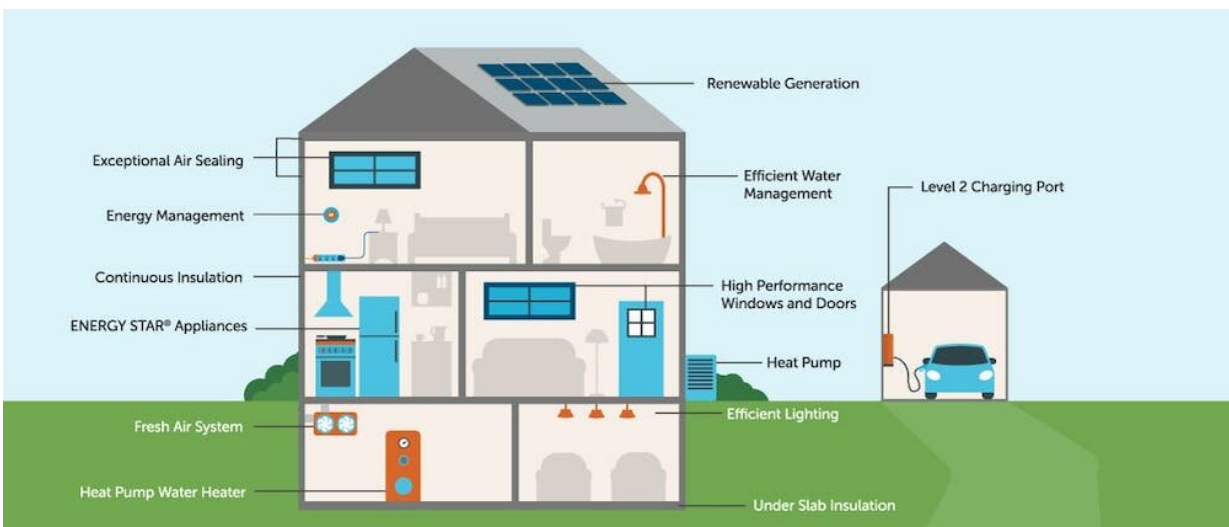


Why gas stoves matter to the climate, and the gas industry: Keeping them means homes will use gas for heating too

January 19 2023, by Daniel Cohan



This schematic shows key components of a net-zero house that generates as much electricity as it consumes, using renewable energy. Credit: [Efficiency Vermont, CC BY-ND](#)

Gas stoves are a leading source of hazardous indoor air pollution, but they emit only a tiny share of the greenhouse gases that warm the climate. Why, then, have they assumed such a heated role in climate politics?

This debate reignited on Jan. 9, 2023, when Richard Trumka Jr., a

member of the [U.S. Consumer Product Safety Commission](#), told [Bloomberg News](#) that the agency planned to consider regulating [gas stoves](#) due to concerns about their health effects. "Products that can't be made safe can be banned," he noted.

Politicians reacted with overheated [outrage](#), putting gas [stove](#) ownership on a par with [the right to bear arms](#) and [religious freedom](#). CPSC Chair Alexander Hoehn-Saric tried to douse the uproar, stating that he was "[not looking to ban gas stoves](#)" and that his agency "has no proceeding to do so." Neither does the Biden administration support a ban, a [White House spokesperson said](#).

Nevertheless, congressional Republicans raced to the barricades, introducing bills with titles like the [Guard America's Stoves \(GAS\) Act](#) and the [Stop Trying to Obsessively Vilify Energy \(STOVE\) Act](#).

This skirmish may seem like a tempest in a teapot, but it reveals important contours of the battlefield on which climate politics are waged. As I explain in my book, "[Confronting Climate Gridlock: How Diplomacy, Technology, and Policy Can Unlock a Clean Energy Future](#)," gas stoves matter to climate and to the gas industry because they serve as [gateway appliances](#) to the dominant residential uses of [natural gas](#): heating and [hot water](#).

Serious health effects

Direct impacts from gas stoves are a much more urgent concern for human health than for Earth's climate. Gas stoves are a leading indoor source of nitrogen dioxide, or NO₂, which can cause or worsen respiratory illnesses in people who are exposed to it.

For example, scientific studies show that living in a home with a gas stove increases children's risk of asthma by [nearly one-third](#) and

[contributes to pulmonary disease in adults.](#)

The climate doesn't care what fuel we use to cook. Gas stoves account for just 0.1% of [U.S. greenhouse gas emissions](#), even accounting for recent findings of larger than expected [household methane leaks](#). They aren't a big share of fuel sales either, burning just [3% of the natural gas consumed in homes](#).

Impeding home electrification

The significance of gas stoves for the climate becomes clearer in the context of the Biden administration's goal of [achieving net-zero U.S. greenhouse gas emissions by 2050](#). This target can only be achieved by curbing [fossil fuel use](#) across the economy, including in homes.

Installing more-efficient [furnaces](#), better insulation and [smart thermostats](#) are helpful first steps, but getting close to zero will require switching to electricity for space heating and water heating. In the U.S., 46% of homes use natural gas as their [main source of heat](#), 40% use electricity, 10% use other fuels such as heating oil or propane, and 4% are unheated. For water heating, the percentages are 47% gas, 47% electricity and 6% other fuels.

Today, electric and gas heating [have similar carbon footprints](#), since roughly [60%](#) of U.S. electricity is generated from fossil fuels and many homes use inefficient electric resistance heaters. But the emissions intensity of electricity is rapidly [declining](#) as [coal plants close](#) and [solar and wind power expands](#).

President Joe Biden has set a goal of 100% clean electricity nationally by [2035](#). Although current federal policies fall short of that target, a growing number of [states](#) have committed to 100% clean electricity by 2050 or sooner.

US electric power generation sources over time

Coal declined significantly as a U.S. source of electricity generation as natural gas and renewable energy increased over the past 15 years.

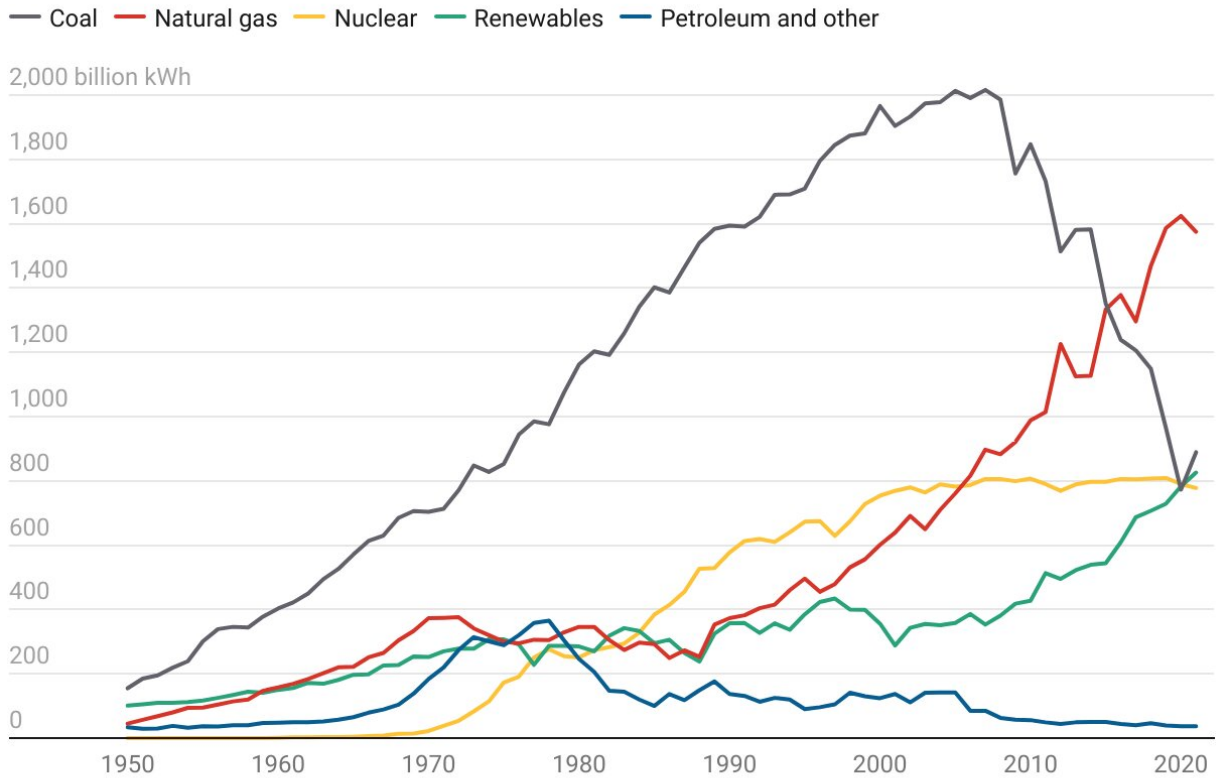


Chart: The Conversation/CC-BY-ND • Source: EIA

Credit: The Conversation

Natural gas is far harder to decarbonize than electricity. Lower-carbon fuels such as [biogas](#) and [hydrogen](#) that could be blended in with natural gas are likely to remain scarce and [costly](#).

Furthermore, advanced technologies enable electric heat pumps to heat both air and water far more efficiently than traditional electric or gas furnaces and water heaters. That's why [various scenarios](#) for

[decarbonizing energy](#) all envision a major shift to electric heat pumps. This transition is [well underway in Europe](#) and [starting in the U.S.](#)

Replacing existing gas furnaces and water heaters with electric heat pumps can be costly and complicated, though incentives from the Inflation Reduction Act can help. But if [new homes](#) are built fully electric from the start, they avoid the cost of installing natural gas hookups, and emit far less air pollution and fewer greenhouse gases throughout the homes' lifetime.

New York City and more than 50 California towns, cities and counties have already [banned gas hookups in new buildings](#). Elsewhere, 20 states have [barred the enactment of natural gas bans](#).

Gas stoves are a big reason why.

The power of a slogan

"Most people don't care how their water is heated or how their heater works, but the Viking stove in the kitchen, people have this visceral emotional attachment," Michael Colvin of the [Environmental Defense Fund](#) told me in an interview for my book, "[Confronting Climate Gridlock](#)."

That emotional attachment makes stoves a flashpoint in battles over climate policy.

"Cooking is the hill that the [gas industry](#) wants to fight on," Bruce Nilles of [Climate Imperative](#) told me in a 2020 [interview](#) that foreshadowed the current skirmish. "They'll say, 'Do you want the government to take away your gas stove that makes you a great chef?'"

The [American Gas Association](#) has promoted the notion that gas stoves

make skilled cooks since the 1930s, when it introduced the advertising slogan "[Now you're cooking with gas.](#)" An AGA executive [planted the phrase](#) with writers for comedian Bob Hope. Soon it was picked up by [comedian Jack Benny, and even by Daffy Duck](#). The phrase has also [appeared over time](#) in social media endorsements and hashtags.

Gas burners do provide more control than many stoves with electric coils, especially older models, which can be slow to heat up and cool down. Today, however, many [chefs](#), [consumers](#) and experts say gas is no longer the obvious choice. Magnetic induction cooktops, which cook using electricity to generate a magnetic field, heat faster, control temperatures more precisely and use less energy than other stoves.

"There's this big misconception that electric ranges don't cook as well as gas," Shanika Whitehurst, a member of Consumer Reports' research and testing team, [said in a recent article](#). "But the technology has improved to the point where electric and especially induction ranges and cooktops cook every bit as well, if not better than gas." Consumer Reports ranks induction and some traditional electric stoves among its [top-rated models](#)

Homes built today will endure far beyond Biden's 2050 net-zero target. And the longer the gas-is-better myth persists, the harder it will be to fully electrify new homes from the start. As I see it, if "cooking with gas" keeps us tethering new homes to natural gas grids for decades to come, our health, climate and wallets will pay the price.

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

Provided by The Conversation

Citation: Why gas stoves matter to the climate, and the gas industry: Keeping them means homes will use gas for heating too (2023, January 19) retrieved 1 June 2023 from <https://techxplore.com/news/2023-01-gas-stoves-climate-industry-homes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.