have a positive effect not just for the climate but also for the health of the population. They also reduce the need to import expensive fossil fuels.

The KfW Energy Transition Barometer shows that the share of households using green technologies has risen to one third. Thus, around 0.8 million households have newly adopted a technology that supports the energy transition. Almost half of the households in Germany are using green electricity. The energy transition is seen as important or very important by 83% of households. That is a moderate increase on last year. People's willingness to contribute with actions of their own, on the other hand, has dipped slightly to now 59%. Overall, 16% of households have a photovoltaic system, 9% an electric car and 8% a heat pump.

The findings reflect the most recent market trends: The market shares of heat pumps[29] and electric vehicles[30] are growing. Even though heat pumps cost more to buy than gas heaters, for example, they provide long-term cost benefits because they are cheaper to run. Electric vehicles, too, provide cost advantages for frequent drivers, particularly in combination with self-generated green electricity from a rooftop photovoltaic system or flexible charging at off-peak times with low electricity rates.

For the energy transition to succeed, it is important not to undermine the cost-effectiveness of green technologies by increasing fossil fuel subsidies – for example, by financing the gas levy from the Climate and Transformation Fund. After all, the cost-effectiveness of green technologies crucially depends on the electricity price in relation to the costs of using fossil alternatives.[31] In this respect, the new European emissions trading system EU-ETS2 can make a decisive contribution to the transformation. The literature already predicts prices between EUR 51 and 391 per tonne of greenhouse gas under the EU-ETS2 for the year 2030.[32] This would set substantial financial incentives for decarbonisation by electrification. Having a reliable price trajectory is another important factor for this incentive effect.

Raising the price of fossil fuels also poses a financial burden. Low-income households are not only more likely to use oil or gas for heating but they also face a heavier burden from the additional costs. The KfW Energy Transition Barometer shows that the transition is only proceeding slowly, particularly among low-income households because they often lack the funds for the necessary investments. The findings also indicate that the energy transition project could lose support if the financial burden continues to increase. Information and targeted investment support measures can help prevent this development. This is of great importance given that many heating systems will reach the end of their service life in the coming years and replacement investments will be necessary.

[25] Cf. Quilcaille et al. (2025): Systematic attribution of heatwaves to the emissions of carbon majors, Nature, 645, 192–398.

[26] Cf. Rode (2025): Auch wenn es heute regnet – es herrscht Dürre in Deutschland (Even if it's raining today – Germany is experiencing a drought – in German), Auf einen Blick, KfW Research

[27] Cf. BR24 (2025): Betretung lebensgefährlich: Eiskapelle am Watzmann eingestürzt (*Extreme danger: Ice Chapel on Watzmann has collapsed* – our title translation, in German), last visited on 11 September 2025.

[28] Cf. Roser (2020): Why did renewables become so cheap so fast? Our World in Data, initially published on 1 December 2020 (partly updated in April 2025), last visited on 11 September 2025.

[29] Cf. BDH (2025): Heizungsmarkt weiter im Rückwärtsgang: Heizungsindustrie fordert schnell klare Rahmenbedingungen (*Heating market back in reverse gear: heating industry demands quick, clear framework* – our title translation, in German), Federal Association of the German Heating Industry, press release, 26 July 2025.

[30] Cf. Figure 6.1.

[31] Cf. Letz, Rode and Römer (2025): Heat pumps are gaining ground in Europe – electricity prices matter, Focus on Economics No. 487, KfW Research.

[32] Cf. Günther et al. (2025): Carbon prices on the rise? Shedding light on the emerging second EU Emissions Trading System (EU ETS 2), Climate Policy, 1–12.

The KfW Energy Transition Barometer

The KfW Energy Transition Barometer has been conducted annually since 2018. It is based on a representative random sample of approximately 4,000 households in Germany. Responses from each household are taken from one household member of full age who takes decisions on household energy supply and consumption. The survey aims at finding out to what extent green technologies are being used in the different households. The survey also covers any planned uptake to estimate green technology areas with greatest expected growth. Taken together, the study provides an overview of current sentiment and households' participation in the energy transition in Germany.

The field phase of the Energy Transition Barometer 2025 lasted around 15 field weeks from 11 December 2024 to 31 March 2025. This survey wave covers a total of 5,119 households in Germany.

The methodology for the KfW Energy Transition Barometer 2025 was modified. It now also surveys balcony power plants, allowing for a more precise assessment of photovoltaic system adoption.

The related volume of tables and methods (KfW-Energiewendebarometer 2025 – Methoden- und Tabellenband, only available in German) contains further information on the structure of the current survey of the KfW Energy Transition Barometer: www.kfw.de/energiewendebarometer

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