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Chair Delgado & Members of the Governing Board
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Proposed Amended Rules 1111 and 1121 – Strong Support for this Regulation and its Benefits for Improved Air Quality and Health Outcomes

On behalf of the Green & Healthy Homes Initiative, the nation's largest healthy housing organization, I write in support of Proposed Amended Rules (PARs) 1111 and 1121 as critical measures to reduce emissions of Nitrogen Oxide (NO_x) and other harmful pollutants. The phasing out of combustion appliances and phasing in of zero emission appliances will result in cleaner air and healthier communities in the South Coast Air Quality Management District.

The Green & Healthy Homes Initiative's mission and work is focused on creating healthy housing for all Americans to eliminate health inequities caused by the unhealthy housing generated over decades of unjust housing policies, address the social determinants of health, and advance health and racial equity in low-income communities of color. Founded in 1986 to address the toxic legacy of lead on Baltimore's children, GHHI led the advocacy for legislation, policies, and direct service programs which resulted in a 99% decline in childhood lead poisoning in Maryland. As the organization evolved, it expanded the mission towards advocating for a holistic comprehensive approach to delivering whole house interventions as the most equitable approach to achieving public health goals related to all environmental and behavioral hazards in the home.

Through its direct services, research, and policy work, GHHI is a proven leader in promoting the health, economic and social benefits of upgrading existing housing through comprehensive interventions that deliver healthy, safe and energy efficient housing for low-income residents. GHHI is dedicated to addressing the social determinants of health and the advancement of racial and health equity through the creation of healthy, safe and energy efficient homes. By delivering a standard of excellence in its work, GHHI aims to eradicate the negative health impacts of unhealthy housing and unjust policies for children, seniors, and families to ensure better health, economic and social outcomes with an emphasis on black and brown low-income communities. GHHI is advocating for you to improve a key social driver of health – appliance pollution - by advancing PARs 1111 and 1121.

Combustion of fossil fuels in homes and businesses in the region releases over 13,000 tons of nitrogen dioxide and more than 1,200 tons of fine particulate matter each year according to the EPA.¹ These pollutants are harmful to human health.

NO_x emissions are associated with a range of harmful health impacts for those exposed to elevated concentrations, including aggravation of respiratory diseases that can cause acute medical episodes (such as asthma-related hospitalizations and emergency room visits) for short term exposures and increased risk of the development of asthma and susceptibility to respiratory infections for long term exposures.² Studies across the country have found disproportionate exposure among communities of color to NO_x emissions as well as other air pollutants.^{3,4} Studies show consistent associations between higher pollution levels and detrimental respiratory effects in children from exposure to pollutants, including worse lung function for children with asthma.⁵

PARs 1111 and 1121 would result in the reduction and elimination of air pollution from homes and businesses that pose risks to both the environment and human health. These rules would also protect the health of the most vulnerable populations at increased risk for the cardiovascular health effects associated with exposure to indoor particulate matter including children with asthma, elderly adults, and adults with asthma, chronic obstructive pulmonary disease (COPD), and heart disease.⁶ Avoidance of harmful exposures is a key component of national and international guideline recommendations for management of asthma.⁷

While combustion appliances pose health and environmental risks, zero emissions appliances for space and water heating are a safe and proven technology for households. Specifically, heat

¹ <https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data>

² Orellano, P., Reynoso, J., Quaranta, N., Bardach, A., & Ciapponi, A. (2020). Short-term exposure to particulate matter (PM₁₀ and PM_{2.5}), nitrogen dioxide (NO₂), and ozone (O₃) and all-cause and cause-specific mortality: Systematic review and meta-analysis. *Environment international*, 142, 105876. <https://doi.org/10.1016/j.envint.2020.105876>

Huangfu, P., & Atkinson, R. (2020). Long-term exposure to NO₂ and O₃ and all-cause and respiratory mortality: A systematic review and meta-analysis. *Environment international*, 144, 105998. <https://doi.org/10.1016/j.envint.2020.105998>

³ Gallagher, C. L., & Holloway, T. (2022). US decarbonization impacts on air quality and environmental justice. *Environmental Research Letters*, 17(11), 114018.

⁴ Tessum, C. W., Paoletta, D. A., Chambliss, S. E., Apte, J. S., Hill, J. D., & Marshall, J. D. (2021). PM_{2.5} polluters disproportionately and systemically affect people of color in the United States. *Science advances*, 7(18), eabf4491. <https://doi.org/10.1126/sciadv.abf4491>

⁵ Belova, A., Dagli, R., Economu, N., Hartley, S., Holder, C., & Hubbard, H. (2022). Literature review on the impacts of residential combustion final report. https://www.lung.org/getmedia/2786f983-d971-43ad-962b-8370c950cbd6/ICF_Impacts-of-Residential-Combustion_FINAL_071022.pdf

⁶ Global Initiative for Asthma. GINA Workshop Report: Global Strategy for Asthma Management and Prevention.; 2006.

⁷ National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma.: National Institutes of Health, US Department of Health and Human Services; Full Report 2007. NIH Publication No. 07-4051. Global Initiative for Asthma. GINA Workshop Report: Global Strategy for Asthma Management and Prevention.; 2006.

pumps are a zero-emission space heating technology that is 2.2 to 4.5x more efficient than ENERGY STAR gas furnaces on an annual basis. Heat pumps have no onsite emissions, and replacing gas furnaces with heat pumps in California would reduce building space heating emissions in the first year by 72%.⁸ The viability of heat pumps as a healthy and efficient technology for space heating makes addressing appliance pollution an attractive target for primary disease prevention. These rules will help mitigate harmful exposures to pollutants.

In conclusion, by passing PARs 1111 and 1121, the Air District will improve air quality, health outcomes, and environmental justice in the South Coast Region.

Sincerely,

Brendan Brown

Director of Research

Green & Healthy Homes Initiative

⁸ <https://rmi.org/now-is-the-time-to-go-all-in-on-heat-pumps>