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Public health & air quality professionals call for all-electric energy code in 2022 Building Energy Efficiency Standards

Seven organizations and fifteen individuals, representing 42,577 public health and air quality professionals call on the CEC to safeguard public health by adopting an all-electric energy code for 2022.

Additional submitted attachment is included below.

July 31, 2020

California Energy Commission
Docket Office, MS-4
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Re: Public Health and Air Quality Professionals Call for an All-Electric Energy Code in the 2022 Building Energy Efficiency Standards (Docket No. 19-BSTD-03)

Dear Commissioners and Staff:

As a group of public health and air quality professionals, we appreciate the opportunity to comment on the California Energy Commission's ("CEC" or "Commission") 2022 Building Energy Efficiency Standards. We represent seven organizations as well as fifteen individual experts and professionals: Alliance of Nurses for Healthy Environments (5,000), Climate Code Blue (20), Climate Health Now (342), Health Care Without Harm, Physicians for Responsibility-National (33,000), Physicians for Responsibility-Sacramento Chapter (700), Physicians for Social Responsibility- San Francisco Bay Chapter (3,500). Six of the seven organizations are membership-based, comprising 42,220 members/activists, plus fifteen individual experts and professionals for a total of 42,577.

Exposure to air pollution is now the greatest environmental health risk factor for early death, responsible for between 100,000 – 200,000 annual deaths.[1] In the transport, industrial, and power generation sectors, regulation has dramatically decreased emissions.[2] Conversely, the lack of regulation of the building sector has meant that buildings are now the leading cause of premature death from combustion emissions (particulate matter and ozone).[3] Burning gas in buildings contributes to air pollution both indoors and outdoors. **In designing its building energy efficiency standards for new construction, the CEC should safeguard the public health of Californians by adopting an all-electric energy code for the 2022 cycle.**

Burning gas in homes can release more nitrogen oxides ("NOx") and carbon monoxide ("CO") inside than the U.S. Environmental Protection Agency allows

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[1] Sumil K. Thakrar et al., *Reducing mortality from air pollution in the United States by targeting specific emission sources*, ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS, July 2020, *available at* https://pubs.acs.org/doi/10.1021/acs.estlett.0c00424
[2] Irene C. Dedoussi, et al., *Premature mortality related to United States cross-state air pollution*, 578 NATURE 264 (2020), *available at* https://doi.org/10.1038/s41586-020-1983-8.
[3] *See id.*

outdoors.[4] According to a study by Lawrence Berkeley National Laboratory, 12 million Californians in homes with gas stoves breathe levels of NOx that would be illegal outdoors, while 1.7 million Californians breathe levels of CO that exceed outdoor limits.[5] Living in a home with a gas stove increases the risk of asthma in children, relative to those children who live in homes with electric stoves. A gas stove in the home increases the risk of experiencing asthma symptoms by 42%.[6] Meanwhile, having a gas stove increases the risk of being diagnosed with asthma by a doctor by 24%.[7]

One in eight Californians—5 million people—have asthma.[8] Asthma rates are higher in low-income communities and communities of color. [9] Consequently, these communities may be at higher risk of harms resulting from exposure to pollution from gas stoves, as some of the most susceptible populations are those with existing asthma.[10] Additionally, lower-income homes may be at a higher risk of exposure to gas stove pollution in the first place, as factors that contribute to higher levels of NOx in homes are more common in low-income multifamily housing. These factors include smaller unit size, more people per home, and inadequate ventilation.[11]

Furthermore, gas appliances also threaten air quality outdoors, as the combustion pollution from appliances like water heaters and furnaces is vented outside. According to new research, the residential sector is the fourth largest contributor to premature deaths caused by air pollution, primarily from the burning of gas and wood for heating and cooking.[12] Meanwhile, the majority of Californians already live

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[4] Jennifer M Logue et al., *Pollutant Exposures from Natural Gas Cooking Burners: A Simulation-Based Assessment for Southern California*, 122 ENVIRONMENTAL HEALTH PERSPECTIVES 43 (2014), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3888569/.

[5] *Id.*

[6] Weiwei Lin et al., *Meta-Analysis of the Effects of Indoor Nitrogen Dioxide and Gas Cooking on Asthma and Wheeze in Children*, 42 INTERNATIONAL JOURNAL OF EPIDEMIOLOGY 1724 (2013), *available at* https://doi.org/10.1093/ije/dyt150.

[7] *Id.*

[8] California Dep't of Public Health, Asthma's Impact on California: Recent Data from the California Breathing Asthma Program (2013), *available at* https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHIB/CPE/CDPH%20Document%20Library/AsthmaImpactFactSheet.pdf.

[9] Michael Guarnieri & John R. Balmes, *Outdoor Air Pollution and Asthma*, 383 LANCET 1581 (2014), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4465283; Christina M. Pacheco et al., *Homes of Low-Income Minority Families with Asthmatic Children Have Increased Condition Issues*, 35 ALLERGY AND ASTHMA PROCEEDINGS 467 (2014), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4210655/#!po=78.0000.

[10] Brady Seals & Andee Krasner, *Health Effects from Gas Stove Pollution*, Rocky Mountain Institute, Physicians for Social Responsibility, Mothers Out Front, and Sierra Club, 2020, p. 15, 32, *available at* https://rmi.org/insight/gasstoves-pollution-health.

[11] *Id.*

[12] Sumil K. Thakrar et al., *Reducing mortality from air pollution in the United States by targeting specific emission sources*, ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS, July 2020, *available at* https://pubs.acs.org/doi/10.1021/acs.estlett.0c00424

in communities where it is regularly unsafe to breathe.[13] Forty of California's 58 counties are designated as areas that are in non-attainment with the National Ambient Air Quality Standards.[14] With its high demand for new buildings, California is adding new gas connections faster than any other state.[15] Adding new gas appliances will only exacerbate California's struggles with poor air quality.

Buildings in California release 107 tons of NOx per day, nearly as much as the 118 tons/day of NOx from all the state's light-duty vehicles, and six times as much as the 18 tons/day from power plants.[16] Nitrogen oxides are also precursor emissions to other harmful pollutants, including both ozone and fine particulates ("$PM_{2.5}$").[17]

Against this backdrop, allowing the use of gas in new buildings means more asthma attacks, more missed school days, and more health costs. Without substantially reducing NOx emissions from buildings, California cannot hope to meet its air quality standards. However, a shift to all-electric new construction would limit new sources of these pollutants rather than moving California even further away from air quality attainment goals.

In sum, building emissions are already responsible for avoidable early deaths and they contribute to serious respiratory illnesses like asthma. An all-electric construction future in California would substantially reduce harmful combustion pollutants, including NOx and CO. Buildings can either work for Californians by promoting healthy air or work against public health by creating more polluted spaces indoors and outdoors. Ensuring that future buildings will be gas-free is an investment in clean air and the health of Californians and can open a path for other states to follow. For these reasons, the Commission should adopt an all-electric building code for the 2022 code cycle.

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[13] *See* U.S. Environmental Protection Agency, News Release, EPA Takes Action to Ensure California Meets Nation's Air Quality Standards (Sept 24, 2019) *available at* https://www.epa.gov/newsreleases/epa-takes-action-ensure-california-meets-nations-air-quality-standards.
[14] *See* Environmental Protection Agency, Current Nonattainment Counties for All Criteria Pollutants, *available at* https://www3.epa.gov/airquality/greenbook/ancl.html (Mar. 31, 2020).
[15] US Energy Information Association, Number of Natural Gas Customers *(2020)*, *available at* https://www.eia.gov/dnav/ng/NG_CONS_NUM_DCU_SCA_A.htm.
[16] California Air Resources Board, 2016 SIP Emission Projection Data, 2012 Estimated Annual Average Emissions Statewide (2019), *available at* https://www.arb.ca.gov/app/emsinv/2017/emssumcat_query.php?F_YR=2012&F_DIV=-4&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA#AREAWIDE
[17] California Air Resources Board, Nitrogen Dioxide & Health (2020), *available at* https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health

Respectfully submitted,

Organizations:

- Alliances of Nurses for Healthy Environments
- Climate Code Blue
- Climate Health Now
- Health Care Without Harm
- Physicians for Social Responsibility (National)
- Physicians for Social Responsibility, San Francisco Bay Chapter
- Physicians for Social Responsibility, Sacramento Chapter

Individuals:

John R. Balmes, MD
Professor, Environmental Health Sciences, University of California, Berkeley
Chief, San Francisco General Hospital, Division of Occupational and Environmental Medicine
Director, Northern California Center for Occupational and Environmental Health
Physician Board Member, California Air Resources Board (CARB)
Director, UC-Berkeley-UCSF Joint Medical Board

Bruce Bekkar, MD
Ob-Gyn Physician, Climate Activist

Barbara A. Cohn, PhD

Robert M. Gould, MD
President San Francisco Bay Area Chapter, Physicians for Social Responsibility

Katie Huffling, MS, RN, CNM, FAAN
Executive Director, Alliance of Nurses for Healthy Environments

T. Stephen Jones, MD, MPH
Centers for Disease Control and Prevention, retired

Josiah L. Kephart, PhD MPH
Postdoctoral Research Fellow, Urban Health Collaborative, Dornsife School of Public Health, Drexel University

Andee Krasner, MPH
Program Manager, Climate and Health, Greater Boston Physicians for Social Responsibility

Tom Lent
Former Policy Director for the Healthy Building Network, retired

Brita Lundberg, MD
Board Member, Greater Boston Physicians for Social Responsibility and CEO, Lundberg Health Advocates

Cynthia Mahoney, MD
Retired nephrologist, East Bay Area, Climate Health Now

Ashley McClure, MD
Primary Care Physician, Kaiser Oakland, Climate Health Now

Shelly L. Miller, PhD
Professor, Mechanical Engineering, University of Colorado Boulder

Amanda Millstein, MD
Primary Care Pediatrician, Hilltop Pediatrics, Richmond, Climate Health Now

Brady Seals
Senior Associate, Rocky Mountain Institute