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**RMI, Earthjustice, Sierra Club Comments on Title 24 2022 Express  
Terms**

*Additional submitted attachment is included below.*



Docketed in 19-BSTD-03

March 9, 2021

**Re: Comments on Pre-Rulemaking Express Terms for 2022 Energy Code Update  
(Docket No. 19-BSTD-03)**

Commissioners and Staff:

Earthjustice, RMI, Sierra Club and \_\_\_\_ submit the following comments on the Pre-Rulemaking Express Terms for 2022 Update to Energy Code (“Energy Code”).<sup>1</sup> Our organizations commend the California Energy Commission’s (“Commission” or “CEC”) responsiveness to stakeholder concerns following the January 26th Workshop. The Commission incorporated a number of key improvements to the proposal. For example, the inclusion of heat pump water heaters (“HPWHs”) in the baseline for additional Southern California climate zones will help achieve significant air quality, public health and climate benefits. In addition, the revised code language requiring the space, plumbing, and electrical connections necessary for future HPWH installation eliminates a key barrier to future decarbonization.

While the changes to the proposed Energy Code are a step forward, we urge the Commission to go further. This past summer, Governor Gavin Newsom recognized that “across the entire spectrum, our goals are inadequate.” Indeed, a recent analysis by Energy Innovation found that California is not on track to meet its 2030 GHG reduction requirements and recommended accelerated building electrification among the suite of policies to achieve needed additional emissions reductions.<sup>2</sup> While an improvement, the current proposal in the Express Terms fails to meet the urgency of the moment.

We know that all-electric buildings are cheaper to construct. RMI’s research on the *The Economics of Electrifying Buildings* found that in Oakland it cost \$2,700 less to construct an all-electric single-family home than a mixed-fuel home.<sup>3</sup> The report *2019 Energy Efficiency Ordinance Cost-Effectiveness Study*, prepared for the California Energy Codes and Standards

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<sup>1</sup> Dkt. No. 19-BSTD-03, TN Nos. 236874-236877 (Feb. 22, 2021).

<sup>2</sup> Energy Innovation, Insights from the California Energy Policy Simulator (Jan. 2020), <https://energyinnovation.org/wp-content/uploads/2020/01/Insights-from-the-California-Energy-Policy-Simulator.pdf>.

<sup>3</sup> Billimoria et al., RMI, *The Economics of Electrifying Buildings: How Electric Space and Water Heating Supports Decarbonization of Residential Buildings* (2018) at 29 <https://rmi.org/insight/the-economics-of-electrifying-buildings/>.

Program by Frontier Energy, evaluated the cost effectiveness of code compliance package options for both mixed-fuel and all-electric homes across all sixteen California climate zones. The report concluded that the all-electric code compliance option was cost effective in every climate zone when using time dependent valuation (TDV).<sup>4</sup> Why delay in taking climate action when it is well documented that this will be *less* expensive?

We know that all-electric buildings are healthier for occupants. Research has found that children living in homes with gas stoves are at a 42% higher risk of experiencing asthma symptoms compared to children living in homes with electric stoves, and having a gas stove increases the risk of being diagnosed with asthma by a doctor by 24%.<sup>5</sup> Additionally, in 2016, the Environmental Protection Agency (EPA) made the conclusive finding that short-term exposure to nitrogen dioxide has a causal relationship to respiratory effects, including the development of asthma.<sup>6</sup> The differentiated ventilation requirements proposed are a good step forward in reducing the health impact of gas stoves on occupants, but the CEC should go even further and require all electric appliances in their performance and prescriptive baselines. Studies consistently show that people frequently do not use ventilation while cooking. In California specifically, recent surveys suggest that less than 40% of occupants report using their range hoods or open windows while cooking. Additionally, LBNL's presentation to the CEC showed that, in practice, people actually use their range hoods half as much as they report - so the number of Californians that use their hood is likely closer to 20% rather than 40%.<sup>7</sup> Thus, relying on occupants to adjust their behavior to reduce indoor pollutant concentration—whether through turning on ventilation or opening windows—is a highly fallible mitigation strategy.

We know that all-electric buildings will reduce emissions. Waiting three more years would not only miss an opportunity to unleash a faster, cheaper way to build housing in the Golden State, it would cost Californians \$1 billion in unnecessary gas infrastructure, and lock them into 3 million tons of additional carbon emissions by 2030.<sup>8</sup>

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<sup>4</sup> California Energy Codes & Standards, *2019 Cost-effectiveness Study: Low-Rise Residential New Construction*, at 41-42 (2019),

<https://srcity.org/DocumentCenter/View/25380/2019-State-Cost-Effectiveness-Study-forResidential-Reach-Codes> . See also RMI, Technical Comments Regarding Pre-Rulemaking for the California 2022 Energy Code Compliance Metrics, Docket # 19-BSTD-03, TN#235556 (filed Nov. 10, 2020)

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=235556&DocumentContentId=68478>

<sup>5</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. of Epidemiology* 1724, 1728 (2013), available at <https://doi.org/10.1093/ije/dyt150>.

<sup>6</sup> U.S. EPA, *Integrated Science Assessment (ISA) For Oxides of Nitrogen – Health Criteria*, tbl. ES-1 at p. lxxxii (Final Report, 2016), <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310879>. See also RMI, Technical Comments Regarding Pre-Rulemaking for the California 2022 Energy Code Compliance Metrics, Docket # 19-BSTD-03, TN#234934-1 (filed Sep. 28, 2020)

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=234934-1&DocumentContentId=67796>

<sup>7</sup> LBNL, Technical Comments Regarding Pre-Rulemaking for the California 2022 Energy Code Compliance Metrics, Docket # 19-BSTD-03, TN#235047 (filed Oct. 6, 2020)

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=235047&DocumentContentId=67939>

<sup>8</sup> RMI, California Can't Wait on All-Electric New Building Code (July 28, 2020),

<https://rmi.org/california-cant-wait-on-all-electric-new-building-code/>

We agree with NRDC that the Commission should incorporate the improvements suggested by NRDC in their pre-rulemaking comments. For example, because Climate Zone 10 also uses water heating as its primary gas source, the CEC should also require HPWHs to be in the baseline for this climate zone. In addition, because the prescriptive pathway is used more frequently for multifamily buildings, it is important that the CEC include a prescriptive path for heat pump space heating in all climate zones. Finally, while we appreciate the improved electric requirements for smaller schools under 25,000 sq ft, all schools should be fossil free to provide a healthy and safe learning environment. Since June 2019, the University of California has prohibited on-site fossil fuel combustion in all new buildings and in major renovations.<sup>9</sup> Californians K-12 students deserve no less.

More broadly we urge the CEC to make electric appliances the default for all new construction. This is not the time for half-measures. All-electric new construction is a low-hanging climate mitigation strategy that California should adopt now to realize the significant public health, air quality and climate benefits of all-electric buildings and allow the Commission and local governments to singularly focus its resources on equitable electrification of the existing built environment.

Thank you for your consideration of these comments and we welcome the opportunity to further discuss our concerns.

Respectfully submitted,

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<sup>9</sup> University of California UC sets higher standards, greater goals for sustainability (Sept. 4, 2018), <https://www.universityofcalifornia.edu/press-room/uc-sets-higher-standards-greater-goals-sustainability>