Average Energy Consumption per Household [2024 U.S

By Hannah Bastawrose (Seeger) • November 17, 2022

Fact Checked

By Thad Warren • April 5, 2024

In this article:

If you search online for average energy use, it's hard to get a straight answer. Well, there's a reason for that. There are so many variables that go into energy consumption for a home it is difficult to come up with a number that is accurate.

The EIA aggregates data for the entire U.S. In 2021, the average annual electricity consumption for a U.S. home was 10,632 kilowatt-hours (kWh). Or about 886 kWh per month.

But the range of electricity usage varies dramatically. Louisiana had the highest annual electricity consumption at 14,302 kWh per home. While Hawaii had the lowest at 6,369 kWh per home.

We want to set the record straight and help you figure out where your energy usage stands against others. However, we aren't just going to throw an average number at you. We also want to give you the tools to make smarter decisions.

We will outline the major factors that play into determining energy consumption. This will give you the baseline for what to consider when analyzing your own building. Then we will take a look at averages across the United States.

What Uses the Most Electricity in Your Home?

The EIA also conducts surveys and analysis to uncover the biggest energy consumers in the average American home. As part of the same energy survey here is what they found:

- **Air Conditioning:** 19% of total energy usage
- **Space Heating:** 12% of total energy usage
- **Water Heating:** 12% of total energy usage

No surprises here. Air conditioning and heating use the most energy. So, if you want to reduce your energy usage consider efficient AC systems (or adjusting your thermostat), and efficient space and water heating systems.

Energy Consumption Factors

First, what are the major factors that determine building energy consumption?

Location - Where you are in the world determines a few things: sun location, climate, and geography. Climate includes average temperatures and precipitation over time, wind speeds, and extreme weather events.

Weather - More specifically than climate, what are the day-to-day temperatures and humidity levels.

Building Construction - The types of building materials that were used heavily determine heat conduction through the exterior, sun radiation, air infiltration, airflow, and natural lighting.

Size - Total square feet and the number of floors matter. A 10,000-square-foot building will most likely be using more energy than a 1,000-square-foot building. However, will a 1,000sf single-story building use more or less energy than a two-story building?

Occupants & Building Purpose - People generate heat and moisture, even while just sitting still. How many people and what they are doing matters to determine how much an HVAC needs to condition a space.

An office building where people are spread out and sitting at a desk is significantly different than a theater space where people are shoulder to shoulder jumping up and down singing along to their favorite show.

On the other hand, maybe there aren't that many people but instead a lot of heat-generating equipment in a manufacturing plant.

Schedule - When people are in the building or when equipment is running is important. If people are in the building in the day versus the night will also determine the amount of heat in the space. This is also important when with looking at utility bills which may have different charge rates for different times of the day.

Equipment - What is using energy in the building? What's the efficiency? How old is it? How has it been maintained? And when is it operating?

This item may not be so surprising. What can be surprising is the range in energy consumption between system types.

Energy Generation & Storage Systems - Last but not least, if there is any on-site energy generation and storage. Whether it is renewable, like solar, or a diesel generator it will determine how much energy is coming from the grid and its cost.

The Biggest Factor: Climate

Location and weather are first on this list for a reason. The climate you are in plays the biggest role on your energy bills because the system that uses the most energy is typically the Heating, Ventilation, and Air Conditioning (HVAC) system. In most buildings, the HVAC system can be about 40% of the total bill.

This chart shows data of the average energy bill consumption amount per household, per state.

Average Energy Consumption by State

State	Number of Customers	Average Monthly Consumption (kWh)	Average Price (cents/kWh)
Alabama	2,308,226	1,140	13
Alaska	292,451	594	23
Arizona	2,953,823	1,048	13
Arkansas	1,436,246	1,098	11

State	Number of Customers	Average Monthly Consumption (kWh)	Average Price (cents/kWh)
California	13,883,994	542	23
Colorado	2,443,109	704	13
Connecticut	1,530,251	713	22
Delaware	453,758	950	13
District of Columbia	298,337	706	13
Florida	9,917,113	1,096	12
Georgia	4,560,653	1,072	13
Hawaii	443,535	531	33
Idaho	806,421	961	10
Illinois	5,361,717	728	13
Indiana	2,948,803	946	13
Iowa	1,417,424	861	13
Kansas	1,289,344	890	13

State	Number of Customers	Average Monthly Consumption (kWh)	Average Price (cents/kWh)
Kentucky	2,032,575	1,084	12
Louisiana	2,126,155	1,192	11
Maine	722,038	584	17
Maryland	2,395,954	973	13
Massachusetts	2,840,311	596	23
Michigan	4,458,038	670	18
Minnesota	2,496,406	776	14
Mississippi	1,321,576	1,171	12
Missouri	2,861,933	1,039	11
Montana	531,398	872	11
Nebraska	869,656	1,005	11
Nevada	1,249,392	959	11
New Hampshire	638,267	631	20

State	Number of Customers	Average Monthly Consumption (kWh)	Average Price (cents/kWh)
New Jersey	3,648,914	687	16
New Mexico	914,495	646	14
New York	7,256,212	599	19
North Carolina	4,774,592	1,063	11
North Dakota	391,340	1,041	11
Ohio	5,041,904	879	13
Oklahoma	1,818,813	1,088	11
Oregon	1,805,684	936	11
Pennsylvania	5,477,367	851	14
Rhode Island	446,320	585	22
South Carolina	2,426,703	1,078	13
South Dakota	412,657	1,019	12
Tennessee	3,016,642	1,183	11

State	Number of Customers	Average Monthly Consumption (kWh)	Average Price (cents/kWh)
Texas	11,815,251	1,094	12
Utah	1,176,949	775	10
Vermont	319,444	567	19
Virginia	3,551,532	1,094	12
Washington	3,220,813	984	10
West Virginia	863,647	1,066	12
Wisconsin	2,761,990	690	15
Wyoming	278,599	867	11

In order to make the data a bit more palatable, we sorted the data from largest to smallest and color-coded it. Red is the highest value and green is the lowest. Lastly, we took the colors and applied them to a map, see map #1.

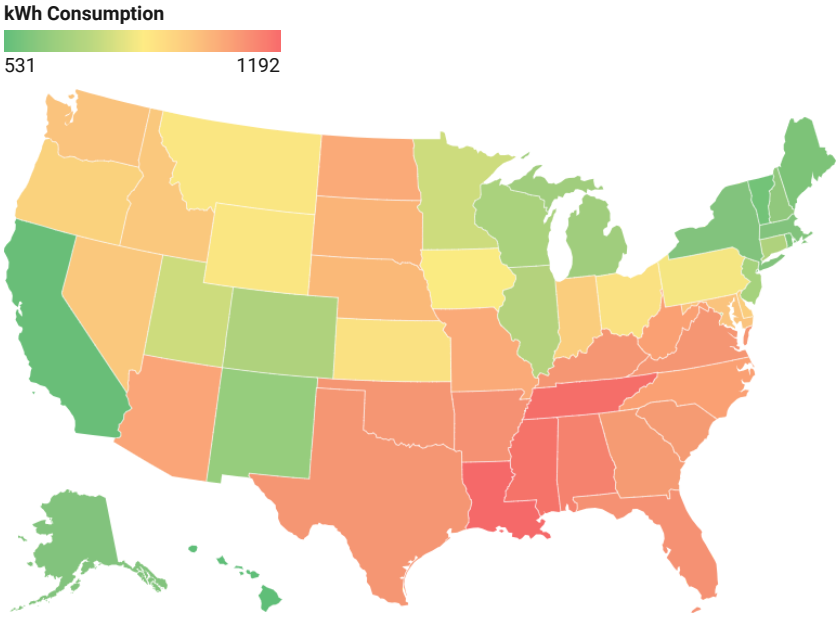
This is where things get interesting. By applying the heat map style color coding to the map you can instantly see trends across the country. The southeast has the highest bills by energy consumption and the northeast, and California has the lowest.

This trend is due to two main factors. First, the climate that the state is in. Second, where in the state the majority of the population lives.

By doing a broad comparison of maps #1 and #2, you can see a pretty clear overlap of the climates with the energy consumption amounts. Not only is the southeast hot, but it is humid as well. If you have ever felt the difference between summer in Southern California versus summer in the south, you'll know this to be true. Moist air holds more heat, making HVAC systems work harder to create a comfortable space.

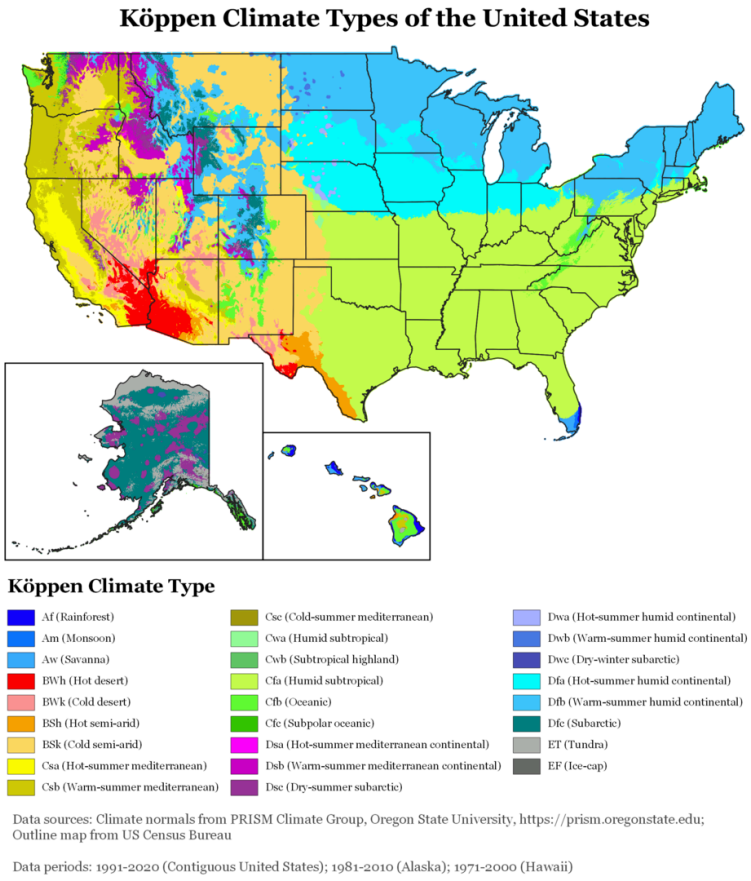
Map #1

Average Home Electricity Usage Per State



Map: EnergyBot • Source: EIA • Created with Datawrapper

Map #2



The second factor in determining the energy consumption color of each state is where the majority of the population lives in that state.

For example, California is very green but on the climate map, it contains a very red, desert landscape that is shared with Arizona. The two major cities are San Fransisco and Los Angeles.

Both cities are coastal and have mild temperatures year-round. Mild temps allow residents to open windows to let the outside air in for comfort, rather than turning on their AC unit. In California, a majority of the population density is focused in these two areas, making it greener in energy consumption.

As a comparison, Arizona, right next door, has more red energy consumption. Pheonix, Tuscon, and Mesa are the three largest cities by population in Arizona, all of which are built in the desert.

Energy Prices

Though Louisiana has the highest energy consumption, they aren't paying the most. Hawaii and Connecticut, two green energy consumption states, have the highest energy bills. This comes down to how much they are paying.

Energy prices across the country are dependent on four main factors:

- Energy Source Availability
- Power Plant Availability
- Fuel Cost
- Energy Demand

Hawaii, a collection of islands 2,500 miles away from the mainland, makes getting anything more difficult. Connecticut, on the other hand, is a bit of an outlier in this data. They are seeing a few other challenges unique to them including transit costs being at the end of the natural gas pipeline and a 10-year contract with the Millstone Power Station.

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