

# 2024 Residential Energy Consumption Survey

## Housing Characteristics Highlights



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U.S. Energy Information Administration  
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# What is the *Residential Energy Consumption Survey* (RECS)?

RECS is the only nationally representative source for estimates of energy-related characteristics, consumption, and expenditures for housing units in the United States.

The U.S. Energy Information Administration (EIA) collected data in two parts:

- We collected housing characteristics through web and mail forms from nearly 17,000 households statistically selected to represent the 132.5 million housing units in the United States that were occupied as a primary residence in 2024.
- We collected energy usage data from suppliers of electricity, natural gas, fuel oil, and propane for those same housing units.

EIA has conducted the RECS periodically since 1978.

- The 2024 RECS is the 16<sup>th</sup> iteration.

# Key takeaways from EIA's 2024 RECS preliminary housing characteristics results

The RECS covers a wide variety of topics about household energy demand, including structural characteristics of homes, appliances, electronics, and lighting, which directly affects overall energy consumption. Here are some highlights about housing characteristics from the 2024 Household Survey of RECS:

- Single-family home characteristics varied by region, with basements more common in the Northeast and Midwest, attics more common in the South, and attached garages more common in the West. These spaces can increase energy consumption because of lighting, heating, and cooling.
- Excluding apartments, about 10% of households reported having swimming pools in 2024, 36% of which were heated. Pool pumps and heaters increase overall household energy consumption. Five states—Florida, California, Texas, New York, and Arizona—accounted for over 50% of all homes with swimming pools in 2024.
- More households used refrigerators with bottom freezers in 2024 than in previous years.
- Most homes had dishwashers in 2024 (74%), but some households had dishwashers and did not use them (14%).
- Homes built between 2020 and 2024 were more likely to have separate cooktops than homes built before 1950.
- Streaming device usage increased by 10 percentage points between 2020 and 2024 while usage of televisions, cable boxes, DVRs, and DVD players decreased.
- Smart speaker ownership increased by four percentage points between 2020 and 2024, and more households used smart speakers to control lighting than other functions.
- In 2024, 63% of U.S. households used LED bulbs for all or most of their indoor lighting.

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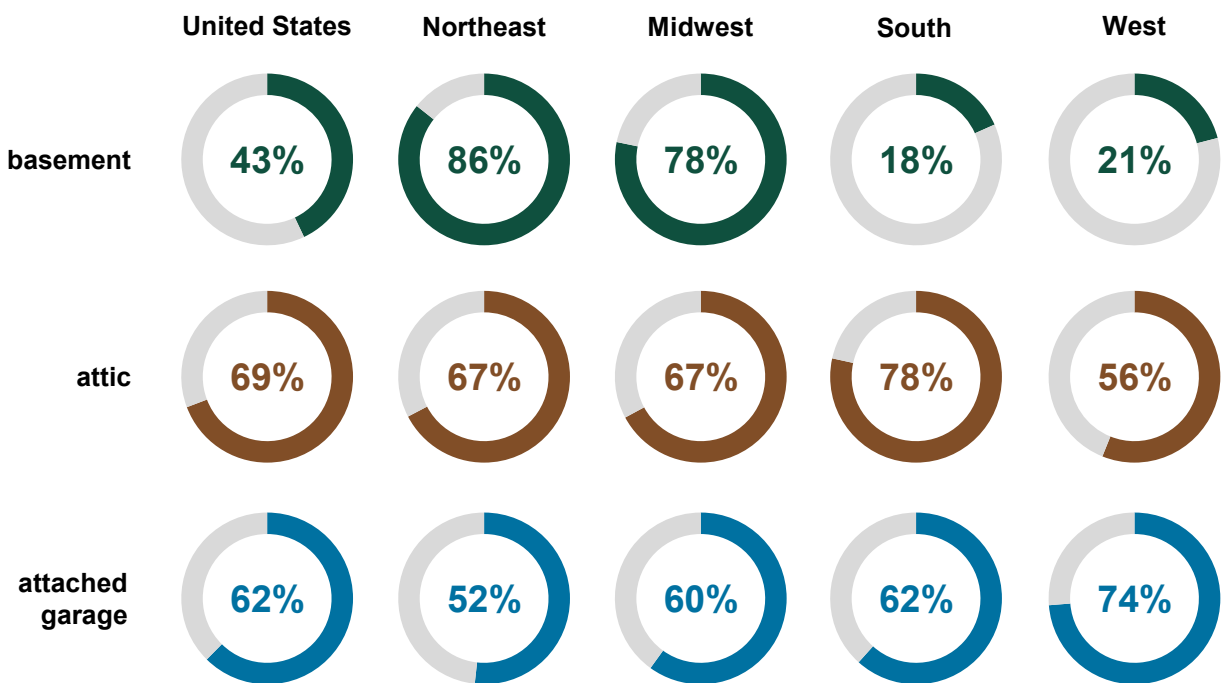
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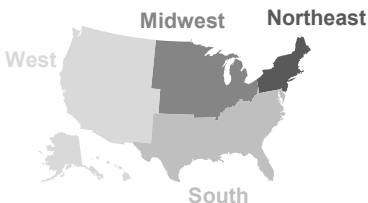
# **Structural and geographic characteristics**

# The presence of a basement, attic, or attached garage varied by region

**Basements, attics, and attached garages by region (2024)**  
percentage of single-family homes



- Because these are additional spaces that may use lighting, heating, or cooling, the presence of a basement, attic, or attached garage in a home can increase the home's energy consumption.
- Basements in single-family homes were more common in the Northeast (86%) and Midwest (78%).
- More than two-thirds (69%) of single-family homes had attics, which were most common in the South (78%).
- The West had the largest percentage of single-family homes with attached garages (74%).



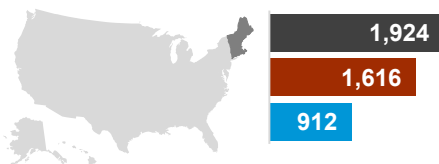
Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey  
Note: Single-family homes do not include mobile homes or apartments.

# The heated and cooled areas of homes varied by census division

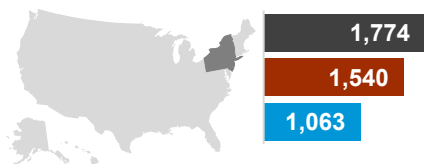
Average total, heated, and cooled square footage by census division (2024)  
average square feet (sf)



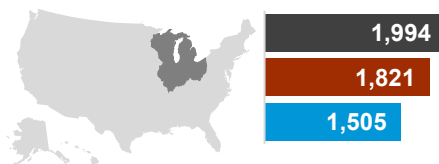
New England



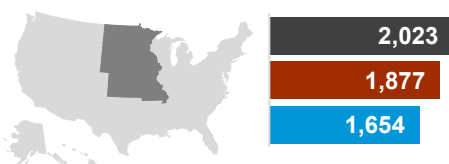
Middle Atlantic



East North Central



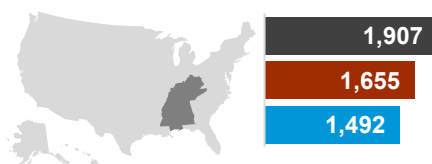
West North Central



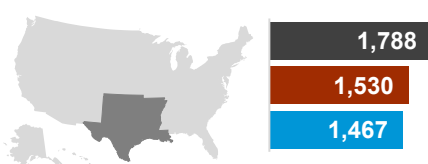
South Atlantic



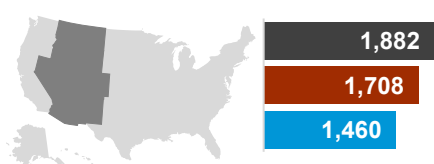
East South Central



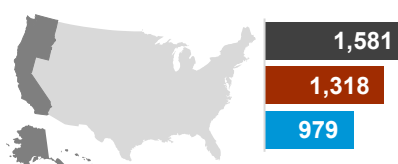
West South Central



Mountain



Pacific



average total sf  
average heated sf  
average cooled sf

- The portions of a home that are heated or cooled vary across census divisions. In New England, the estimated average heated square footage was 1,616 square feet (sf) and the estimated average cooled square footage was 912 sf.
- In the warmer census divisions—South Atlantic, East South Central, and West South Central—the differences between the average heated and average cooled square footage were smaller.

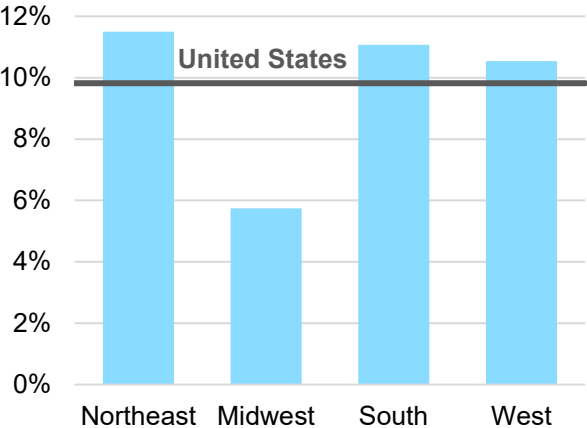
Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey

# One in ten homes had swimming pools

## Swimming pools and hot tubs by region (2024)

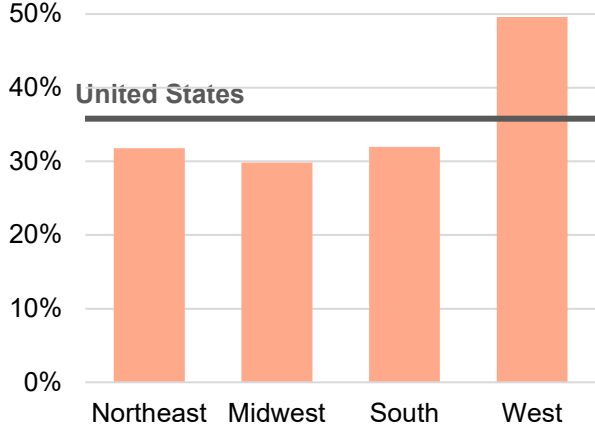
### Swimming pools

percentage of single-family and mobile homes



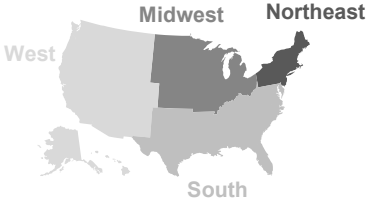
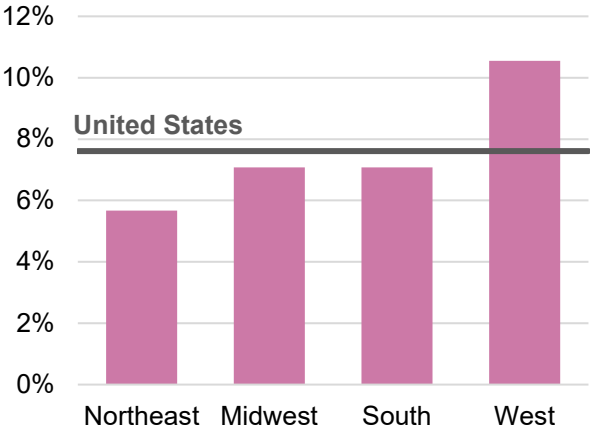
### Heated swimming pools

percentage of swimming pools



### Hot tubs

percentage of homes

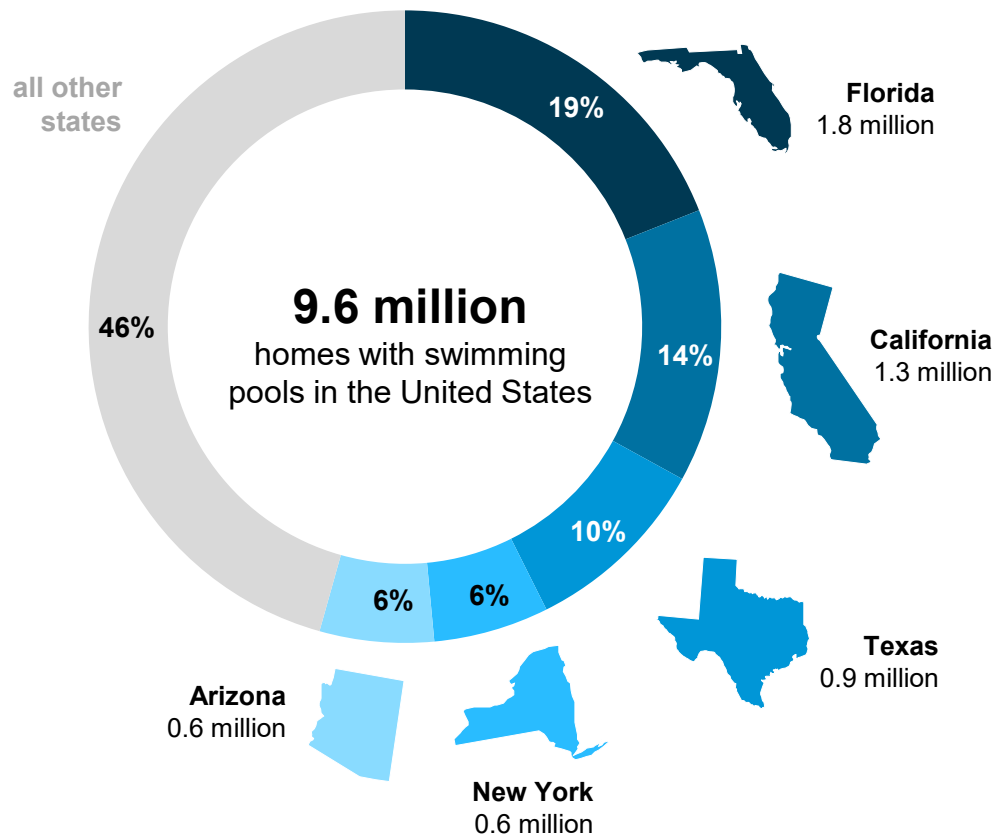


Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey  
Note: Swimming pool estimates exclude apartments. Hot tub estimates include all housing types.

- Not including homes in apartments, about 10% of households reported having swimming pools in 2024.
- Of those homes with swimming pools, 36% nationwide had heated ones, with the share ranging from 30% in the Midwest to 50% in the West.
- Hot tubs were reported by 8% of households. The percentage of homes with hot tubs ranged from about 6% in the Northeast to 11% in the West.

# Five states accounted for over 50% of homes with swimming pools

**Homes with swimming pools by state (2024)**  
percentage of homes with swimming pools



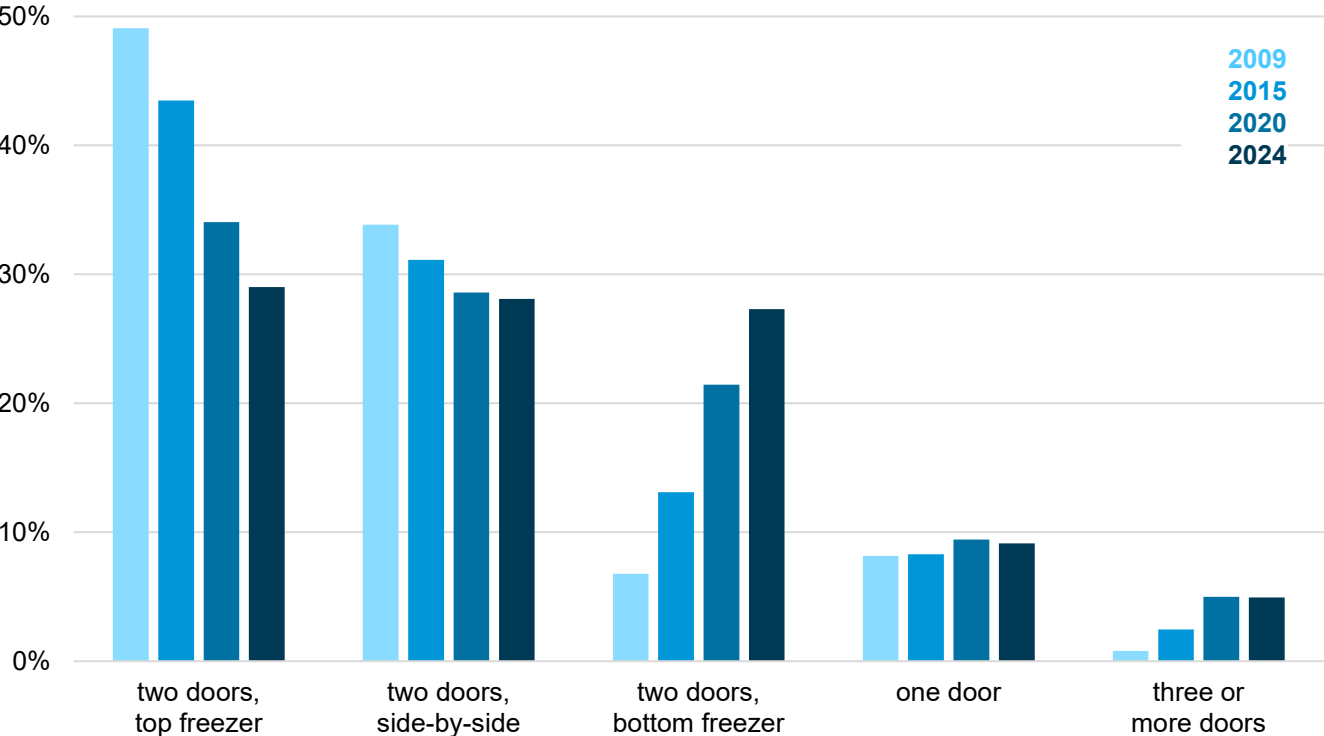
- Florida, California, Texas, New York, and Arizona accounted for 54% of all homes with swimming pools in 2024.
- Florida accounted for 19% of all homes with swimming pools. Within Florida, 28% of homes had a swimming pool.
- Although New York is in a cooler climate, it accounted for 6% of homes with swimming pools in the United States. Within New York state, 15% of homes had a swimming pool.

Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey  
Note: Swimming pool estimates exclude apartments.

# Appliances

# In 2024 more households used primary refrigerators with bottom freezers than in previous years

Primary refrigerator configuration (2009–2024)  
percentage of homes

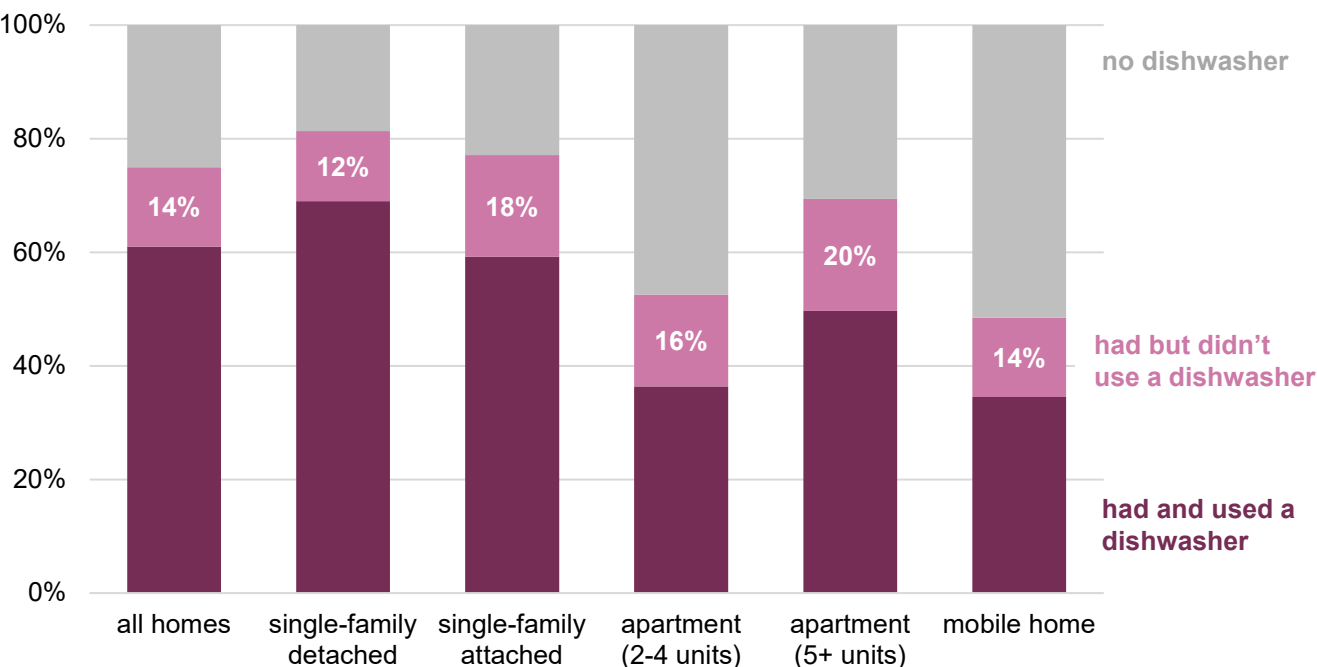


Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey

- Refrigerator energy efficiency varies by configuration—two-door, top-freezer refrigerators often consume less energy than other configurations.
- The share of primary refrigerators with bottom freezers rose from 7% in 2009 to 27% in 2024 while the share of primary refrigerators with top freezers fell from 49% to 29%.
- Between 2020 and 2024 alone, the share of primary refrigerators with bottom freezers rose from 21% to 27%.
- Primary refrigerators with three or more doors or with one door were the least common over the last decade.

# Most homes had dishwashers, but not all households used them

**Presence of dishwashers by housing type (2024)**  
percentage of homes

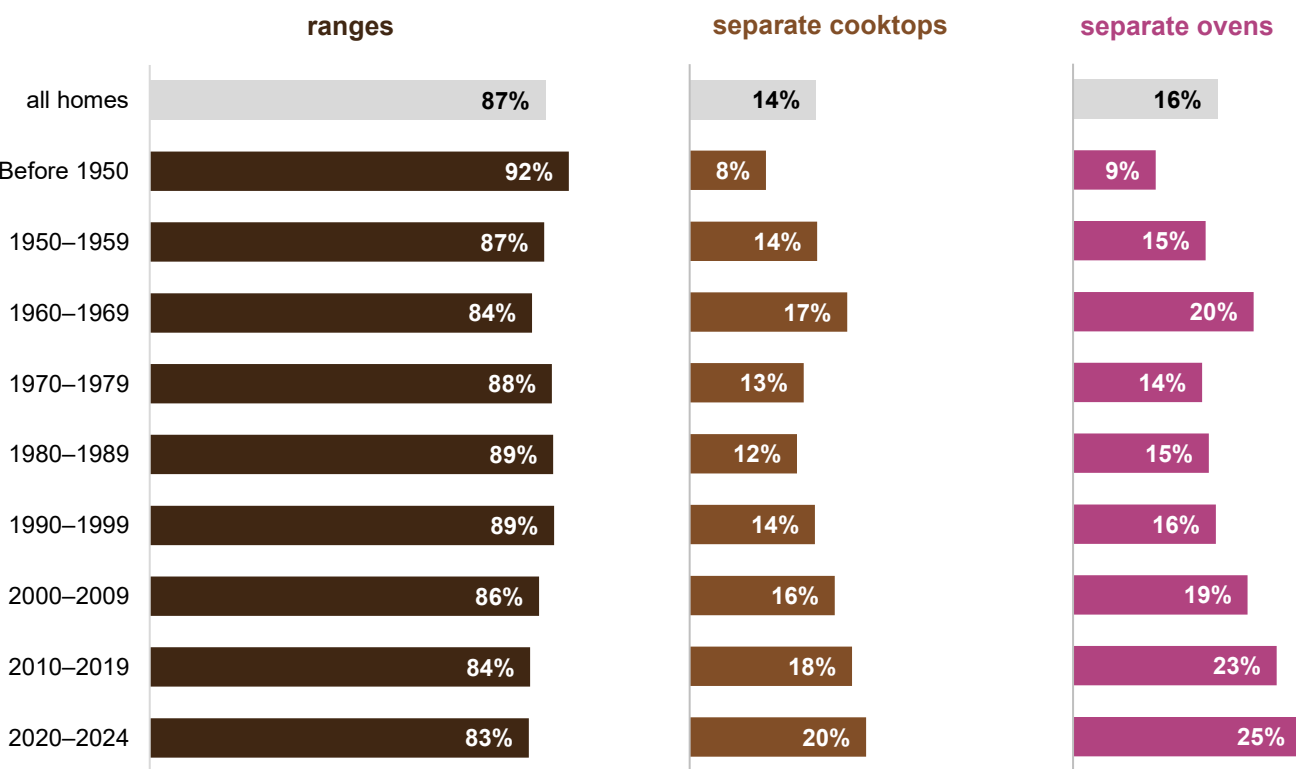


- About three-quarters (74%) of U.S. homes had a dishwasher.
- Not every household used their dishwasher—about 14% of U.S. homes had a dishwasher that was not used.
  - The highest proportion of dishwasher non-use was among apartments in buildings with five or more units (20%).

Data source: U.S. Energy Information Administration, 2024 *Residential Energy Consumption Survey*

# Newer U.S. homes were more likely to have separate cooktops than older homes

**Presence of major cooking appliances in U.S. homes, by year of construction (2024)**   
percentage of homes with appliance

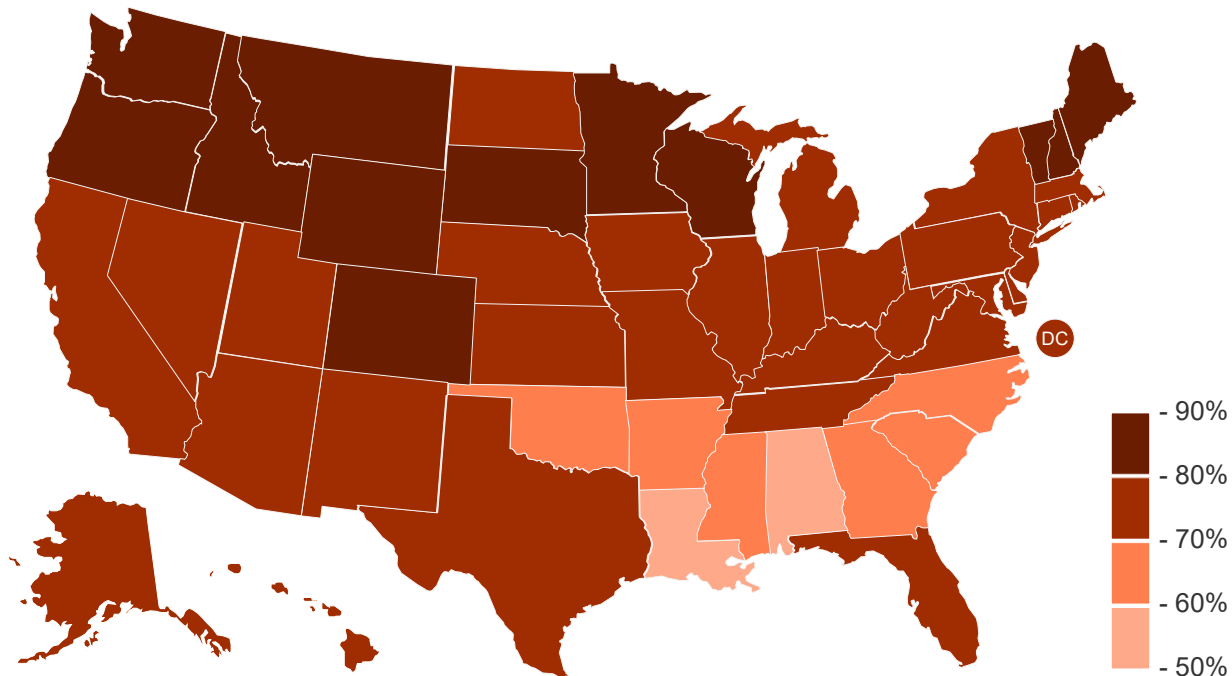


- Most U.S. homes (87%) had a range (cooktop attached to an oven), 14% had a separate cooktop, and 16% had a separate oven.
- Older homes were less likely to have separate cooktops than newer homes: 8% of homes built before 1950 versus 20% of homes built in 2020 or later.

Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey

# Daily hot food preparation varied by state

**Households that cooked hot food daily, by state (2024)**  
percentage of households within each state

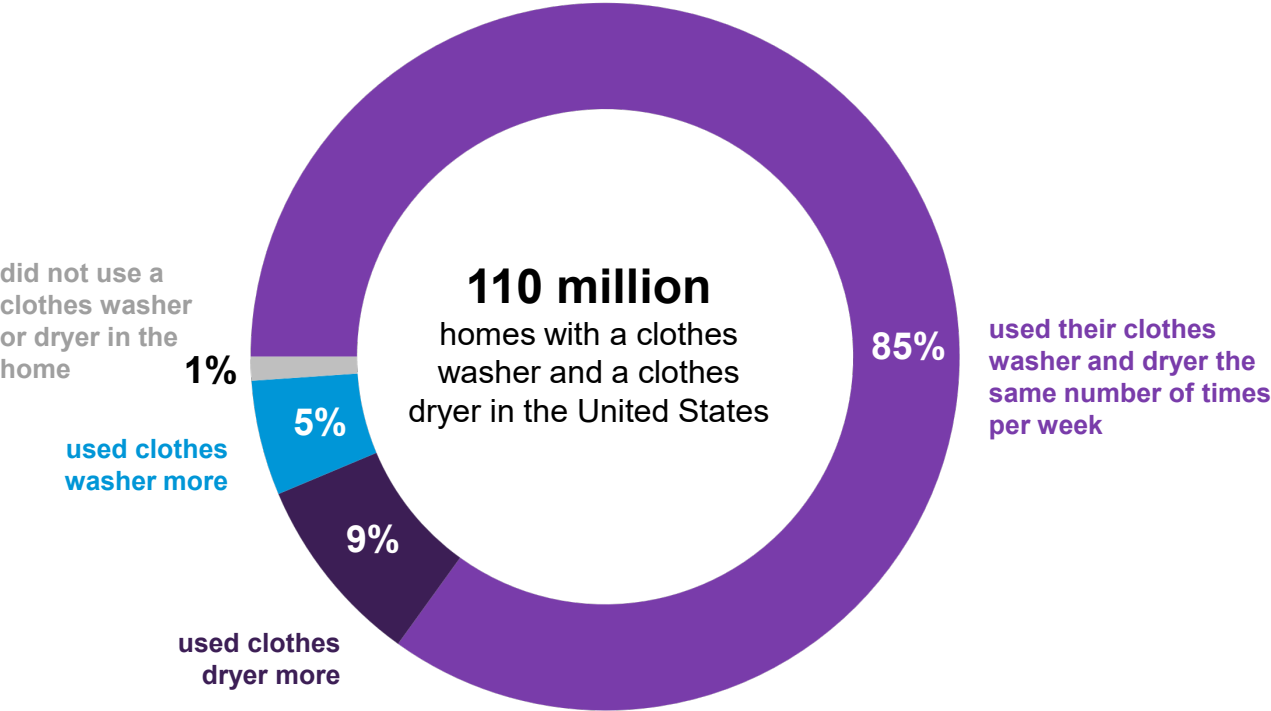


Data source: U.S. Energy Information Administration, *2024 Residential Energy Consumption Survey*

- In addition to questions about cooking equipment, the RECS asks how often households use their cooking appliances and how often households cook hot meals.
  - Over one-half of households in all states cooked hot food daily in 2024.
- States varied in the percentage of households preparing hot food daily, ranging from about 60% in states like Louisiana (59%) and Alabama (58%), to 84% in states like Wisconsin, Oregon, and Montana.

# Some households used clothes washers and dryers at different frequencies per week

**Clothes washer and clothes dryer usage (2024)**  
percentage of homes with a clothes washer and clothes dryer



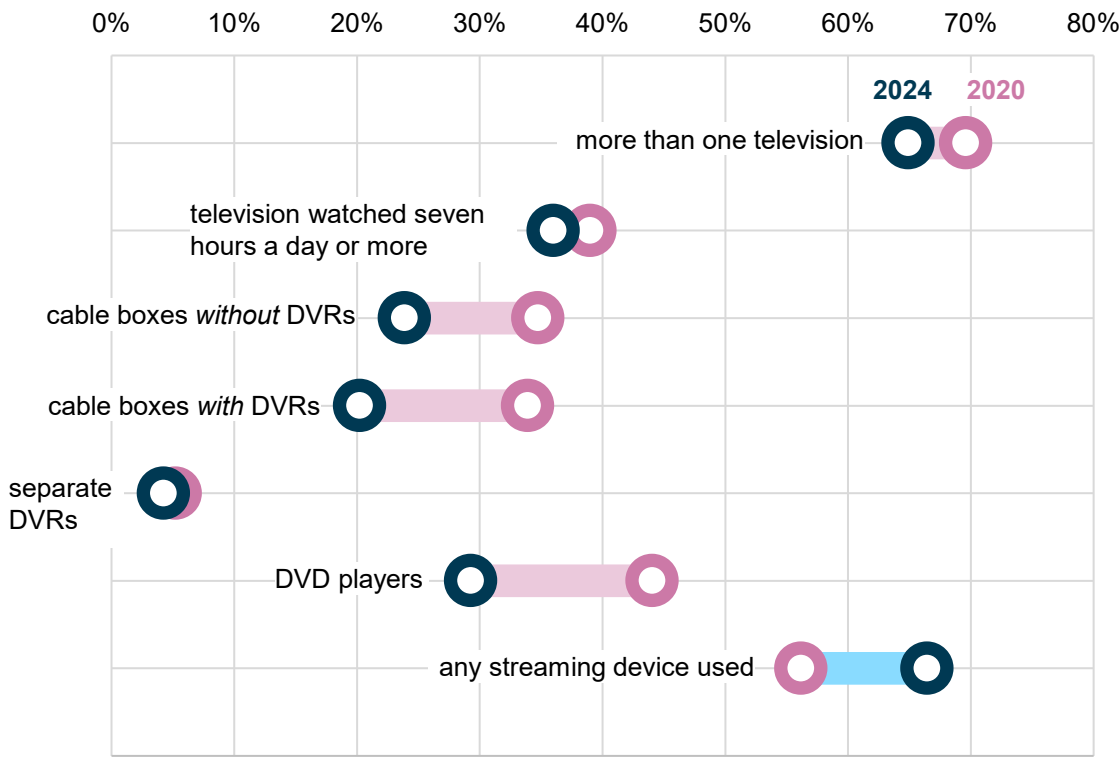
- Around 83% of U.S. households had both a clothes washer and a clothes dryer.
- About 85% of households with clothes washers and dryers used their clothes dryer and washer the same number of times per week.
- Around 9% of households with clothes washers and dryers used a clothes dryer more than a clothes washer, and 5% used a clothes washer more than a clothes dryer.

Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey

**Electronics**

# Television and television peripheral usage declined

Television and television peripheral usage (2020–2024)  
percentage of households



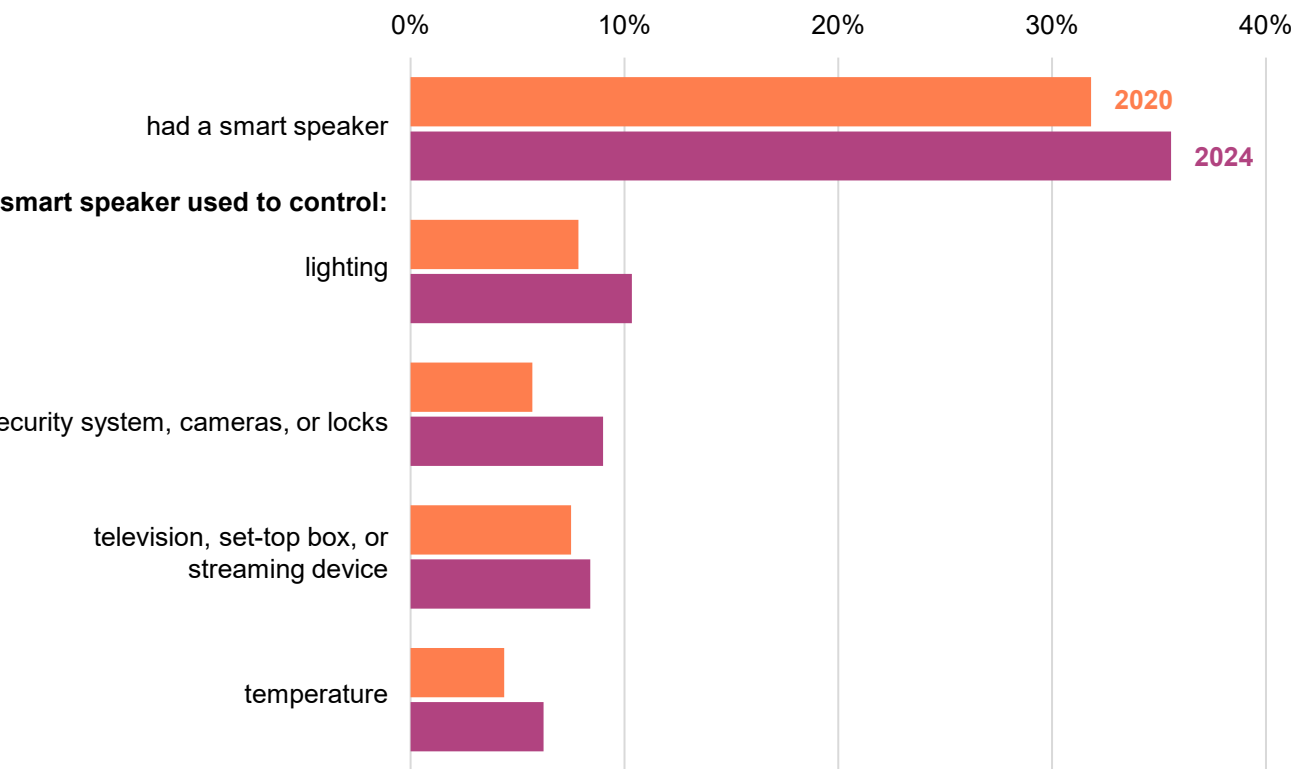
Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey

- From 2020 to 2024, the percentage of households using more than one television decreased from 70% to 65%.
- The percentage of households using their primary television seven hours or more per day declined from 39% to 36%.
- There were also declines in usage of most television peripherals—cable boxes, DVRs, and DVD players—but the use of streaming devices increased from 56% to 66%.

# Households increased their usage of smart speakers

## Smart speaker ownership and usage (2020–2024)

percentage of households



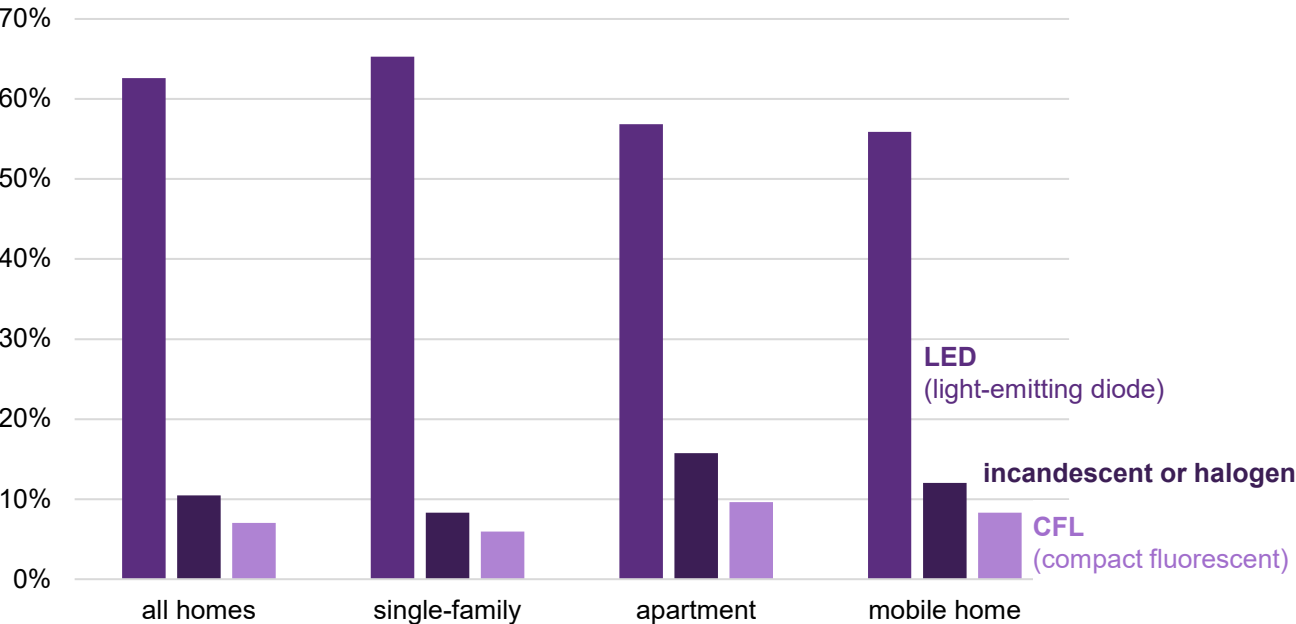
- From 2020 to 2024, the percentage of households with a smart speaker increased from 32% to 36%.
- Smart speakers may be used to control different functions in homes. More households controlled lighting, security systems, and temperature with smart speakers in 2024 than in 2020.

Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey

**Lighting**

# More homes used LEDs over other bulb types for indoor lighting

Homes with most or all indoor bulbs of a single type by housing type (2024)  
percentage of households

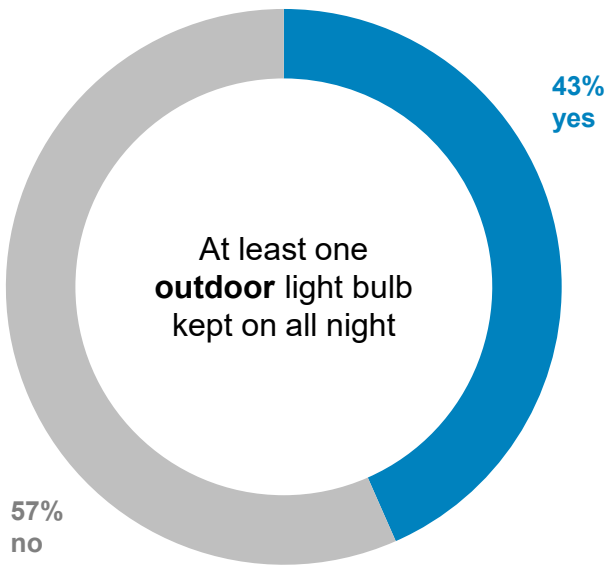
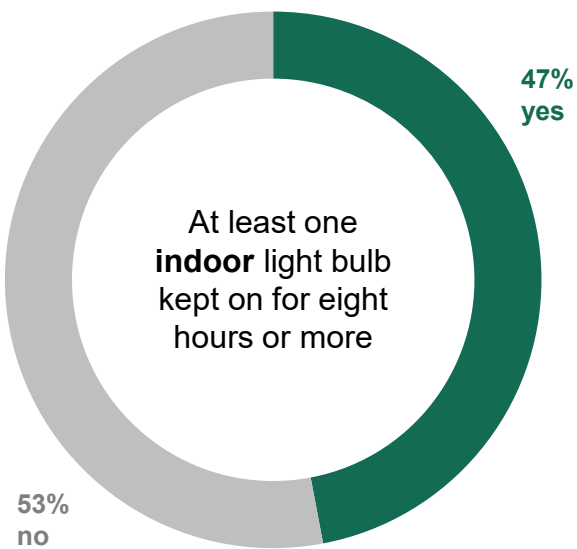


Data source: U.S. Energy Information Administration, 2024 *Residential Energy Consumption Survey*

- About 63% of U.S. households used most or all light-emitting diode (LED) bulbs, which use less energy than most other forms of lighting.
- Households in 65% of single-family homes, 57% of apartments, and 56% of mobile homes used LEDs for all or most of their indoor lighting.
- In contrast, 10% of households used incandescent or halogen bulbs and 7% used compact fluorescent (CFL) bulbs for all or most of their indoor lighting.

# Almost half of all households kept at least one light bulb on for an extended period

**Indoor and outdoor lighting usage (2024)**  
percentage of households



- Almost half (47%) of all U.S. households kept at least one indoor bulb on for eight hours or more.
  - These households kept an average of four bulbs on indoors for eight hours or more.
- About 43% of all U.S. households kept at least one outdoor bulb on all night.
  - These households kept an average of three bulbs on outdoors.

Data source: U.S. Energy Information Administration, 2024 Residential Energy Consumption Survey

# **References and additional information**

## References

All figures are sourced from Form EIA-457, *2024 Residential Energy Consumption Survey*.

Please direct questions about the RECS to [eiainfoconsumptionefficiency@eia.gov](mailto:eiainfoconsumptionefficiency@eia.gov)

# RECS release schedule

## March 2027

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- Final household characteristics tables<sup>1</sup>
- Consumption and expenditures tables

## May 2027

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- Technical documentation for consumption and expenditures estimates
- Final public-use microdata file

<sup>1</sup>We will be releasing space heating, water heating, and air-conditioning estimates with the consumption and expenditures tables rather than the household characteristics tables. We are incorporating billing data into the estimates to improve their accuracy.

## For more information

U.S. Energy Information Administration homepage | [www.eia.gov](http://www.eia.gov)

Residential Energy Consumption Survey | [www.eia.gov/recs](http://www.eia.gov/recs)

Consumption and Efficiency | [www.eia.gov/consumption](http://www.eia.gov/consumption)

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