

Good, Better, Best: Cutting Carbon From Home Heating and Cooling

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This is the third in a series of five articles that help you find ways to reduce your carbon footprint by looking at the main carbon culprits in the average American's lifestyle.

If owning a big house in the suburbs is part of the American dream, a lot of people are living the dream. The average American single-family home built in 2018 was [2,551 square feet](#). Second, only to Australia, the U.S. has the largest houses in the world – you could fit [11.2 Chinese homes](#) in the average American house. That's got to be a good thing, right?

But it comes with a high environmental price tag, increasing [transportation](#) emissions through long commutes and encouraging the [accumulation of lots of stuff](#). And it takes a lot of energy to heat and cool big homes. Home heating and cooling comprises [17 percent of Americans' carbon footprint](#).

Carbon Footprints

Because carbon dioxide emissions are a leading cause of climate change, measuring the amount of carbon dioxide released by a particular activity is a useful shorthand for environmental impact. This measurement is called a [carbon footprint](#).

There are many [ways to calculate](#) your family's carbon footprint. [On average](#), each American generates 18.55 tons of carbon dioxide emissions each year. This is 3.5 times the global average of 5.3 tons. And for most Americans, home heating and cooling is the third-largest source of those emissions.

Climate Control Footprints

Your family's heating and cooling footprint could be much different from the average. A household in Idaho may not even have air conditioning. But they might run the heater up to 10 months of the year. Two such houses may have very different emissions depending on their heat source. A home in Arizona may spend hundreds of dollars per month on air conditioning most of the year.

Unless your only form of "climate control" is opening or shutting the windows, you can improve your heating and cooling footprint.

Good

A good place to start is by looking at your habits. Do you set your air conditioner to a lower temperature in summer than you set your heater in winter? Do you turn on the heater on the first chilly day or wait until it is actually too cold? Try dressing for the season and setting your thermostat as close to the outside temperature as is

comfortable. Setting the thermostat back [7-10 degrees Fahrenheit](#) while you are at work can reduce your heating or cooling load by up to 10 percent. Installing a [smart thermostat](#) can help you save energy, too.

Tap into [energy-efficiency programs](#) through your local utility. Keeping on top of [home maintenance](#) tasks like duct cleaning, servicing your furnace and air conditioner, and sealing windows will improve home efficiency. Even your choice of window treatments can make a difference in both [cold weather](#) and to combat the [heat island effect](#).

Better

[Sealing air leaks](#) will make your home perform better, saving [15 to 25 percent](#) of the heat furnaces generate in winter and blocking the same amount of unwanted heat gain in summer. For most homes, [insulating](#) floors, walls, and ceilings can cut this leakage by about a third. Doors and [windows](#) are popular upgrades – and at a combined one-fifth of leakage are not irrelevant. But ducts and fireplaces are still bigger culprits.

When upgrading your older furnace, choose a [highly efficient model](#) and consider the source of [your electricity](#) when you decide between gas or electric. If you live in a warm climate, fans use a fraction of the energy of an air conditioner. They also do not require chemical coolants, which are greenhouse gases. If you really need air conditioning, consider whether you can get by with a window unit, which uses a third as much energy as [central air conditioning](#). Whatever air conditioner you end up buying, choose the [most efficient](#) model.

Best

To really slash your home emissions, cut your square footage: Convert your house to a duplex or move into an [efficient multifamily](#) building or [tiny home](#).

Whatever your square footage, if you're building a home, use [passive design](#) and other green building strategies like [earth-sheltered](#) construction to achieve [net-zero](#) energy use. And if you choose to move to a milder climate to avoid the need for heating and air conditioning entirely, just make sure you plan a [low-waste move](#) and recycle those [moving boxes](#).

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