The Scary Truth about Gas, And The Good News About Electrification

The gas industry is promoting myths to help keep their polluting product inside our homes and businesses. Here's the truth.

Myth #1: Gas Provides a Reliability that Electric Systems Can't Match

Gas lobbyists often argue that widespread gas usage is necessary because gas-fired appliances are more reliable than electric-based appliances. **This argument ignores the fact that many gas appliances, such as gas furnaces, also require electricity to run, meaning a gas furnace is no better than an electric heat pump if the power goes out.**[1] Additionally, Maryland has one of the most reliable grids in the nation, meaning the state is well-prepared to support increasingly-electrified buildings and transportation.[2]

On a broader scale, the grid itself is more reliable when more renewable electricity generation is available compared to natural gas and other fossil fuel-powered generation. Carbon-free renewables can contribute to grid flexibility, improve grid diversity, and help manage variable supply and demand, especially when paired with demand response and improved energy efficiency and battery storage. This is borne out by data: countries with relatively high amounts of renewable energy generation like Germany and Switzerland have better grid reliability than those powered by a larger share of fossil fuels–like the US.[3] Natural gas advocates like to claim that natural gas is a virtually weather-proof source of energy, but fail to acknowledge events like the Texas ice storms last year that crippled gas production and supply, leaving thousands of people without heat.[4]

Myth #2: Gas Appliances Perform Better than Electric Appliances

A common misconception that the gas industry wants to spread is that gas appliances simply perform better than electric systems. While this may have been true several decades ago, modern advances in electric systems, from heat pumps to hot water heaters, have resulted in products that produce the same benefits people are accustomed to without the dangerous combustion of natural gas. One of the best examples is stoves: although induction cooktops have a higher initial price tag, induction cooktops are more precise and faster than their gas counterparts. Additionally, induction cooktops help avoid the pollutants that gas stove tops produce, which can cause or worsen conditions such as asthma.[15] Similarly, electric heat pumps technology has advanced to the point where it can be an effective heating system even in very cold climates.[16]

Myth #3: Gas is Cheaper than Electrification

At the end of the day, what most people care about is getting the energy services they need at a cost they can afford. For that reason, it is illogical to continue to build out gas infrastructure in areas where electric systems have been proven to be cheaper, such as the buildings sector. A study commissioned by the Maryland Commission on Climate Change – under the aegis of the Hogan Administration – found that embracing policies to electrify space and water heating while ramping down gas could save the state $1 billion annually by 2045.[5] The same report found that as Maryland moves toward a net-zero-emissions goal, all-electric new buildings of any type— residential and commercial—will have the lowest total annual costs (including equipment, maintenance, and energy costs). According to Rewiring America, 99% of households in Maryland—2.2 million homes—could save money on energy bills if they converted an existing appliance to a high-efficiency electric appliance.[6]

Myth #4: Transitioning from Natural Gas Will Harm Low and Moderate-Income Communities

Electric appliances in homes can be a more expensive up-front investment over gas appliances. However, efficient electric appliances can help lower energy bills for low-income households, and improve indoor air quality, safety, and comfort.[7] As gas systems age, they become more expensive to operate and repair. As gas prices rise, homes that do not switch to electric may be locked into higher prices for the lifespan of their appliances. Not to mention, as others make the switch from gas to electric, remaining customers will be forced to pay higher prices. For that reason, it is essential that governments provide proactive support to low and moderate-income communities now to help them prepare for and make the inevitable transition to electrification. These communities are particularly vulnerable to the dangers that gas appliances, from stoves to furnaces, pose to indoor air quality.[8] The longer they are forced to endure these pollutants, the longer it will take to reduce inequities in asthma rates and other health problems.

Myth #5: So-Called "Clean Gas" is the Future

The gas industry is betting heavily on "clean gases'' to allow them to continue to grow their operations while convincing the public to believe the fuels are "carbon neutral." It is true that for certain hard to abate sectors, like industrial manufacturing, gases will be important sources of energy heading towards mid-century. For nearly every other sector of energy consumption, though, these gases are too costly, too dirty, and too difficult to source to be alternatives to electrification.

Although hydrogen emits only water vapor and heat when it generates power in a fuel cell, most hydrogen today is produced using gas via steam methane reforming, a process that emits carbon dioxide. While the gas industry claims they can make this process clean by capturing its CO2 emissions, the truth is that it is neither as clean nor as cheap as the gas industry would want you to think.[9] Green hydrogen, which *is* clean and is produced by electrolysis using renewable energy, is a promising fuel but is not yet cost competitive.[10]

The other major fuel the gas industry touts, "renewable natural gas," is also not the panacea for our energy challenges the industry wants to make it seem. "Renewable natural gas" is gas that is sourced from decaying feedstocks, like landfills. On the surface, it may seem appealing as a readily available, natural source of energy. However, an article from the Sightline Institute lays bare its flaws: first, it is not available in nearly the amounts necessary to replace current natural gas use; second, its cost is prohibitively expensive; and third, it has a high carbon intensity. Advocating for renewable natural gas as a substitute for clean electrification of our economy is greenwashing at its finest.[11]

Myth #6: The Gas Industry Provides Essential Jobs

Nationally, the number of jobs in natural gas-including in fuels, electrification, transmission and distribution-is less than the total jobs in carbon-free renewable electricity generation and renewable heating and cooling.[12] America's renewable energy jobs cannot be offshored, and unlike fossil fuels, they have proven to be more resilient in the face of sudden disruptions. When the pandemic hit in 2020, nearly every energy sector was forced to shed jobs. Four areas, however, actually gained jobs in 2020: wind, battery storage, electric cars, and hybrid electric vehicles. [13] Recent analyses also show that in many cases, renewable energy jobs can and should be located where fossil fuel jobs currently are, making the transition for workers towards clean jobs much easier.[14]

Fact sheet provided by CCAN and CCAN Action Fund. Contact Riley Pfaff at riley@chesapeakeclimate.org

CHESAPEAKE CLIMATE ACTION NETWORK

Works Cited

1. "Gas vs electric appliances: What you should know first." *RE Sources*, 25 October 2021, https://www.re-sources.org/2021/10/gas-vs-electric-appliances-what-you-should-know-first/. Accessed 14 February 2022.
2. Cohn, Scott. "2021's most-improved state for business is Maryland. New infrastructure thinking is the reason." *CNBC*, 13 July 2021, https://www.cnbc.com/2021/07/13/infrastructure-makes-maryland-the-most-improved-state-for-business.html. Accessed 14 February 2022.
3. Lovins, Amory B. "Three Myths About Renewable Energy and the Grid, Debunked." *Yale Environment 360*, 9 December 2021, https://e360.yale.edu/features/three-myths-about-renewable-energy-and-the-grid-debunked. Accessed 14 February 2022.
4. Domonoske, Camila. "No, The Blackouts In Texas Weren't Caused By Renewables. Here's What Really Happened." *NPR*, 18 February 2021, https://www.npr.org/sections/live-updates-winter-storms-2021/2021/02/18/968967137/no-the-blackouts-in-texas-werent-caused-by-renewables-heres-what-really-happened. Accessed 14 February 2022.
5. Maryland Commission on Climate Change. "Appendix A Building Energy Transition Plan." *Maryland Department of the Environment*, 2021, https://mde.maryland.gov/programs/Air/ClimateChange/MCCC/Documents/2021%20Annual%20Report%20Appendices%20FINAL.pdf. Accessed 14 February 2022.
6. Rewiring America. "Benefits of Electrification." *Rewiring America*, https://map.rewiringamerica.org/states/maryland-md.
7. "Low-Income Community Energy Solutions." *Department of Energy*, https://www.energy.gov/eere/slsc/low-income-community-energy-solutions. Accessed 14 February 2022.
8. Roberts, David. "Gas stove cooking routinely generates unsafe levels of indoor air pollution." *Vox*, 11 May 2020, https://www.vox.com/energy-and-environment/2020/5/7/21247602/gas-stove-cooking-indoor-air-pollution-health-risks. Accessed 14 February 2022.
9. Mikulka, Justin. "The 'Big Lie' of Blue Hydrogen Starts With Ignoring Basic Economics." *DeSmog*, 10 September 2021, https://www.desmog.com/2021/09/10/the-big-lie-of-blue-hydrogen-starts-with-ignoring-basic-economics/. Accessed 14 February 2022.
10. Kurmelovs, Royce. "Green hydrogen beats blue on emissions and financial cost, Australian study finds." *The Guardian*, 17 November 2021, https://www.theguardian.com/australia-news/2021/nov/18/green-hydrogen-beats-blue-on-emissions-and-financial-cost-australian-study-finds. Accessed 14 February 2022.
11. Feinstein, Laura, and Eric de Place. "The Four Fatal Flaws of Renewable Natural Gas." *Sightline Institute*, 9 March 2021, https://www.sightline.org/2021/03/09/the-four-fatal-flaws-of-renewable-natural-gas/. Accessed 14 February 2022.
12. "United States Energy & Employment Report." *Department of Energy*, 2021, https://www.energy.gov/us-energy-employment-jobs-report-useer. Accessed 14 February 2022.
13. Ibid.
14. Geman, Ben. "How Biden's clean-energy jobs transition could work in fossil fuel hubs." *Axios*, 24 February 2021, https://www.axios.com/clean-energy-jobs-transition-biden-c656cb47-fe7e-4a8c-9737-981e006aff6f.html. Accessed 14 February 2022.
15. National Asthma Council. "Gas stoves and asthma in children." *National Asthma Council Australia*, https://www.nationalasthma.org.au/living-with-asthma/resources/patients-carers/factsheets/gas-stoves-and-asthma-in-children. Accessed 14 February 2022.
16. "What temperature does a heat pump stop working?" *Sealed*, https://sealed.com/resources/winter-heat-pump/. Accessed 14 February 2022.