

My name is Dr. Elise Riley, I'm a longtime Montgomery County resident and Internal Medicine physician. Much of my career has been involved in the care of uninsured and underinsured patients. I'm also a member of the steering committee of Chesapeake Physicians for Social Responsibility. It is a statewide organization of physicians and healthcare professionals that addresses the existential public health threats to life on this planet: the climate crisis, nuclear war and the issues of pollution and toxic effects on health. I'm writing in support of bill number 13-22, the Comprehensive Building Decarbonization bill.

The evidence of the devastating effects of climate change abound. We see it in the increasing episodes of excessive heat, extreme weather events, drought, fires, flooding and melting glaciers. There is no more time to procrastinate; we are in a **Climate Emergency**. The time to act is now. Montgomery County has the opportunity to be in the vanguard of addressing this issue.

The Montgomery County Climate Action Plan notes that buildings are the cause of up to 50% of our greenhouse gas emissions. Moving towards 100% electric new construction will help move us off fossil fuels and be an important step on a local level in decreasing the greenhouse gas emissions which is critical for the viability of our planet. New York City, the largest city in the country passed legislation last year to move to all electric construction. This is in addition to other cities in California and Washington state which have already done the same.

We have viable options for construction without the use of natural gas. The cost of building all electric now is usually less than or equal to the cost of using gas. It is less expensive to build with electric rather than trying to retrofit in coming years. We also have good options to replace gas run appliances. The future is electric and it does not make sense to build with fossil fuels going forward.

Breaking the habit of fossil fuels has benefits not only in terms of Greenhouse Gases but also health benefits for our citizens. Natural gas is not as safe as electricity. One rarely hears of electric leaks but gas leaks are a dangerous reality.

Natural gas explosions from gas leaks result in devastating effects including significant morbidity, mortality; and millions of dollars in damage. I vividly remember the horrific 2016 explosion in the Flower Branch neighborhood incurring the loss of seven lives and many more lives ruined.

Carbon monoxide (CO) poisoning is a risk with a number of fuels including gas; it is a byproduct of combustion. Inadequately maintained, installed and vented gas appliances such as furnaces, hot water heaters and stoves may be a source of exposure and health risk. At low levels it may be a cause of dizziness, confusion and headaches, and high levels may be fatal. As a physician I have had patients who have had carbon monoxide exposures and poisoning. It is frightening. Their stories have made me a strong advocate for CO detectors and when my family members move into new places, I always gift them a new CO monitor.

Gas stoves emit a wide range of dangerous pollutants inside homes including nitrogen oxide (NO<sub>2</sub>), carbon monoxide (CO), formaldehyde and fine particulate matter. All of these have health effects. The average person spends 90% of their time indoors possibly putting them at higher exposure from indoor pollutants. .

The burning of natural gas in stoves releases NO<sub>2</sub> into the indoor air and is an important source of household air pollution. Breathing air with high concentrations of NO<sub>2</sub> can have significant respiratory effects including inflammation and irritation of the airways. Children are at higher risk due to their developing lungs. Studies have shown that even routine cooking on gas stoves can quickly increase peak levels of NO<sub>2</sub>, that may be well above the EPA standards for outdoor air quality particularly if not vented properly. A 2013 meta-analysis of 41 studies showed that children living in homes with gas stoves have a 42% increased risk of experiencing asthma type symptoms and 24% increased risk of ever being diagnosed with asthma in their life. Increased indoor NO<sub>2</sub> levels also increased the risk of current wheezing symptoms.

The Australian Climate Council suggests a child living in a home with gas has a similar risk to living in a home with cigarettes. Ventilation can reduce NO<sub>2</sub> exposure but not completely eliminate it and this is obviously very dependent upon consistent use of adequate ventilation and the efficacy of the vent, which should be vented outdoors. Estimates are that homes with gas stoves have approximately 40-50% higher NO<sub>2</sub> levels than those with electric stoves. In low income housing, frequently there isn't adequate ventilation. Living units tend to be smaller increasing exposure. These communities have additional risks frequently due to more heat and pollutant exposure in their neighborhoods.

On June 22<sup>nd</sup> of this year the American Medical Association (AMA) in the annual committee meetings took the step of the adopting a resolution recognizing the association between the use of gas stoves and indoor NO<sub>2</sub> levels and asthma. They resolved to inform members and the public that the use of gas stoves increases household air pollution and the risk of childhood asthma. In addition they resolved to advocate for innovative programs to transition from gas to electric stoves.

Decarbonization of buildings is critical to achieving greenhouse gas emission reduction goals to address the Climate Emergency that we face. This will also help reduce the significant health and safety effects of natural gas.

The decision you make will impact the future for us and future generations. Montgomery County has the opportunity to be a leader and set an example in taking the necessary steps to address the issue of natural gas use in building construction. I strongly urge you to support Bill 13-22, The Comprehensive Decarbonization Bill.

Thank you for your attention  
Elise Riley MD FACP

## References:

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