

The Tesla of HVAC—why heat pumps are the most efficient for your home

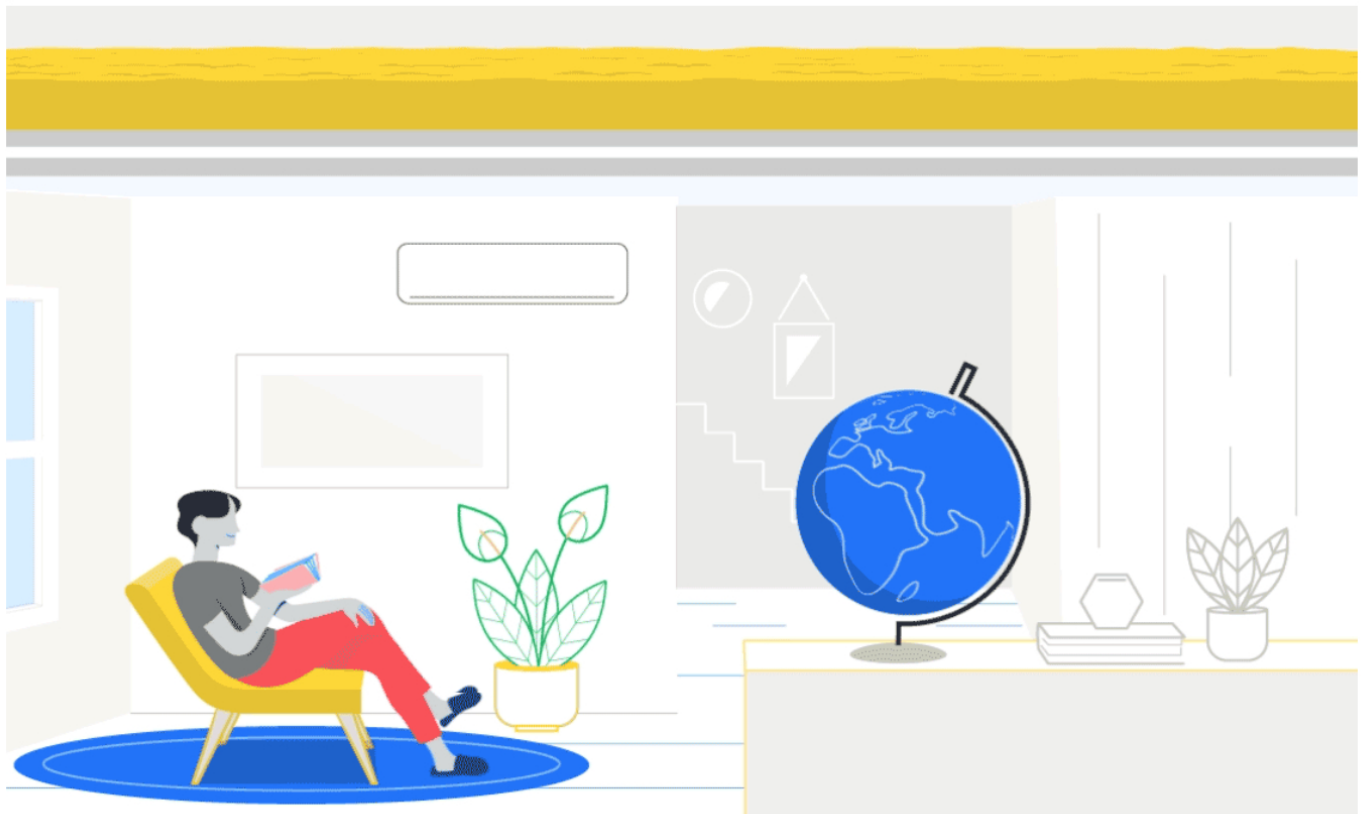
Heat pumps are truly the Tesla of climate control—the revolutionary HVAC idea that's changing everything.

air source heat pumps

best HVAC

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most energy efficient hvac



The way we've been heating and cooling our homes isn't working. It's bad for us, and it's bad for the planet. Air conditioners, for example, use about 6% of all electricity produced in the United States, and [home heating and cooling systems release about 441 million metric tons of carbon dioxide in the atmosphere—per year](#). Meanwhile, much of that energy is simply going to waste—many people aren't comfortable in their homes. Something has to change.

When Elon Musk started the electric car company Tesla, he said that the ["acceleration of sustainable energy was absolutely fundamental."](#) And he backed up the sentiment by creating an entirely new idea in sustainable transportation—a car that was not only great for the planet, but a best-in-class experience for the user, a true life upgrade. It was an idea that upended everything and transformed the automotive industry in the US.

Now, there's a technology that's poised to do the same for HVAC in the US. It's the **heat pump**, and though it has an unassuming name (we didn't choose it), you're going to hear a lot more about it in the coming years. And there's a good reason for that: Heat pumps are truly the Tesla of climate

There's a good reason for that. Heat pumps are truly the result of climate control—the revolutionary HVAC idea that's about to change everything.

Let's look at why this technology is so much better at converting energy into comfort.

Why is a heat pump so energy-efficient? First, let's look at how traditional HVAC works.

To understand what makes heat pumps so efficient, it's important to talk through how traditional heating and cooling systems work.

While there are many [different kinds of central heating systems on the market](#)—old and new—they all work by *producing* heat via some kind of fuel consumption. For example, furnaces use their power source (electricity, oil, or natural gas) to ignite burners, which heats up an internal component called a heat exchanger. Air is blown across to get warm, and then circulated throughout the home via ductwork.

Boilers operate differently—by using electricity, gas, or oil to heat water until it turns to steam—but the general principle remains: Use some kind of fuel to generate heat energy.

(Tap here to learn more [about various home heating system types](#).)

Meanwhile, [air conditioning systems](#) operate on a much more promising technology: They work by *transferring* the heat energy that's inside your home into a liquid called a refrigerant. Since the heat energy has been captured and is no longer in your air, your home gets cooler. Meanwhile, the liquid refrigerant cycles back into a unit called a compressor, where it releases the captured heat outside. Then the whole cycle begins again. Basically, air conditioners work by transferring the heat inside your home to the outside.

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Why is this AC technology more promising? Here's how heat pumps change the HVAC game.

Heat pumps are a completely different and much smarter way to heat *and* cool your home. Despite the name, heat pumps don't generate heat like a [traditional central heating system](#). Instead, heat pumps work by transferring heat energy.

If you think that process sounds familiar, you're right. It's the same process that air conditioners use. But—this is the brilliant part—heat pumps are designed to operate in both directions and in all seasons. In the winter, they'll take heat from outside your home to the inside of your home (yes, there's heat energy in cold air), and, in summertime, they'll reverse the process by moving inside heat energy to the outside.

That means that a heat pump system can completely replace your heating *and* your cooling systems. It'll also purify and dehumidify your air. It's an all-in-one system that, in most cases, can [completely replace your central AC](#), central heater, air purifier and your dehumidifier. And it can do all of those jobs for less energy expenditure overall. Let's look at why.

Why do heat pumps save energy?

Here's the main principle behind the brilliance of heat pumps: It takes less energy to move something than it does to produce something from scratch. You'll spend more effort building a chair from scratch than you'll spend if you just need to move a chair from one side of the room to another. Likewise, it takes less fuel to move heat than it does to produce heat.

Heat pumps don't use as much energy because they don't try to produce

heat—instead, they leverage the fact that nature always seeks equilibrium: Cold attracts heat and heat attracts cold. In the summertime, the cold liquid within your [air source heat pump](#) attracts the heat inside your home and moves it outside. Later, in the winter, the heat pump uses super-cold liquid to attract heat from outside your home—then transports it inside.

Both of these transportation processes take far less energy than trying to produce heat from scratch—which is why heat pumps are 3 times better than traditional HVAC at using energy efficiently.

And keep in mind that heat pumps run on electricity—an energy source that can be produced 100% pollution-free. That's going to be a big deal as the country transitions to better ways of generating electricity.

Other ways electric heat pumps are energy-efficient—variable compressors

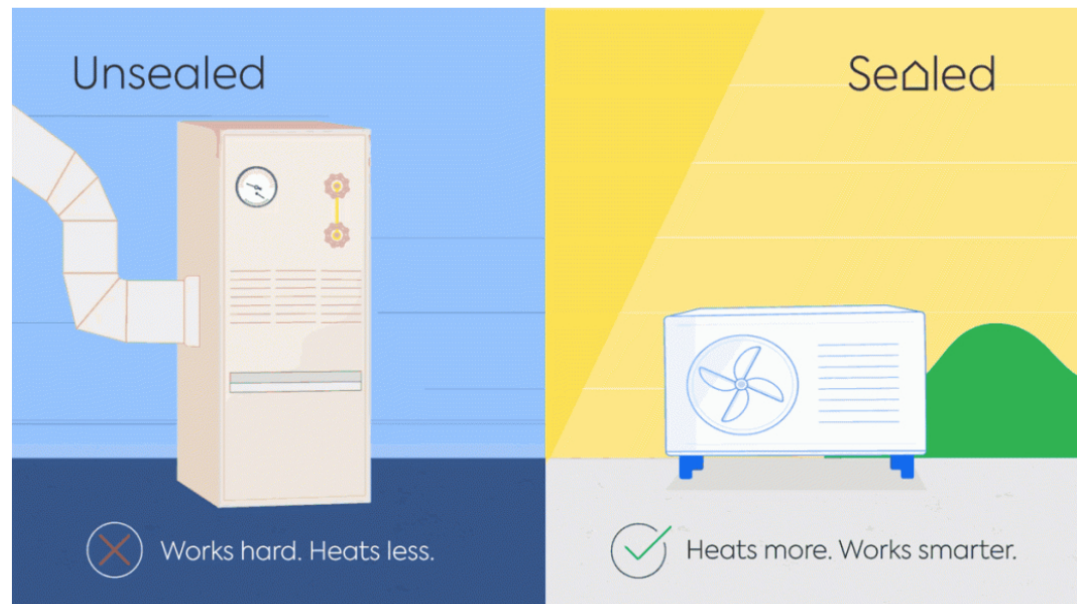
Heat pumps save energy in other ways, too. Modern heat pumps are equipped with variable speed compressors—which enables the heat pump to run at the precise speed needed to heat or cool your home. On moderate days, a heat pump doesn't need to run its compressor at full speed, so it doesn't. It can vary the speed at which it runs, which means it uses only the energy it needs.

Compare this with standard HVAC systems, most of which have two-stage compressors (which have only two levels of energy usage) or even one-stage compressors (which simply turn on and off). While these standard compressors technically do their job, they waste a lot of energy along the way. The heat pump, meanwhile, operates beautifully on exactly the amount of energy that's needed—no more and no less.

All this adds up to a lot of energy savings. Heat pumps are up to 3 times more efficient at their job than standard central heating and air conditioning systems. That's a big delta—and a much happier planet.

[Learn more about heat pumps in our complete guide here >>](#)

Lower your heating and cooling consumption by up to two thirds by replacing your fossil fuel based HVAC systems with a heat pump.



The case for installing a heat pump in your home.

Let's pivot a bit. For a new idea to work, it has to work for real people, and while we've talked a lot about why heat pumps are energy efficient, we haven't talked about another important factor that often gets overlooked: Traditional HVAC systems often just don't work well.

Sealed exists because people aren't happy with the comfort level in their homes. We get calls every day from people who are desperate to find a way

homes, we get calls every day from people who are desperate to find a way to make their muggy, [drafty homes](#) feel comfortable. It's not that they're not spending enough money—on the contrary, most are spending plenty on their monthly energy bills. It's that, despite the money they're spending, their homes don't feel good. The fact is that most of us are buying lots of energy and getting very little for it.

And that's for plenty of reasons. Many American homes aren't [properly insulated and air-sealed](#) (especially [older homes](#)) and plenty of [attics are left completely untreated](#). All of those factors are important and should be addressed in any responsible HVAC strategy.

[Never heard of air sealing? Learn more about it here.](#) It's important.

But one of the biggest reasons many US homes are uncomfortable is that they use old, inefficient HVAC technology—technology that releases millions of metric tons of carbon into our environment while providing a minimum of comfort.

Here's why a heat pump is the best HVAC for your home.

Like Tesla's groundbreaking electric car, heat pump technology is good news for both planetary sustainability and human comfort.

Heat pumps can heat, air condition, dehumidify and purify the air in your home—replacing four systems in one. You can install them just about anywhere, since they don't require ductwork (though they can use existing ductwork). They're whisper-quiet and don't smell. They run on clean, non-combustible energy which doesn't come with the risk of explosion. Plus, they heat and cool evenly, so every part of your home feels exactly the way you want it to.

[Learn more about the benefits of heat pumps at our complete guide here >>](#)

In short: You're going to like your heat pump better than your old HVAC. They make your home feel amazing, and they are—flat out—the best option currently available. (Believe us: We've done our research. When a better, more efficient HVAC technology shows up, we'll let you know.)

The biggest drawback of heat pumps is the cost and process of installation. But—more good news—it's now possible to [get your heat pump system installed for no upfront cost](#). All the decisions will be made by professionals, and you'll pay little by little, at a rate based on the money you save on energy bills. (That means if you don't save, you don't pay.)

Heat pumps are the technology of the future

The world is changing, and heat pumps are the technology of the future. There's never been a better time to make the switch. Heat pumps are such a clear winner that they've already become the [standard HVAC system in many countries, such as Japan, Sweden, and New Zealand](#). You'll even find them in many high-profile buildings (like Buckingham Palace).

Sales are increasing everywhere, too; in the US alone, the share of [heat pump sales for new single-family homes is over 40%](#). The future looks bright.

That said, we still have a long way to go. [Heat pumps currently provide about 5% of the world's climate control needs—but reports show that they could provide 90% of the world's heating and cooling needs](#), if they were installed everywhere they'd be effective.

And since heat pumps use clean energy and are up to 3 times more energy-efficient than traditional HVAC, the faster we can get heat pumps installed, the faster we can curtail carbon emissions.

Switching to heat pump technology won't solve all the world's challenges, but it'll certainly make your home more comfortable—and it's a major way we're going to adapt our culture and society to build a world that's sustainable for everyone. You don't have to be Elon Musk to see that's a win.





At least [7 percent of U.S. fossil-fuel energy](#) is used for something fairly banal: residential space and water heating. Changes to home heating in America could reduce fossil-fuel use nearly as much as taking half of all private vehicles off the roads.

How to join the heat pump revolution (in a way that doesn't hurt your bank account).

All in on heat pumps? So are we.

You'll be glad to know that, depending on where you are, [you might be able get a heat pump installed at no upfront cost](#). You'll pay us back little by little, based on the energy saved as a result of the work

Even better: We hire the professionals, oversee everything, and then—most importantly—stand by our work 100%. If you don't save energy, we don't get paid. Call 888-985-7481 to talk to a Sealed specialist now.



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