

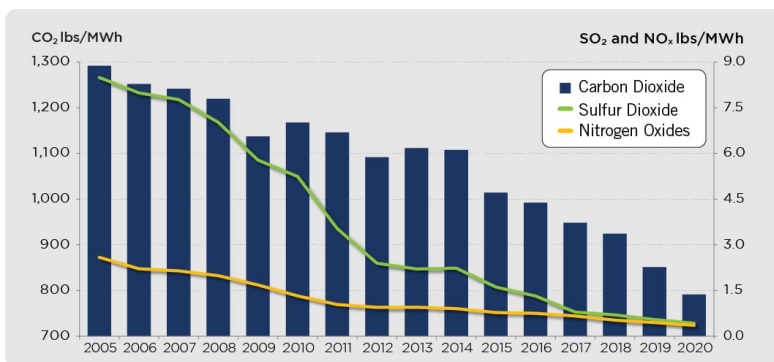
## Why electrify in Maryland?

***The pathway to decarbonization relies on electrification of energy systems for buildings, transportation, and the economy!***

The Intergovernmental Panel on Climate Change (IPCC) and the Maryland Commission on Climate Change (MCCC) recommend we achieve greenhouse gas net neutrality by mid-century.<sup>1</sup> We know that we cannot achieve this while depending on dirty fossil fuels to run our state. Our electricity grid is getting cleaner and more sustainable as we deploy more renewable energy and increase our energy efficiency. Experts agree, **the pathway to decarbonization is two-fold: electrify everything and increase the use of renewables across our electricity grid.** We don't have time to wait; we must do both at the same time!

### A cleaner grid with more renewables powering Maryland

#### GHG Emissions over time across PJM



In Maryland, we get our electricity through the regional transmission organization PJM. Due to clean energy policies in states throughout the PJM footprint and the competitive wholesale market, electricity is coming from cleaner, more efficient sources. This trend has contributed to the decline in emission rates over both the long-term as well as year-over-year. Between 2005 and 2020, greenhouse gases emissions including

CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>2</sub> have steadily declined across PJM.<sup>2</sup> From 2019 to 2020, the average emission rates for CO<sub>2</sub> dropped 7%. Gains in emission reductions for SO<sub>2</sub> and NO<sub>2</sub> were even better. Our grid is getting cleaner each year as Maryland, and our neighboring states, continue to increase our dependence on renewable energy. Currently, about 50% of Maryland's electricity comes from non-GHG-emitting sources including wind, solar, hydroelectric, and nuclear.<sup>3</sup> As we work towards our renewable energy goals set in the Clean Energy Jobs Act of 2019, our electricity will continue to decarbonize. Even with today's grid, electricity is a cleaner energy source than fossil fuels like fracked gas and propane.

### Electrification is affordable

Electrification has significant economic benefits. All-electric new buildings typically have the lowest construction and operating costs, according to an analysis by Energy + Environmental Economics (E3).

### All-electric buildings are cheaper to build

The Maryland Department of the Environment worked with Energy + Environmental Economics (E3) to model the costs of all-electric new buildings. E3's Maryland Buildings Decarbonization Study<sup>4</sup> found that:

- For single-family homes, all-electric homes **cost less to construct** than new mixed-fuel homes.
- For multifamily buildings, all-electric **costs about the same to construct** as mixed-fuel buildings.

- For commercial buildings, all-electric buildings can have **higher or lower construction costs** than mixed fuel buildings depending on building type and use.

## Lower and more stable energy bills

According to Rewiring America, 99% of households in Maryland—2.2 million—could save money on energy bills if they converted an existing appliance to a high-efficiency electric appliance.<sup>5</sup>

In addition to the cost savings, electrification has the benefit of added price stability. Across the country, fuel prices are increasing, whether for heating our homes or filling our gas tanks. The U.S. Energy Information Administration predicts that utility bills will continue to increase through this winter, largely due to the volatility of fossil fuel prices. Households with electric heat pumps will feel this impact significantly less than homes using natural gas, propane, or fuel oil.<sup>6</sup> In fact, households using fracked gas for heat should expect to pay on average \$161 more this winter compared to last year and households using delivered fuels (propane and fuel oil) will see even greater increases (\$582 and \$524, respectively), while households with electric heat pumps can expect to pay only \$21 more.<sup>7</sup>

Percent change in fuel bills from last winter (forecast)			
	Base case forecast	If 10% warmer than forecast	If 10% colder than forecast
Heating Oil	37%	24%	51%
Natural Gas	29%	23%	45%
Propane*	39%	17%	75%
Electricity	5%	3%	14%

\* Propane expenditures are a household-weighted average of the Northeast, Midwest, and South regions. All others are U.S. averages. Expenditures do not reflect retail fuel prices locked in before the winter heating season starts.

## Electrification is safer

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.<sup>8</sup> In fact, homes with poor ventilation can surpass the one-hour outdoor standard for exposure to nitrogen dioxide within just a few minutes of stove usage, particularly in more cramped kitchens of older, low-income communities, highlighting how this is an environmental justice issue.<sup>9</sup>

## Electrification is a critical tool in our decarbonization that will save Marylanders money and improve the health of our communities!

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