

Ditching gas for electric heating will cut emissions in 46 states, study finds

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A prominent building electrification supporter called for policymakers to incentivize residential heat pumps, citing new analysis that finds converting to the technology from natural gas furnaces would cut planet-warming emissions in nearly every U.S. state.

The Rocky Mountain Institute, or RMI, found that replacing a gas furnace with an electric-powered air source heat pump would lead to lower greenhouse gas emissions in 46 of the Lower 48 states. Only Wyoming and Utah, which remain reliant on coal for much of their electric power generation, do not have clean enough grids to yield emissions reductions from heat pump conversions, the study found.

The recommendation comes as cities like Washington D.C., New York City and St. Louis have adopted new building performance standards that require property owners to find ways to cut planet-warming emissions. Local efforts in California, Massachusetts and Washington state to ban natural gas hookups or require all-electric systems in new construction have also raised questions about whether heat pumps are the right solution for every state.



The RMI analysis found that the continuing shift to low- or no-emissions electric power generation means that heat pumps can help policymakers achieve climate goals, even in cold-climate regions where the advantage of natural gas over electric alternatives has been debated.

"State policymakers and utilities should prioritize incentives that enable homeowners and landlords to electrify residential heating with heat pumps in the next legislative and planning sessions," RMI's Claire McKenna, Amar Shah and Mark Silberg wrote in a June 8 article.

RMI acknowledged that heat pump conversions would produce higher greenhouse gas emissions in some states in the coming years. However, even in states where the grid will not be clean enough by 2025, opting for a heat pump in 2020 would still lead to lower emissions over the typical 15-year lifespan of a gas furnace, RMI concluded.

The growing amount of clean energy on the U.S. power grid makes it possible for most U.S. states to reduce greenhouse gas emissions by converting from gas furnaces to residential heat pumps, the Rocky Mountain Institute said.

Source: AP Photo

all coal-fired power plants by 2030.

The group said the "clock is ticking" because 5 million to 8 million U.S. buildings install new heating equipment each year, potentially locking in fossil fuel use for up to two decades.

The analysis is based on projections of future electric power generation sources from the National Renewable Energy Laboratory, or NREL. A similar study by the Sierra Club found that heat pump conversions would cut emissions in all Lower 48 states, but relied on a more aggressive scenario in which the U.S. retires

Richard Meyer, director of energy analysis at the American Gas Association, said RMI's singular focus on heat pumps as a solution was misplaced.

"I'm not quite sure how RMI determines that heat pumps are lower emissions in almost every state, but it's impossible to scrutinize the analysis since the assumptions aren't shared," he tweeted. "All I can say is that our internal analysis doesn't support their conclusion."

AGA commissioned a study in December 2019 that concluded new high-efficiency gas heating technology could cut greenhouse gas emissions from homes by 24% to 40% through 2050. RMI and the Sierra Club criticized the report, saying it relied on technologies that have yet to hit the market.

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