

Cooking with Gas?

Quite a lot of input on the decarbonization benefits of the electric stove have been shown. However, I must be missing something, but I do not know what.

It seems that per the energy flow diagram I sent with this letter on the May 2023 column “Still Cooking With

As such it seems odd to me in a time when we are banning gas stoves that this comparison/energy flow diagram has not been studied so regulators can make informed decisions based on the facts and calculations. Nowadays decisions are made on what feels good, not what is logical.

benefits to converting to gas stoves in the current utility environment, broadly speaking. It only looks like there are if one ignores what happens at the power plant. Mr. Danenhauer made his point using average carbon content. The situation is even worse for those wishing to ban gas stoves when the marginal carbon content of the grid is considered—that is, the carbon content of the generation source that will be triggered when the electric stove turns on.

As he mentions, the story in California is slightly different because their grid has a lower carbon content, and so one might think there is a measurable benefit from electrification. This is more than compensated for by the fact that most cooking happens in the 4 p.m. to 9 p.m. block of time where California has its peak problems.

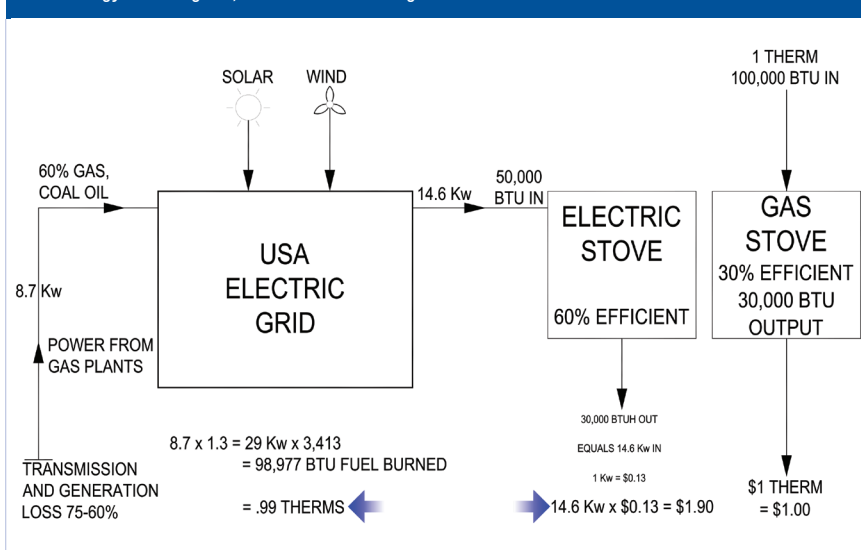
California utilities have a variety of programs to get people to reduce electric load during this major cooking period; Californians switching to electric stoves is only going to make their grid less stable at a time when their natural gas peaking plants are in full operation.

The IAQ impact of gas stoves in places (such as California) that require ventilation standards like ASHRAE Standard 62.2 is not going to be significant. In improperly ventilated homes, however, gas stoves can definitely exacerbate IAQ problems. The better solution is to provide ventilation rather than to ban gas stoves.

Max Sherman

*Fellow/Life Member ASHRAE
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Grid energy flow diagram, U.S. electric versus gas stove.



Gas?” by Max Sherman, Ph.D., Fellow/Life Member ASHRAE, there is essentially no reduction in carbon emissions with an electric stove when the grid is 60% carbon based. By all accounts that I read, this is the case in the U.S.

In the column, Max Sherman gave the efficiency figures for a gas versus electric stove, which I question on their accuracy since there was no source provided, and these numbers don’t seem to match what I have encountered. I do realize that in California the grid is closer to 42% carbon powered. Still, this does not mean the electric stove is zero emission.

The energy cost figures are average, but no doubt that the electric stove is more expensive to cook on, at least double.

I must also let you know that my 103-year-old mom created a few electric stove fires in her life, so no doubt in my mind that risks exist and are more prevalent with an electric stove.

*Greg Danenhauer
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SHERMAN RESPONDS

Mr. Danenhauer has the story essentially correct. There are no significant decarbonization