



January 07, 2022

Chair Liane Randolph  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

**RE: Comments on California Air Resources Board's Development of the 2022 Scoping Plan Update**

On behalf of the undersigned organizations, we appreciate the opportunity to provide comments on the California Air Resources Board's (CARB) 2022 Scoping Plan Update.

First, we want to elevate the need to prioritize environmental justice communities and workers in the transition to clean all-electric buildings. We also want to recognize the importance of uplifting leadership from local and regional work that community organizations, local governments and local air districts are currently leading. It will be important to ensure there is coordination between the local and regional work happening and a broader statewide effort to provide the support necessary for this transition to be equitable.

As detailed below, we thank CARB for including in its Scoping Plan Update a scenario where all new buildings use electric appliances by 2026, 100% all-electric appliance sales for all buildings by 2030, and all buildings retrofitted to electric appliances by 2035 (option A), which we believe is the most certain and cost-effective pathway to achieve California's climate goals, in line with science-based climate targets.

We also agree with the numerous environmental justice organizations who submitted a letter on September 17, 2021 regarding the Scoping Plan scenarios, in particular with the comments that were made regarding the building decarbonization scenario. As such, we want to collaborate with CARB on creating a ***comprehensive roadmap to implement this scenario to equitably decarbonize California's new and existing buildings and prioritize environmental justice communities and good jobs in this transition.*** This will require that building decarbonization protects low-income

households against harm such as increased energy or rent burden or displacement, ensures that clean appliances are affordable and accessible to all, and creates high-road jobs and careers to install and maintain them.

### **CARB Must Prioritize Equitable Building Decarbonization**

Buildings are responsible for 25 percent of greenhouse gas (GHG) emissions in California.<sup>1</sup> Direct emissions from the combustion of fossil fuels in buildings, primarily for space and water heating, accounts for 10 percent of all GHG emissions in the state, not including upstream fugitive emissions associated with methane used in buildings.<sup>2</sup> That's more than the emissions from each category of heavy duty vehicles, in-state electricity generation, high global warming potential gases, agriculture, waste and recycling, or oil and gas extraction, several of which have been the focus of CARB's Scoping Plan.<sup>3</sup> Although all sectors are important to reach our GHG emissions goals, the building sector stands out because it is still in the appendix rather than part of the main plan.

Not only is building electrification essential to meeting decarbonization goals, it also has the potential for substantial benefits for health and air quality, equity and environmental justice, economic development and high-road careers, housing affordability, and climate resilience. Fossil fuel appliances are now one of the primary contributors to outdoor and indoor air pollution and related health harms. These appliances emit 65 tons of nitrogen oxides (NOx) statewide per day – more than four times as much as power plants.<sup>4</sup> Indoors, gas stoves expose as many as 12 million Californians to pollution that exceeds outdoor national NOx standards in a typical winter week, in addition to other pollutants like carbon monoxide, fine particulate matter, and the carcinogen formaldehyde.<sup>5</sup> Children who live in homes with gas stoves are 42 percent more likely to experience asthma symptoms and 24 percent more likely to be diagnosed with asthma.<sup>6</sup> Electrifying stoves and other appliances can help eliminate these health impacts being borne by Californians.

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<sup>1</sup> Cal. Energy Comm'n, *Final Commission Report: California Building Decarbonization Assessment 1* (Aug. 2021),

<https://www.energy.ca.gov/publications/2021/california-building-decarbonization-assessment>.

<sup>2</sup> Cal. Air Res. Bd., *California Greenhouse Gas Emissions for 2000 to 2018: Trends of Emissions and Other Indicators 6*,

[https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2018/ghg\\_inventory\\_trends\\_00-18.pdf](https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2018/ghg_inventory_trends_00-18.pdf).

<sup>3</sup> *Id.*

<sup>4</sup> Cal. Air Res. Bd., 2022 State Strategy for the State Implementation Plan: Draft Measures Workshop 96 (Oct. 19, 2021),

[https://ww2.arb.ca.gov/sites/default/files/2021-10/2022\\_SSS\\_October\\_Workshop\\_Presentation.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-10/2022_SSS_October_Workshop_Presentation.pdf)

<sup>5</sup> *Id.* at 6, 14. The study found that emissions from gas stoves and ovens exceeded state outdoor NOx standards in 90% of the scenarios modeled.

<sup>6</sup> Weiwei Lin et al., Meta-Analysis of the Effects of Indoor Nitrogen Dioxide and Gas Cooking on Asthma and Wheeze in Children, 42 *Int'l J. Epidemiology* 1724 (Dec. 2013).

While gas appliance pollution impacts all Californians, it does not impact everyone equally. Disproportionately, communities of color in California are exposed to more outdoor particulate matter formed from residential gas appliance emissions.<sup>7</sup> Gas appliances worsen the cumulative impact and localized air pollution being unfairly borne by environmental justice communities. Environmental justice communities are more likely to live in older, smaller, less ventilated and more crowded homes, and use gas cooking equipment for space heating<sup>8</sup>, exacerbating inequities and damaging their health, safety, and economic well-being on top of being in the frontlines of climate change. Costs associated with climate change will continue to impact environmental justice communities disproportionately, and the Scoping Plan Update needs to put environmental justice at the forefront and reduce all sources of pollution, including those inside the home.

An equitable transition to all-electric buildings will also lead to communities at the frontlines of the climate crisis being more resilient to extreme weather.<sup>9</sup> The transition to all-electric HVAC also has the potential to provide cooling for households that do not currently have it (since heat pumps provide both heat and cooling) or to provide a more efficient source of cooling, which will help Californians cope with increasing temperatures due to climate change. Modern, flexible, grid-interactive electric buildings will also help maintain reliability and increase the efficiency and resilience of California's electricity system through their demand flexibility capabilities.

Although electric appliances alone will not guarantee every source of pollution is removed from the home, it is an important step in the right direction for equity and public health. With stoves and other gas appliances contributing to indoor air pollution with harmful NO<sub>x</sub> levels and formaldehyde emissions, it is critical to have clear targets to transition all homes to all-electric appliances. A plan with equity protections and ambitious, but achievable, equity benchmarks is not only urgent to build climate-resilient infrastructure but also to protect Californians' public health.

## **Recommendations and Considerations**

As CARB takes a two-pronged approach for both new and existing residential and commercial buildings to be electrified, it should pair this action with creating a ***comprehensive roadmap to implement this scenario to equitably decarbonize California's building stock and prioritize environmental justice communities and***

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<sup>7</sup> Christopher W. Tessum et al., PM<sub>2.5</sub> pollutants disproportionately and systemically affect people of color in the United States, 7 *Sci. Adv.* eabf4491, supplementary data file S2 (2021), <https://advances.sciencemag.org/content/suppl/2021/04/26/7.18.eabf4491.DC1>.

<sup>8</sup> Zhu et al., Effects of Residential Gas Appliances at 16-17, 23-26.

<sup>9</sup> E3, *Advancing Carbon Neutrality in California: PATHWAYS Scenarios Developed for the California Air Resources Board* 34 (Oct. 2020), [https://ww2.arb.ca.gov/sites/default/files/2020-10/e3\\_cn\\_final\\_report\\_oct2020\\_0.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-10/e3_cn_final_report_oct2020_0.pdf).

**good jobs in this transition.** The goal should be to have healthy and resilient homes for all Californians, and target investments in environmental justice communities first.

Building from the work being led locally by community members and community-based participatory organizations, and the September 17, 2021 comments made by EJAC, we've proposed some additional questions and potential solutions that a comprehensive roadmap should address in the goal of creating Healthy & Resilient Homes for All Californians. In order to create a pathway to building decarbonization it will be important to support programs that take a holistic approach to building electrification, such as the Low Income Weatherization Program, which couple energy efficiency modifications with home safety improvements and home rehabilitation.

### **Financial Challenges & Affordability**

Although there is evidence from a recent E3 study that found that all-electric new construction resulted in lifecycle savings for all California single-family and low-rise multi-family homes that install both air conditioning and space heating,<sup>10</sup> there needs to be a concurrent path and a plan that ensures environmental justice communities do not pay higher upfront costs or operating costs in both new construction and existing buildings.

#### **Potential solutions could include but are not limited to:**

- 1. Prioritize investments for households and communities who need it most.** Low-income households who are the most burdened by rent and energy costs, and can least afford electrification, must be prioritized in decarbonization investments. Electrification done right (i.e., energy efficiency improvements coupled with clean, efficient, and flexible appliances) can significantly reduce energy costs compared to gas, and slash them by 50 percent or more when paired with rooftop solar. If we don't start with these communities, they also risk being left behind as they won't be able to afford to transition, or are renters who don't control appliance choices.
- 2. In parallel, prioritize investments on buildings and appliances that will have the greatest impact on cost reductions.** This is critical because we cannot incentivize our way to retrofitting the entire building stock. Current TECH, BUILD, SGIP program budgets will only touch tens of thousands of buildings when more than a million heating and water heating appliances get replaced every year. This does not provide industry the long line of sight they need to invest. The only way to scale decarbonization to the entire building stock is to bring down the cost of clean technologies so that they become affordable and accessible to all

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<sup>10</sup> E3, Residential Building Electrification in California 79 (Apr. 2019), [https://www.ethree.com/wp-content/uploads/2019/04/E3\\_Residential\\_Building\\_Electrification\\_in\\_California\\_April\\_2019.pdf](https://www.ethree.com/wp-content/uploads/2019/04/E3_Residential_Building_Electrification_in_California_April_2019.pdf).

Californians, and limited public investments can have a large impact. Some of the major opportunities to jump start cost reductions include, amongst others, new construction, electric resistance and propane appliances, and air-conditioner changeouts and replacements with heat pump ACs.

3. **Set emissions standards designed to advance decarbonization in a manner that protects low-income populations from harm**, through approaches such as pairing standards with renter protections and funding to ensure no extra cost for low-income households, appropriate lead time and ramp up, and equity benchmarks and reviews that gate implementation.<sup>11</sup>
4. **Work with the California Public Utilities Commission, utilities, and Community Choice Aggregators to design new utility rates that enable equitable and more affordable building electrification.** Re-designing electrical rates will be key to ensuring low income and environmental justice customers are reaping the benefits of clean appliances. This will require continuing to work with the entities involved to bring this goal to fruition.
5. **Concurrently work with the Legislature, California Energy Commission, California Public Utilities Commission, utilities, and Community Choice Aggregators to develop a suite of direct install/point of sale incentives and financing programs** (combining grants with accessible finance mechanisms) to offer realistic and long-term financing mechanisms that leverage public and private funds ([read more about potential financing mechanisms here](#)). Additional examples include a “Cash for Clunkers” appliance program that incentivizes households to switch out older gas appliances near their end of life but before an emergency or place a fee on manufacturers that do not meet clean air and GHG targets and ramp the fee up over time that could be directed to support low income and environmental justice communities.

### **Rent & Displacement**

Because of the cost of living in California, there is concern that any building upgrade could result in a rent increase or displacement. Therefore, the Scoping Plan must assess risks by connecting with tenants and other housing advocacy groups to ensure that small and large affordable housing buildings have the tools to implement this change and meet the targets set out in Option A so they are not left behind. At a minimum, any program design that will be deploying clean appliances should also explicitly incorporate tenant protections and anti displacement strategies and requirements.

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<sup>11</sup> RMI, “How Air Agencies Can Help End Fossil Fuel Pollution from Buildings,” November 2021, <https://rmi.org/insight/outdoor-air-quality-brief>

**Potential solutions include but are not limited to:**

1. Assess the risk, based on feedback from relevant stakeholders, such as tenants unions and other tenant advocacy groups.
2. Mirror California’s Low-Income Weatherization Program and its strategy to require property owners to sign an affidavit to ensure rent will not be increased and tenants will not be evicted following home upgrades.
  - a. For extremely large projects in low-income communities, requiring a deed restriction for several years following the project could be appropriate.
3. Explore additional tenant protections and anti-displacement strategies and requirements for any program that deploys clean appliances in partnership with relevant stakeholders.

**Conclusion**

It is critical to start decarbonizing both new and existing buildings as soon as possible to minimize costs, maximize benefits to public health, to the climate, the economy, and to clean air goals, while ensuring all residents of California have the financial support they need to make the transition.

When done right, building decarbonization can equitably provide significant benefits in terms of affordability, quality of life, and public health to vulnerable Californians that need these benefits the most. By being proactive and getting it right at the get-go, we can advance energy democracy and avoid placing more barriers and burdens on low-income and environmental justice communities. A comprehensive roadmap that puts environmental justice communities first will be critical to ensuring we are equitably decarbonizing California’s building stock.

We thank CARB for its leadership on these issues. We look forward to continuing to work with you on this, and help set California up for success to achieve its climate commitments.

Sincerely,

Leah Louis-Prescott  
RMI

Lauren Cullum  
Sierra Club California

Pierre Delforge  
Natural Resources Defense Council

Amee Raval  
Asian Pacific Environmental Network

Andrew Brooks  
Association for Energy Affordability