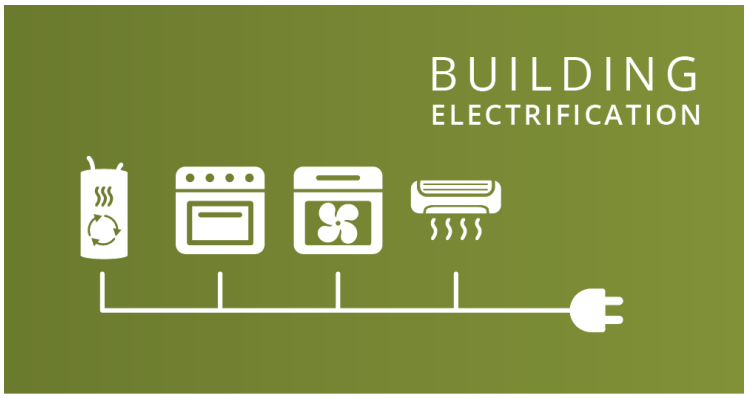
CHESAPEAKE CLIMATE ACTION NETWORK

Healthy Homes: Gas vs Electric

Gas use in homes not only contributes to climate change but is also harmful to your health. A robust body of scientific research shows the pollutants released by gas appliances—especially ovens and stoves—can have negative health effects, often exacerbating respiratory conditions like asthma. In fact, the air indoors—where people spend nearly 90 percent of their time—is often more polluted than outdoor air and can reach levels that would be illegal outside.[1]



Building electrification yields significant benefits to air quality and public health. It is also one of the most cost-effective strategies to rapidly reduce the rate of warming and buy time for deeper global decarbonization.

Dangers and Adverse Impacts of Gas Use in Buildings:

- In 2018 air pollution from burning fossil fuels was responsible for 1 in 5 deaths worldwide—roughly the population of New York City.[2] In the United States, 350,000 premature deaths are attributed to fossil fuel pollution each year. Thousands of kids under age 5 die each year due to respiratory infections attributed to fossil fuel pollution.[3]
- From 2010–2019 the US suffered 1,411 significant gas incidents—roughly one every three days leading to fatalities, serious injuries, and more than $3.5 billion in property damage. [4]
- Gas appliances emit a wide range of air pollutants, such as carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM), and formaldehyde, which have been linked to various acute and chronic health effects, including respiratory illness, cardiovascular disease, neurological problems, dizziness, nosebleeds, nausea, and headaches.[5] Moreover, living in a home with a gas stove increases a child's risk of experiencing asthma symptoms by up to 42 percent.[6]
- 40 percent of Americans live in areas with unhealthy air, according to the American Lung Association's new State of the Air report.[7]

Health Benefits of Building Electrification:

- Electrifying buildings can help improve indoor environmental quality. Improved air quality can reduce asthma symptoms and other health impacts especially important during the COVID-19 pandemic.
- All-electric buildings eliminate the risk of carbon monoxide poisoning and reduce the risk of fires from combustion.
- Electrification of home appliances would benefit low-income households and environmental justice communities who face disproportionate air-pollution burdens by improving indoor air quality.[8]
- Heat pumps stand out when it comes to electrifying space heating and cooling due to their advanced technology and high efficiency. This contributes to a more stable and reliable means of maintaining a safe air temperature.

What About Gas Stoves?

Gas stoves are a primary source of combustion (burning) pollution inside the home. Cooking on gas can spike emissions of nitrogen dioxide and carbon monoxide to levels that would violate outdoor pollutant standards.[9]

- Children in a home with a gas stove have up to a 42 percent increased risk of having asthma.
- Homes with gas stoves can have nitrogen dioxide concentrations that are 50–400 percent higher than homes with electric stoves.
- Under a hypothetical cooking scenario where a stove and oven are used simultaneously for 1 hour, peak concentrations of NO2 from cooking with gas appliances exceed the levels of acute national and California-based ambient air quality thresholds in more than 90% of modeled emission scenarios.[10]
- Concentrations of CO and NO2 resulting from gas cooking are the highest for apartments, due to a smaller residence size. This presents an additional risk for renters, who are often low-income.

Outdoor Standards for NO_2	**1-hr Average (ppb)**
US National Standard (EPA)	100
Canadian National Standard	60
California State Standard	180
Indoor Guideline for NO_2	**1-hr Average (ppb)**
Canada	90
World Health Organization	106
Measured NO_2 Emissions from Gas Stoves	**Peak (ppb)**
Baking Cake in Oven	230
Roasting Meat in Oven	296
Frying Bacon	104
Boiling Water	184
Gas Cooktop - No Food	82-300
Gas Oven - No Food	130-546
Source: https://rmi.org/insight/gas-stoves-pollution-health	

Maryland Must Act Now!

Electrifying buildings is a key component of local climate and health action, as it reduces both the harmful emissions and health impacts related to buildings. Maryland must not fall behind and should support rapid building electrification in order to cut pollution from homes and buildings, or risk locking in emissions that will threaten the state's climate goals while endangering Marylanders all across the state with dangerous fossil fuel infrastructure.

Contact our MD Campaign Coordinator Anthony Field: anthony@chesapeakeclimate.org or (301) 664-4068.

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