

Your Gas Stove Is Bad for You and the Planet

To help solve the climate crisis, we need to electrify everything.

By [Justin Gillis](#) and Bruce Nilles

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OAKLAND, Calif. — We have some good news that sounds like bad news: Your gas stove has to go.

We know how you'll feel reading those words. We used to love cooking with gas, too. But if our society is going to solve the climate crisis, one of the things we must do is stop burning gas in our buildings.

Nobody is going to shed a tear about having to switch to a more efficient furnace or water heater. But people feel emotional about gas stoves, and the gas industry knows it. Seeing this fight coming, the industry is already issuing [propaganda](#) with gauzy pictures of blue flames.

What the gas companies will not tell you is that your stove is a danger not just to the world's climate but also to your own family's health. We'll explain in a moment.

First, here's the larger situation: The need to tackle climate change is beyond urgent. We are running out of time. Within the next decade we need to cut climate pollution in half in the United States, roughly, to do our fair part in preserving a livable planet.

Despite the Trump administration, the nation is actually making progress in some areas. We are retiring coal-burning power plants at a record pace, and half of them are already gone. A new wave of ambition to address climate change is sweeping across state legislatures this year as more and more commit to 100 percent clean electricity or debate doing so. But despite this progress, the Rhodium Group estimates that climate-altering emissions in the United States [increased 3.4 percent](#) last year from the year before, one of the biggest jumps in decades.

Burning gas is now [a bigger source](#) of such pollution than burning coal, and nearly a third of that gas is burned in homes and commercial buildings. But despite the rising chorus of climate pledges by state and local governments, none of them has really tackled the problem of gas in buildings. In fact, gas companies are still being allowed to spend billions extending new lines, connections that will have to be capped off long before the end of their useful lives if we are to meet our climate goals.

Getting gas out of existing buildings is going to take a while, clearly, so new buildings are the right place to start weaning ourselves from this addiction. California is poised to go first.

In Berkeley, Councilwoman Kate Harrison is proposing a ban on gas hookups in new buildings, part of an effort to make sure the city follows through on its 2018 [declaration](#) of a "climate emergency." [Update: Berkeley and Windsor has passes this ban. Santa Rosa will be voting on this measure soon.] Other cities are studying the issue, and [Los Angeles](#) announced an ambitious plan this week. Once California cities show it can be done, we hope action will spread across the country.

The ultimate goal of this switch-over is to run more and more of the economy on electricity, a strategy known as “electrify everything.” This makes sense because as renewable energy displaces fossil fuels, the electric grid will get cleaner and cleaner.

People of a certain age may be thinking: Hold on. All-electric “Gold Medallion Homes” were a thing half a century ago, at a time when electricity prices were falling. Those homes were promoted heavily by the power industry and by Ronald Reagan, a pitchman for General Electric. But they became albatrosses for their owners when electricity prices eventually rose.

Why do all-electric homes make sense now? Because technology has come to the rescue, in the form of devices called [heat pumps](#). They run on electricity, but far more efficiently than the electric appliances of our parents’ generation. So if we start installing them now, then as the electric grid gets greener, our buildings will be contributing less and less to climate change.

You might never have heard of heat pumps, but you already have one in your home. A heat pump is the core technology in your refrigerator. It is basically a loop involving a pump and a compressor that sucks heat out of the interior and blows it into the kitchen, and it can do this even when the interior of your refrigerator is colder than the air in the room.

A heat pump can replace both your furnace and your air conditioner. In the winter, it sucks heat in from the outside, even when the weather is cold, and blows it into your house. In the summer, a heat pump runs in reverse, cooling the house. Highly efficient heat-pump water heaters are also widely available.

Building a new all-electric home powered by heat pumps is already cheaper than building with gas because you avoid the costs of gas lines and ventilation. For older homes the economics vary; a Rocky Mountain Institute study found the cost of installing and operating a heat pump over its lifetime can be more expensive or less expensive — plus or minus 10 percent — than having a gas system. And as heat pumps become standard in new buildings, the market will scale and costs will fall for both new and old homes.

Stoves actually use very little energy, but until people are convinced there are superior alternatives to gas stoves, we will not be able to get rid of gas lines to buildings — and start saving large amounts of money by shutting down the gas distribution system.

Once again, technology has come to the rescue. [Induction cooktops](#), running on electricity, are superior to gas stoves. These devices use magnetic waves to heat up pots, and cooks who have tried them quickly fall in love. The perceived advantage of gas stoves is pinpoint control of heat, but induction cooktops are more precise, and faster. For now, induction cooktops are generally more expensive than gas stoves. At retail, 30-inch gas cooktops generally run \$500 to \$1,000, while induction cooktops of that size run from \$800 to \$2,000.

A change to induction cooking would make sense even if the climate were not a concern, because gas stoves are polluting our homes. Over the past decade, a growing body of scientific evidence has shown that [gas stoves throw off pollutants](#) like nitrogen dioxide and carbon monoxide. When you are cooking, those invisible pollutants can easily reach levels that would be illegal outdoors, but the Clean Air Act does not reach inside the home.

Scientists [link](#) gas stoves to asthma attacks and hospitalizations. In 2008, Johns Hopkins scientists urged doctors to advise parents of asthmatic children to get rid of their gas stoves or at least install powerful exhaust hoods. Asthma is a rampant, discriminatory disease, hitting children and communities of color the hardest.

For health and climate reasons, we think people who can afford to switch now need not wait for prices to fall. Enlist a good contractor, replace gas appliances with heat pumps and cap off the gas line. At the same time, state incentive programs should be designed to ensure all families can make this transition as quickly as possible, regardless of income.

The sooner you make the switch, the sooner you can show off your sleek new induction cooktop to the neighbors and let them know that all-electric living is back, not a moment too soon.

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