American Lung Association

Comment in Support of Electrification and Climate-Health Regulatory Reform in HUD-Assisted Housing

The American Lung Association is submitting this comment to the Public Health Law Center for inclusion in the People's Docket related to the pending rulemaking petition urging HUD to modernize public housing standards to incorporate beneficial electrification, indoor air quality protections, and climate-resilient health and safety requirements pursuant to HUD's statutory and regulatory duties under 42 U.S.C. § 1437(f) and 24 C.F.R. § 5.703(a).[1][2] The following public health evidence and administrative considerations strongly support promulgation of the actions requested.

Public Health and Respiratory Risk Evidence Supports Regulatory Action

A substantial body of peer-reviewed literature demonstrates that combustion-based household appliances are a major source of indoor air pollution, including nitrogen dioxide (NO_2), carbon monoxide (CO), fine particulate matter ($PM_{2.5}$), ultrafine particles, benzene and formaldehyde.[3] Energy conservation standards, especially those that promote electrification and other measures to protect residents' health from climate change.[4] Energy-efficient building envelopes and effective ventilation systems reduce these exposures by limiting infiltration and improving airflow management.

These protections are especially consequential for residents of HUD-assisted housing, who experience overlapping vulnerabilities that magnify the health impacts of indoor air pollution.[5] Public housing residents are more likely to have pre-existing respiratory disease, live with

[1] 42 U.S.C. § 1437(f). https://codes.findlaw.com/us/title-42-the-public-health-and-welfare/42-usc-sect-1437d/
[2] 24 C.F.R. § 5.703(a). https://www.ecfr.gov/current/title-24/subtitle-A/part-5/subpart-G/section-5.703
[3] Jessica Balukas et al., Literature Review on the Impacts of Residential Combustion: Addendum to the 2022 Report (Apr. 2025), American Lung Ass'n & ICF, https://www.lung.org/getmedia/ce1e7bfa-db92-42a3-9ff4-3044324ec2c9/ICF_Impacts-of-Residential-Combustion_Addendum.pdf
[4] Karl A. Holden, Alice R. Lee, Daniel B. Hawcutt & Ian P. Sinha, The impact of poor housing and indoor air quality on respiratory health in children, 19 Breathe (Sheff.) 230058 (2023). https://publications.ersnet.org/content/breathe/19/2/230058
[5] Maria H. Monn & William H. Becker, (eds.), Indoor-Air Quality and Health, 110 J. Air Waste Mgmt. Ass'n 362 (1996), available at https://pmc.ncbi.nlm.nih.gov/articles/PMC3954449/

children or older adults, and experience higher cumulative environmental burdens, including proximity to major roadways and industrial pollution sources.[6] At the same time, HUD-assisted units are more likely to rely on older, inefficient combustion appliances, have inadequate ventilation, and lack the building's envelope integrity needed to prevent pollutant infiltration and moisture accumulation.[7]

Strengthening HUD standards to prioritize electrification and energy efficiency directly reduces reliance on indoor combustion for heating and cooking, while also improving thermal stability, ventilation performance and moisture control.[8] These improvements are particularly protective for individuals with asthma, COPD and other lung diseases for whom NO_2 exposure, dampness and temperature extremes are well-established triggers of exacerbations and emergency care utilization. In HUD-supported housing, where residents often cannot independently modify appliances or building systems, regulatory action is the primary mechanism for reducing these preventable health risks.

Measures that promote reducing energy consumption and associated emissions, electrification and other measures to protect residents' health from climate change in HUD-assisted housing can also contribute to regional improvements in ozone and particle pollution. These regulatory actions also reduce fossil fuel demand and associated emissions, yielding downstream public health benefits for individuals living in HUD-assisted housing and surrounding communities. Indoor air quality (IAQ) is inseparable from housing structure and system performance. Appliance type, building envelope integrity, HVAC configuration, moisture management and ventilation systems function as an integrated system that determines pollutant generation,

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[6] *Id.*

[7] C Zhao H. et al., Indoor Air Quality in New and Renovated Low-Income Apartments with Mechanical Ventilation and Natural Gas Cooking in California, 31 Indoor Air 717, 726–29 (2021) (demonstrating that most low-income multifamily units failed to meet ventilation code requirements and experienced elevated indoor NO_2 and $PM_{2.5}$ from combustion sources, with implications for asthma and respiratory morbidity); Underhill L.J. et al., Modeling the Resiliency of Energy-Efficient Retrofits in Low-Income Multifamily Housing, 28 Indoor Air 459, 468–70 (2018) (showing that energy efficiency measures implemented without corresponding ventilation and envelope upgrades can increase indoor pollutant concentrations, supporting the need for integrated housing standards); Colton M.D. et al., Indoor Air Quality in Green vs. Conventional Multifamily Low-Income Housing, 48 Envtl. Sci. & Tech. 7833, 7840–42 (2014) (finding significantly lower $PM_{2.5}$, NO_2, and mold indicators in affordable housing with improved ventilation and building envelope integrity, compared to conventional low-income housing

[8] Health in Partnership, Home Sick: Uncovering the Health Harms in Homes of America's Manufactured Housing Communities (July 25, 2025), https://cdn.prod.websitefiles.com/67cafbff6880dabe1f2342b0/686eb5bea0f3e6bf90310212_HOME%20SICK%20final%20july%2025.pdf

dilution and persistence indoors.[9] Research compiled in the DOE's own "Home Rx: The Health Benefits of Home Performance" illustrates that home energy upgrades, when paired with ventilation and moisture controls, can reduce asthma symptoms, limit exposure to mold and allergens and improve overall respiratory health.[10]

In HUD-assisted housing, fragmented or outdated standards that address appliances, energy efficiency and ventilation in isolation fail to adequately protect residents' health. Modernized standards that integrate electrification with HVAC upgrades, filtration and envelope improvements ensure that reductions in combustion-related emissions are not offset by inadequate airflow or increased indoor pollutant concentrations. A coordinated regulatory approach is therefore essential to realizing the full public health benefits of energy efficiency investments.

Climate Change Intensifies Indoor Lung Disease Burden

Climate-driven extreme heat events, wildfire smoke episodes, and longer allergy seasons are increasing both time spent indoors and indoor pollutant loads. Indoor pollution exposures are therefore no longer episodic—they are structural and chronic. Heat exposure alone is associated with increased pulmonary inflammation, airway hyperreactivity and heightened mortality risk among older adults, individuals with asthma and people with cardiopulmonary disease.

Public housing residents, who disproportionately include low-income households, older adults, renters with disabilities and communities of color, face significantly increased baseline respiratory vulnerability while also being more likely to reside in buildings lacking air conditioning, mechanical ventilation, or high-efficiency particulate filtration.[11] Without standards that support appliance and home electrification and modern HVAC deployment that includes appropriate upgrades to filter out pollution and reduce mold growth, HUD cannot

[9] 8 U.S. Department of Energy, Home Rx: The Health Benefits of Home Performance – A Review of the Current Evidence (Dec. 2016), https://www.energy.gov/sites/prod/files/2016/12/f34/Home%20Rx%20The%20Health%20Benefits%20of%20Home%20Performance%20-%20A%20Review%20of%20the%20Current%20Evidence.pdf

[10] *Id.*

[11] Evan Lemire, Sophia Carryl, S.V. Subramanian & Adam L. Haber, The Role of Housing Markets in Producing Respiratory Health Disparities, 51 Lancet Reg'l Health–Am. 101228 (2025), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC12664648/.

adequately mitigate climate-driven respiratory harms, including heat-related emergency department visits, asthma exacerbations and COPD morbidity.

Administrative Obligations Under HUD Authority Require Action

HUD has clear statutory and regulatory duties to ensure that assisted housing is "decent, safe, sanitary, and in good repair" (24 C.F.R. § 5.703(a)). Additionally, HUD's environmental review regulations further require that properties be free of hazardous chemicals and gases "where a hazard could affect the health and safety of occupants" (24 C.F.R. § 58.5(i)(2)(i)). Due to the demonstrated health impacts of fossil fuel combustion, appliances relying on fossil fuels constitute a preventable source of hazardous exposure, particularly for vulnerable populations residing in assisted housing.[12]

The petition's recommended actions for HUD are expected to result in:

- Substantial NO_2 and $PM_{2.5}$ reductions, lowering asthma incidence, symptom severity, and hospitalization rates;
- Elimination of CO exposure pathways, preventing poisoning events and associated neurocognitive harm;
- Improved thermal stability, reducing heat-related morbidity and mortality risk;
- Reduced mold and dampness burden, reducing fungal sensitization, bronchitis, and airway inflammation;
- Decreased healthcare expenditures, consistent with long-term economic modeling findings referenced by petitioning organizations;
- Lower household energy burdens, improved resident financial stability and reduce health-damaging tradeoff stressors known to influence disease risk.

These changes are consistent with health protection guidance from respiratory medicine associations, public health agencies, and federally funded climate-health projections.[13]

[12] Physicians for Social Responsibility, Fueling Sickness: The Hidden Health Costs of Fossil Fuel Pollution (Nov. 5, 2025), https://psr.org/resources/fueling-sickness-the-hidden-health-costs-of-fossil-fuel-pollution/

[13] Comment on EPA's Interim Framework for Advancing Consideration of Cumulative Impacts, Docket ID No. EPA-HQ-OLEM-2024-0360 (Jan. 17, 2025), https://www.lung.org/getmedia/82eaf17a-d763-4668-9ff0-8c07e3bbdb94/ALA_Partners_EPA_CumulativeImpactsFRamework_012025.pdf; Comment on ASHRAE Guideline 44P, "Protecting Building Occupants from Smoke During Wildfire and Prescribed Burn Events" Second Public Review Draft (Aug. 2, 2024), https://www.lung.org/getmedia/6fcefe06-0a74-4842-90ef-0b2a25cea5f7/Comment_ASHRAE_WildfireSmokeIAQ_08022024-(2).pdf

Conclusion

Residents of HUD-assisted housing experience disproportionate environmental exposures due to historic redlining, zoning inequities and pollution siting patterns. Without electrification and indoor air quality modernization, assisted housing will continue to perpetuate preventable exposure disparities—undermining HUD's statutory mission and environmental justice obligations.

Health organizations have repeatedly urged federal agencies to address indoor combustion and climate-related housing risks through enforceable standards, emphasizing the urgent need for action in subsidized housing where residents lack control over building conditions. These consensus views reinforce the strong scientific and administrative basis for HUD rulemaking. Given the overwhelming scientific evidence linking indoor fossil fuel combustion to acute and chronic respiratory harm, the escalating climate-driven health burden, and HUD's regulatory duty to ensure safe and health-protective housing conditions, the American Lung Association urges HUD to initiate rulemaking to modernize assisted housing standards without delay. Electrification and climate-resilience requirements are not just optional infrastructure upgrades—they are essential, evidence-based public health protections that align with HUD's statutory mission and federal directives.

HUD has clear authority, administrative precedent, and scientific justification to act. Delays will prolong preventable disease, economic hardship, and climate-exacerbated morbidity.

Thank you for your consideration.

The American Lung Association