Chesapeake Climate Action Network

CUTTING THROUGH THE SMOG:

HOW AIR QUALITY STANDARDS HELP SOLVE THE HIDDEN HEALTH TOLL OF AIR POLLUTION FROM MARYLAND'S HOMES AND BUSINESSES

- Statewide, **fossil fuel equipment emits more than three times as much health-harming nitrogen oxides (NOx)** as the state's power plants.[1]

- **Eliminating fossil fuel equipment would remove nearly as much NOx as taking half the state's diesel vehicles** off the road.[2]

- NOx pollution from burning **fossil fuels in buildings has increased 3.7%** from 2017–2023 while NOx pollution from other sectors has gone down.[3]

- In 2017 alone, outdoor pollution from fossil fuel equipment caused an estimated **163 premature deaths**,[4] about **3,500 cases of respiratory symptoms**, and **6,500 work loss days per year**, costing more than **$1.3 billion** in health impacts annually.[5]

- **People of color in Maryland are exposed to 60% more residential gas equipment pollution** than white people, with Black Marylanders exposed to 70% more pollution from residential gas equipment than white Marylanders.[6]

- An air quality standard is key to meeting Maryland's climate commitments as **fossil fuel use in buildings represents 13% of Maryland's greenhouse gas emissions**.

- In some parts of the United States, **space cooling can represent more than 70% of electrical demand** on extremely hot days.[7] Heat pumps, which use 29% less electricity compared to central ACs,[8] can improve resilience amid warming temperatures.

- **If Maryland homes fully upgrade to heat pumps and other electric appliances, the state's overall electricity consumption for home heating and cooling will decrease** despite the increase in electric equipment.[9] This is because high-efficiency heat

pumps are displacing widely used lower efficiency electric resistance heating systems and air conditioning systems.

- Adopting an **air quality equipment standard can save 98% of Maryland households money on their monthly energy bills**, and the median low-income household in Maryland would see $373 in savings per year with a heat pump compared to a gas furnace.[10]

- Maryland is on pace to electrify more than 50% of all homes by 2030,[11] but **will need further action to meet its climate goals**.

- **Maryland has the obligation[12] and legal authority[13] to pursue air quality equipment standards** for HVACs and water heaters.

- Transitioning Maryland homes from fossil fuel equipment to **highly efficient electric alternatives would deliver cleaner air**, keeping major metro areas in attainment with federal ozone standards while delivering climate resilience, public health improvements and benefits to the state's electric grid.

- **A phased zero-emission air quality standard**, coupled with policies focused on increasing affordability and access to whole-home retrofits for low-income and middle-income households, **can dramatically accelerate the transition to electric alternatives**.

ENDNOTES

1. Emissions data from EPA, 2020 National Emissions Inventory. Appliance emission estimates include residential & commercial emissions for the gas, oil, & other fuel categories, with commercial emissions adjusted to exclude certain non-appliance sources like pipeline compressor stations.
2. Emissions data from EPA 2020 National Emissions Inventory; see note 1.
3. Md. Dept. of the Environment, State Implementation Plan, Mar. 7, 2023), https://mde.maryland.gov/programs/air/AirQualityPlanning/Documents/Baltimore%20Ozone%20NAA%2070ppm/Baltimore%20Moderate%20Nonattainment%20Area%20%200.070%20ppm%208-Hour%20Ozone%20State%20Implementation%20Plan%20Attainment%20Demonstration.pdf.
4. Based on RMI analysis using median estimates from the results of 3 reduced complexity models used in: Jonathan J. Buonocore et al., A Decade of The U.S. Energy Mix Transitioning Away from Coal: Historical Reconstruction of the Reductions in the Public Health Burden of Energy, 2021 Environ. Res. Lett. 16 054030, https://doi.org/10.1088/1748-9326/abe74c, as well as additional analysis from the study's lead author.
5. Analysis using EPA, CO-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA) with selected subsectors: commercial gas, commercial oil, and residential other.
6. Christopher W. Tessum et al., PM2.5 Polluters Disproportionately and Systemically Affect People of Color in the United States, Sci. Adv. 7:18, supplementary data file S2 (2021), https://www.science.org/doi/10.1126/sciadv.abf4491.
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9. https://www.nescaum.org/documents/Residential-Building-Electrification-Final-Report-August-2023.pdf.
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