September 3, 2024

Sandra L. Thompson
Director, Federal Housing Finance Agency
Constitution Center
400 7th Street, SW
Washington, D.C. 20219

Dear Director Thompson:

The undersigned health organizations urge you to adopt strong energy efficiency standards for all new homes with mortgages backed by Fannie Mae and Freddie Mac. Many of the undersigned health organizations previously commented in support of updated energy efficiency requirements for federally financed housing at the Department of Housing and Urban Development and the Department of Agriculture. We urge FHFA to build on the work of these agencies by implementing its own energy efficiency standards at least as stringent as HUD's and USDA's (2021 IECC and ASHRAE 90.1-2019).

We appreciate your agency's stated commitment to make sound decisions considering the risks posed by climate change. Our organizations acknowledge the science showing that climate change is a health emergency. Improving energy efficiency in homes is important for addressing climate change. Reducing demand for energy produced by polluting power plants will reduce emissions from these sources that drive climate change and harm human health.

Energy efficiency measures are also important for reducing emissions from fuel-burning appliances in homes. Methane gas, propane and wood burning appliances such as stoves, water heaters, furnaces, fireplaces, and clothes dryers emit combustion pollutants and contribute to both indoor and outdoor air pollution.

These health effects of burning methane, wood, and other fuels in homes are numerous. Byproducts from methane combustion such as nitrogen oxides contribute to premature mortality[1] and increased risk for illness including ischemic heart disease, stroke, COPD, lung cancer, type 2 diabetes, and lower-respiratory infections.[2] There is a growing body of evidence showing an association between long-term exposure to air pollution and adverse birth outcomes.[3] Short-term exposure to high levels of air pollution can exacerbate asthma and cardiopulmonary symptoms.[4] Burning fuels in appliances can also produce carbon monoxide and particulate matter. Particulate matter has a wide range of health effects ranging from cardiovascular impacts to adverse birth outcomes to neurological and metabolic impairments as

well as causing premature death.[5] Carbon monoxide is a harmful air pollutant that can cause headache, fatigue, nausea, brain and heart damage, unconsciousness, and death.[6] When inhaled, fine particulate matter penetrates deep in the lungs which sets off a cascade of inflammatory reactions in the body. These reactions affect proper heart function and can cause arrhythmia and increase the risk of heart attacks.

Venting appliances to the outside mitigates some of the potential health impact of exposure indoors. However, emissions stay within the atmosphere and contribute to the health impacts of outdoor air pollution and to climate change. Residential and commercial emissions made up 13% of total U.S. global warming emissions in 2020, mostly from methane gas and heating oil.[7] Under some conditions, wood smoke from indoor burning contributes substantially to the local air pollution and can greatly increase the amount of particulate matter in the area.

We therefore urge the FHFA to follow HUD and USDA by adopting strong energy efficiency standards for all new homes backed by Fannie Mae and Freddie Mac. These steps will help protect the health of residents and address the health emergency of climate change.

Signed,

American Lung Association

American Public Health Association

Climate Psychiatry Alliance

The Medical Society Consortium on Climate and Health

Medical Students for a Sustainable Future

Physicians for Social Responsibility

Public Health Institute

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[1] Singer BC, Pass RZ, Delp WW, Lorenzetti DM, Maddalena RL. Pollutant concentrations and emission rates from natural gas cooking burners without and with range hood exhaust in nine California homes. *Building and Environment*. 2017;122:215-229. doi:10.1016/j.buildenv.2017.06.021

[2] Roda C, Kousignian I, Guihenneuc-Jouyaux C, et al. Formaldehyde Exposure and Lower Respiratory Infections in Infants: Findings from the PARIS Cohort Study. *Environmental Health Perspectives*. 2011;119(11):1653-1658. doi:10.1289/ehp.1003222

[3] U.S. EPA, Integrated Science Assessment (ISA) for Particulate Matter (Final Report, 2019). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-19/188, 2019. Available at https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=347534

[4] Tiotiu AI, Novakova P, Nedeva D, Chong-Neto HJ, Novakova S, Steiropoulos P, Kowal K. *Impact of Air Pollution on Asthma Outcomes*. Int J Environ Res Public Health. 2020 Aug 27;17(17):6212

[5] U.S. EPA, Integrated Science Assessment (ISA) for Particulate Matter (Final Report, 2019). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-19/188, 2019. Available at https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=347534

[6] United States Environmental Protection Agency. *Carbon Monoxide's Impact on Indoor Air Quality*. July 31, 2014. available at: https://www.epa.gov/indoor-air-quality-iaq/carbon-monoxides-impact-indoor-air-quality

[7] United States Environmental Protection Agency, Total U.S. Greenhouse Gas Emissions by Economic Sector in 2021 available at https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions.